

AN ABSTRACT OF THE THESIS OF

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Working conditions in the international garment industry have long been a concern and a process to assess and certify fair trade practices was developed as a means by which to improve those conditions. Standards for fair trade apparel include safe working conditions, fair wages, compliance with laws, and reduced environmental impact. This study examines consumers' willingness to pay for fair trade clothing. A stated choice experiment was conducted through a survey of 100 Portland, OR metropolitan area residents to examine stated purchase preference between T-shirts with varied combinations of four attributes: color, fair trade certification, organic certification, and price. The surveys were administered at the Food Innovation Center in Portland, OR in November 2012. To resemble the actual market a limitation on color choice was tested. Conditional logit analysis was used to analyze the impact of product attributes and consumer characteristics on choice. Results revealed that consumers were willing to pay significantly more for fair trade certified than for

organically certified T-shirts. Limiting color choice did significantly reduce selection of a T-shirt.

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Impact of Price and Color Availability on Fair Trade and Organic Apparel Choice

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I understand that my thesis will become part of the permanent collection of Oregon State University libraries. My signature below authorizes release of my thesis to any reader upon request.

Elizabeth Dee Hodgin, Author

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Impact of Price and Color Availability on Fair Trade and Organic Apparel Choice

1. Introduction

1.1 Evolution of Fair Trade

The concept of fair trade began in 1946 when Edna Ruth Byler, a Mennonite Central Committee volunteer, traveled to Puerto Rico. Byler witnessed devastating poverty despite women creating beautiful hand-made goods, such as lace. In response, Byler began to take goods to the United States, sell them and return the earnings to the Puerto Rican workers. This process evolved and in 1958 the fair trade retailer, Ten Thousand Villages was born (*Fair Trade Federation*, 2013a).

After Byler initiated the concept of fair trade, the movement began in the 1960s from initiatives in Europe that used the strategy of “trade not aid” (Raynolds, 2000). The first fair trade certification initiative began in 1988 as a result of declining world coffee prices. Labels such as the Netherlands Max Havelaar label began to grow across Europe. The labeling organizations banded together and in 1997 created the umbrella organization Fairtrade Labeling Organizations International (FLO). TransFair Canada, a FLO affiliate, opened in 1997. In 1999 TransFair USA (now Fair Trade USA) opened, then separated from the international system in 2011. The U.S. market has a number of fair trade

labor certification systems. These systems include: Fair Trade International USA, Fair Trade USA, and IMO Fair for Life (*Fair Trade Federation*, 2013a).

1.2 The Fair Trade Industry

There are four main groups, which compose the fair trade industry: producer organizations, buying organizations, umbrella bodies, and conventional organizations (such as supermarkets) (Moore, 2004). These groups obtain certification and display fair trade labels on products to differentiate themselves in the market. Consumer groups, corporations, governments, and the World Bank promote fair trade labeling of products to increase consumer awareness of what they are purchasing and asking them to pay to support production and trade that is more sustainable (than the conventional). Labeling also provides producers with more incentive to improve their environmental and social performance (Raynolds , 2000). There are several fair trade labels. Figure one below shows some of the fair trade labels for textile products seen in the U.S. market.

Figure 1.1: Fair Trade Marks



Green America is a non-profit with four strategies to help struggling communities gain a better economic situation as well as promote ethical manufacturing, production, and purchasing. One of the strategies is specifically geared toward promoting fair trade business principles (*Green America*, 2012).

Label STEP is a fair trade organization that works with carpet weavers (*Step: Fair Trade Carpets*, n.d.). Fair for life is a third party certification program focusing on social accountability. The organization is brand neutral and will certify agricultural, manufacturing and trading operations as fair trade practices (*Fair for All Worldwide*, n.d.). Green Tick™ will certify businesses, sites, products, and services if they are in accordance with the Green Tick™ sustainability standards. They are an independent sustainability certification agency (Harris, 2005).

The Fair Trade Federation (FTF) is composed of fair trade organizations. Members are accepted only after a rigorous screening process, which ensures the organization is committed to the nine FTF principles. Only 50-60% of applicants are accepted to the FTF. A committee of three FTF members makes all member decisions. Annual renewal is required where an update must be provided to the FTF to ensure continued compliance to standards. Third party verification is not required for working conditions and a random five percent of members are annually rescreened to ensure continued adherence to the practices (*Fair Trade Federation*, 2013c). Only admitted FTF members may display the logo (*Fair Trade Federation*, 2013b).

Fair Trade USA is a non-profit, third party certifier of fair trade goods. It works with over 800 US companies to ensure international fair trade standards are met (*Fair Trade USA*, 2010b). Operating across five regions in 75 countries, the World Fair Trade Organization (WFTO) promotes fair trade and is the only global network with members representing the fair trade supply chain from production to sale. This makes the WFTO a global representative body, which publicizes the organization's authenticity and dedication to upholding fair trade values. The organization has over 450 members devoted to 100% fair trade (*World Fair Trade Organization*, 2012). The WFTO label signifies organizations that practice fair trade, whereas the FLO label signifies fair trade products.

Finally, Fairtrade International (FLO) coordinates fair trade labeling at an international level. FLO sets international fair trade standards, organizes support for producers, develops a global fair trade strategy, and promotes trade justice at the international level. The FLO has 25 members from around the world, divided as follows: three producer networks, 19 national fair trade organizations, three marketing organizations, and two associate members (*Fairtrade International*, 2011). Members undergo a self-reporting screening process. A high level of transparency is required, where information on all business practices and relationships with producer groups are reported and checked to be in accordance with the nine fair trade principles. The FLO has several initiatives including: TransFair, Fairtrade Foundation, and Max Havelaar (*World Fair Trade Organization*, 2009a).

1.3 Growth of the Fair Trade Industry

In 1994 the FTF became incorporated, after over a decade of informal networking between entrepreneurs from the U.S. and Canada. The World Fair Trade Organization, formerly IFAT, was founded in 1989 as a “global network of committed fair trade organizations.” (*Fair Trade Federation*, 2013a).

Attention toward working conditions associated with apparel production has increased since the mid-1990s (Dickson, 2001). Since 2000 international fair

trade sales have dramatically increased accompanied by an expansion of available fair trade products. Consumer awareness of fair trade has also been on the rise. The first “World Fair Trade Day” was celebrated in 2002 in an effort to further consumer awareness and build connections amongst interested citizens and fair traders across the globe (*Fair Trade Federation*, 2013a).

In 2002 an estimate of the world fair trade market was US\$500 million (Moore, 2004), but it is likely this is an underestimate rise Non-food fair trade goods, such as crafts, jewelry, clothes and textiles were believed to amount to approximately US\$246 million in 2002 (Moore, 2004). The three dominant channels that distribute fair trade goods are dedicated retail outlets (ie, Ten Thousand Villages), supermarkets (buying fair trade coffee, chocolate, etc. from your local grocer), and mail order. In 2000 mail order and online sales were the least dominant of the three at less than 10% of sales (EFTA, 2001) but has increased. DAWS (2010) reported Internet sales at 13% and mail order at 6% of fair trade sales based on their 2010 survey. Fairtrade International’s Annual Report for 2011-2012 found that shoppers increased annual fair trade shopping by 12% from 2010 to 2011, spending US\$6.8 billion on retail fair trade products in 2011. Approximately a US\$90.5 million premium was paid to fair trade producers in 2011. Around 60% of consumers have seen the fair trade mark and of those, 90% trust the label. The fair trade industry is substantially growing with

more than 300 fair trade standards in 2011, three times more than in 2006

(*Fairtrade International*, 2012)

Fair trade sales grew in almost all countries between 2010 and 2011 (with exceptions of Estonia and Lithuania). Retail sales are highest in the UK with US\$2,086,150,634 spent on fair trade goods in 2011, followed by the US with US\$1,435,137,784 fair trade sales in 2011. The top six fair trade products in 2011 (as determined by sales volume) with their associated annual growth rates were bananas, 9%, cocoa, 14%, coffee, 12%, cotton (due to different reporting no growth rate could be determined), sugar, 9%, and tea, 8% (*Fairtrade International*, 2012).

Fair Trade USA developed standards independent from FLO in late 2010 when they added a new product category of apparel and linens. The goal is to provide direct economic benefit, specifically a premium, to a minimum of two supply chain levels. Premiums are paid to both factories and cotton farmers, with the minimum premium being equal to a country's minimum wage but trying to increase the premiums when possible to the standards of a living wage. Independent auditing companies are working in conjunction with Fair Trade USA to inspect factories and sewing workshops. Fair Trade USA reports that imports of fair trade certified garments into the U.S. grew from 14,961 in 2010 to 54,023 in 2011, more than tripling in one year. Premiums paid to factories (with the

majority located in India, Liberia, and Costa Rica) increased from \$2,871 to \$8,005 between 2010 and 2011. Over this same period the volume of cotton imported increased from 31,591 to 113,284 pounds with premiums paid to each cotton producer (majority of producers in India, Egypt, and Nicaragua) increasing from US\$860 to US\$3,582. Not only are volumes increasing but also the variety of products is growing, with the U.S. market diversifying by now importing knit tops, blouses, scarves, undergarments, kitchen linens, and baby clothes. Although growth from 2010-2011 is quite impressive Fair Trade USA is committed and dedicated to further increasing fair trade imports to the U.S. (*Fair Trade USA, 2011*).

1.4 Defining Fair Trade

In an effort to explain the concept of fair trade, the WFTO describes it as follows:

Fair Trade is more than just trading: it proves that greater justice in world trade is possible. It highlights the need for change in the rules and practice of conventional trade and shows how a successful business can also put people first, (*World Fair Trade Federation, 2009b*).

A well accepted general definition of fair trade is:

Fair Trade is a trading partnership, based on dialogue, transparency and respect, which seeks greater equity in international trade. It contributes to sustainable development by offering better trading conditions to, and securing the rights of,

marginalized producers and workers – especially in the South. Fair trade organizations (backed by consumers) are engaged actively in supporting producers, awareness raising and in campaigning for changes in the rules and practice of conventional international trade (Moore, 2004).

Moore (2004) emphasizes that the fair trade partnership helps countries in the “South” referring to the southern hemisphere. Although fair trade goods come from countries in both hemispheres there is a larger proportion of countries in the southern hemisphere producing fair trade goods. The WFTO along with the FLO are recognized internationally for setting consistent standards for fair trade. The WFTO thoroughly outlines ten principles to which members of the organization must adhere. They are as follows:

1. Creating opportunities for economically disadvantaged producers
2. Transparency and accountability
3. Fair trading practices
4. Payment of a fair price
5. Ensuring no child labor and forced labor
6. Commitment to non-discrimination, gender equality and freedom of association
7. Ensuring good working conditions
8. Providing capacity building

9. Promoting fair trade
 10. Respect for the environment
- (“10 Principles of Fair Trade,” 2011).

These principles help fair trade participants reach goals. These goals are summarized well by Moore (2004):

1. To improve the livelihoods and well-being of producers by improving market access, strengthening producer organizations, paying a better price and providing continuity in the trading relationship.
2. To promote development opportunities for disadvantaged producers, especially women and indigenous people, and to protect children from exploitation in the production process.
3. To raise awareness among consumers of the negative effects on producers of international trade so that they exercise their purchasing power positively.
4. To set an example of partnership in trade through dialogue, transparency and respect.
5. To campaign for changes in the rules and practice of conventional international trade.
6. To protect human rights by promoting social justice, sound environmental practices and economic security.

(Moore, 2004).

1.5 Shortcomings with Fair Trade

There are issues with fair trade. Foundational issues arise with fair trade in several ways. One is the idea of placing fair trade between “free trade” and protectionism, which raises questions about what a “fair” price is and other economic-centric questions. There are moral aspects with fair trade, which likely contribute to the range of disciplines that study the topic. Theology, sociology and development studies include a few of the disciplines that have studied fair trade, and challenges have arose due to inconsistencies in data collection. These inconsistencies make it difficult to properly assess trends in the fair trade movement (Moore, 2004).

Also, fair trade labels are in competition with many other labels. Southern hemisphere food producers, for example, see an organic label as an alternative (or a complement) to a fair trade label. Obtaining organic certification is risky for agriculturalists since it takes three years to convert a crop during which time yields often decrease while prices are stagnant at the conventional price point. However, organic products have potentially higher premiums than fair trade products. Another issue for Southern producers who

seek organic certification is that middlemen often exploit them unless they are a part of a fair trade network (Moore, 2004).

1.6 Importance of Fair Trade

Although there exist shortcomings with the fair trade movement, substantial benefits can be gained by participation in the movement. Since late 2012 and into the first half of 2013 issues of working conditions have been highlighted with media attention focused on ramifications of unsafe working conditions.

The topic of fair trade is on consumers' minds as international garment factories make headlines due to several fatal accidents. In September 2012 fires broke at two Pakistan garment factories killing 283 people. The factories doors were locked and windows barred increasing the death toll (Jawad & Abbot, 2012). In November of 2012 a garment factory caught on fire in Bangladesh killing 112 people. The building contained no emergency exits and stairways were blocked with yarn and clothes (Alam, 2012).

On 24 April 2013 a garment factory in Bangladesh collapsed. A day prior to the collapse an engineer had found the building to be unsafe and the police issued an evacuation order but workers were instructed to continue working (Associated Press, 2013a). After three weeks of looking for bodies the search

ended with a death toll of 1,127. Bangladesh has 3.8-million garment worker and 5,000 factories contributing to the country being the third-largest clothing exporter in the world (China is the top exporter followed by Italy) and the fastest growing garment industry (Al-Mahmood et al., 2013; Alam, 2012). Since 2005 at least 1,800 Bangladesh garment workers have been killed due to factory fires and building collapses (Associated Press, 2013b).

News reports on the aforementioned incidences have increased consumer awareness of unsafe working conditions in the apparel industry. Consumers are calling for more supply chain transparency for their clothing and footwear. Transparency of production practices in the food industry has been revolutionized in the last several years, showing that consumers can make a difference in the supply chain. Several retailers, including Everlane, are responding to consumer demands and increasing availability of production sourcing practices. Honest By, an online retailer founded in 2012, has a policy of 100% transparency and shares the full cost breakdown of its products. Other retailers and companies, such as Nike and Wal-Mart, report to be developing an index that incorporates labor, social, and environmental measures. The Sustainable Apparel Coalition had begun testing the Higg Index with environmental concerns as the primary focus, but as a response to the 2012-13 garment factory fires and collapse, labor and social concerns are being

incorporated into the index as well. There still remain retailers and companies that will not disclose their supply chain, reportedly due to the complexity of the sourcing process. There are also large retailers, including H&M and Joe Fresh, which have found cheap clothes sell, despite the potential poor conditions under which they were manufactured. Therefore, without the monetary incentive to do so, workplace protections are not implemented since the expense is not fiscally in the company's best interest (Clifford, 2013).

1.7 Background on Organic Cotton

Organic cotton is grown with environmentally low impact methods and materials. Production of organic cotton must be done without the use of synthetic fertilizers, herbicides, or pesticides. Once harvested, organic cotton is stored without rodenticide or fungicide use (Chen & Burns, 2006). Genetically engineered seeds cannot be used in organic farming. In 2009 175,113 metric tons or 802,599 bales of organic cotton were grown on 625,000 acres or 253,000 hectares (*Organic Trade Association*, 2010).

There are other trends in the cotton industry emerging. As an alternative for California farmers, where organic cotton cannot be successfully produced in large volumes, Cleaner Cotton™ has been introduced. Cleaner Cotton™ is the name for fiber that is responsibly grown, meaning the 13 most toxic chemicals

used in conventional cotton production are not used in production of Cleaner Cotton™ (*Sustainable Cotton Project*, n.d.). There are also environmentally friendly alternatives to dying cotton. Naturally colored cotton comes in shades of green and brown, is processed without the use of dyes, and has higher resistance to pests and disease, relative to white cotton. Green cotton fabric is not bleached or treated with any chemicals (except for natural dyes) and has been washed with mild natural-based soap (Chen & Burns, 2006).

There has been research into motivations for organic apparel demand. Since garments constructed from conventionally grown cotton fibers are visually indistinguishable from those produced with organic cotton, there is a possibility that consumers' willingness to pay the premium for organic cotton garments come from concern about environmental impacts (Casadesus-Masanell et al., 2009; Hulm & Domelsen, n.d.). However, it has also been shown that consumers are concerned with personal and family health. Statistics reveal consumers are more inclined to purchase organic clothing due to perceived health benefits. However, quality is a vital aspect in clothing purchases so the use of organic production should not let quality suffer (Hustvedt & Dickson, 2009).

1.8 Motivation for Studying Fair Trade vs. Organic

Ethical consumption in the US has been motivated more by environmental concerns than social concerns. America had a large environmental push in the late 1960s and early 1970s. The “green culture” that emerged seemed to dissipate but more recently has reappeared. Since the early to mid 2000s the environmental movement has picked back up in America. Thousands of major headlines between 2007 and 2008 emphasized greener lifestyles. *Time Magazine*, *CNN*, *The New York Times*, and *Newsweek* are a few of the sources proliferating green headlines. Environmental awareness has swept across the US as news media coverage, documentaries, pop culture concerts, and books on sustainability have been bombarding the streets (Strife, 2010). One *New York Times* reporter calls for a president who is “green” and “environmental” with a motto of “Green is the new red, white and blue” (Friedman, 2007). A *Newsweek* article cites that American politics is refocusing on environmentalism, spurred by citizens concerns. From 2004 to 2006 the number of Americans who claim they worry about the environment “a great deal” or “a fair amount” increase from 62 to 77% (Adler, 2006).

Organic cotton apparel and home textile products reached global sales of approximately \$4.3 billion in 2009. This was a 35% increase over the \$3.2 billion

sales from the previous year (*Organic Trade Association*, 2010). There is a trend of clothing manufacturers to turn to organic cotton, including Nike, Patagonia, Marks & Spencer, and Mountain Equipment Co-op. Patagonia began producing garments of 100% organic cotton, while Nike blends organic and conventional cotton so a garment has 3-5% organic cotton. Since Nike has such a large production volume the small percentage has a large impact (Geller, 2004).

Studying media, statistical tends, and apparel companies' manufacturing practices demonstrates the "green" culture that is brewing in the American society. Therefore when considering ethical consumption of fair trade apparel it will be interesting to compare how fair trade apparel purchases compare to organic apparel purchases.

1.9 Objective

According to Fair Trade USA, "Americans buy more clothing than any other nation in the world," (*Fair Trade USA*, 2010a). Data from a 2012 census reports U.S. retail sales in clothing and accessories stores total \$239.2 billion (this figure includes all items sold in clothing stores therefore the number is slightly inflated but a significant portion of the sales are devoted to clothing) (*Plunkett Research, Ltd.*, 2013). This study will shed light onto an under-researched area, fair trade apparel. Especially given recent events in the

garment manufacturing industry, it is important now to learn about fair trade and potentially discover how to increase ethical consumption. With American consumers composing a large part of the apparel market, their purchasing decisions have an even greater impact on the industry than many other small market segments. Therefore it is especially important for the American consumer to consider how their purchase decisions impact society and the environment.

The objective of this study is to determine specific factors influencing consumers' purchases of fair trade apparel. This study will use cotton T-shirts as a representative apparel item. Specifically we want to consider:

- How knowledge of fair trade impacts purchase decisions
- How the limiting factor of color affects consumers apparel purchases
- How consumers value fair trade certified apparel relative to certified organic apparel

2. Literature Review

Research on ethical purchases, such as fair trade, is limited. Existing studies in this area focus on ethical purchases in general, including environmentally and socially conscious purchases. Specific studies on fair trade are very narrow. There exists more research regarding fair trade purchases of food than apparel. Therefore the literature review looks at a variety of papers. The examined literature is centered on ethical purchase motivations, ethical food studies, and ethical apparel studies.

2.1 Ethical Purchase Motives Studies

There have been several studies considering consumer motives for purchasing ethical products. The literature in this section encompasses personal beliefs and values, economic factors, and political factors.

Cho & Krasser (2011) consider how cultural values, anticipated benefits, self-identity, and attention to media motivate ethical consumption. The sample came from surveys of university students conducted in Austria and South Korea. It was found that self-identity, post-materialism, and news media were significant factors in motivating ethical consumption. Also, culture was found to impact ethical consumption. However with only two cultures studied a more

thorough analysis is needed to find more detail. There is potential self-reporting bias since subjects filled out a questionnaire (Cho & Krasser, 2011).

Cho & Krasser (2011) is particularly important since ethical consumerism was considered on the international level whereas many studies are concentrated either on US or EU consumption. However, by limiting the study to students the population is small and does not represent the entire population. Factors including education, age, and income from the Cho & Krasser (2011) sample will likely be contained in a relatively small range. Price often plays a significant role in consumers purchasing decisions. In the case of students, who often do not hold a full-time job, incomes are relatively lower when compared to their working counterparts, and therefore price would be expected to impact purchases to a greater extent.

Although consumption decisions are normally examined from an economic standpoint Scruggs et al. (2011) argues that greater social or political issues often motivate ethical purchases. One example is sugar boycotts in the late eighteenth century. In this example consumers used their purchase decisions to influence public policy. Findings by Scruggs et al. (2011) suggest that consumer purchasing decisions can be altered by increasing consumer knowledge of product production practices and knowledge of consumer impact on social and environmental outcomes. Females, higher income individuals and

those with higher education levels tend to be political consumers (Scruggs et al., 2011).

A 2009 comprehensive national survey focused on consumers' knowledge, beliefs, attitudes, and behaviors related to political consumption issues. Specifically the study considered green versus social consumption. Green consumption was found to be more prevalent than social consumption. While approximately half the survey respondents reported to engage in at least one green consumption activity (defined: either ceased buying a product due to inhuman animal treatment or due to companies pollution record) only two in five people reported to engage in at least one social consumption activity (defined: either ceased buying a product due to use of sweat shops or paying poverty wage levels) (Scruggs et al., 2011).

Scruggs et al. (2011) outlines four critical aspects of information to facilitate political consumption. First, information regarding production characteristics must be readily available. Second, this information must also be reliable. Third, consumers need a high level of factual knowledge on the political issue. Finally, consumer access to politically desirable goods must be easily obtained (Scruggs et al., 2011).

Scruggs et al. (2011) found that believing production conditions are bad do not impact ethical consumption, but the belief that altering personal

consumption will impact poor conditions does influence ethical consumption.

Results of this study also suggest that information may play a large role in political consumption. Associational membership to at least three groups increases the likelihood an individual will partake in political consumption patterns to 79% (opposed to the 53% when an individual participates in no groups) (Scruggs et al., 2011).

The scope of the Scruggs et al. (2011) study is limited as it only covers a narrow set of political consumption behavior. Also, Scruggs et al. (2011) does not delve into the frequency and volume of political consumption purchases. The study would be more beneficial, especially to producers and manufacturers, if frequency and volume were included. If the frequency and volume of good purchases motivated by political consumption were known, manufacturers may increase production of those goods. However, as the study stands the conclusions are difficult to transfer to the market in the form of increased profits.

Carrigan & Pelsmacker (2009) consider how the strength of the global economy influences ethical purchase decisions. The global market saw a rise in ethical consumption when the market was strong (low unemployment, low interest rates, soaring house prices, and healthy retail conditions). In the late 2000s the market turned downward with the global recession where we saw

cost of living increases, tighter lending standards, and increasing unemployment.

The US market saw a downturn in women's clothing sales with the global recession. Previous recessions, such as in the 1980s revealed a "lipstick" effect where consumers increased cosmetic purchases while decreasing other, specifically larger luxury item, purchases. Japanese department stores had a 25% decrease in clothing consumption and a 10% increase in accessory sales. The Japanese organic food sector took a hit in the recession, but the demand for fair trade food increased.

To help understand consumer motivations for purchases beyond that of the global economies strength, Carrigan & Pelsmacker (2009) asked consumers their opinions on purchasing ethical goods. Consumers report confusion due to marketing schemes and feel a potential lack of authenticity in companies' claims of selling ethical products. The UK found that grocery customers were more likely to make ethical purchases when they see a value.

Fair trade is particularly strong in Europe. Approximately half of consumers in the UK claim they would buy fair trade products. Germany and The Netherlands pioneered fair trade, which in 2007 had international sales of US\$2.25 billion (a 47% annual increase). In 2008 UK fair trade retail sales exceed US\$986 million. It has been found that environmental and ethical products are

priced with approximately a 45% premium in the UK, but consumers are only willing to pay a premium of 20% (Carrigan & Pelsmacker, 2009).

Considering what factors impede ethical consumption, Bray et al. (2011) found that consumers think fair trade goods are of lower quality than alternatives. Bray et al. (2011) found the following seven factors, from a qualitative data analysis, impede ethical consumption: price sensitivity, personal experience, ethical obligation, lack of information, quality, inertia, and cynicism (Bray et al., 2011).

Bray et al. (2011) findings of quality impeding ethical consumption follow what Hustvedt & Dickson (2009) found, that consumers would not sacrifice quality in order to partake in ethical consumption. Bray et al. (2011) brings to light factors important to study however, since the study is of a qualitative nature more work is necessary. Without quantitative data it is not known whether or not the identified factors have a significant impact on consumption of ethical goods. Also, with focus groups there is greater risk of self-reporting bias. As Cho & Kasser (2011) discuss, self-reporting bias can impact responses but is less likely to be an issue when data is collected anonymously, such as through an online survey. Bray et al. (2011) has the potential for skewed results since in-person interviews were conducted.

Chatzidakis et al. (2007) looks at how neutralization (defined: “a mechanism that facilitates behavior that is either norm violating or in contravention of expressed attitudes”) techniques are used by consumers with respect to fair trade. The study found that appealing to higher loyalties, denial of responsibility, and denial of injury to workers were the neutralization techniques most widely used to justify a lack of fair trade purchases. Common statements to deny responsibility included that the consumer was uninformed on the concept of fair trade; there exists poor distribution and promotion of fair trade products; and fair trade goods are too expensive. Common notions of injury denial included: fair trade is a marketing ploy; the fair trade movement is too small therefore only contributes little to nothing to the welfare of Third World producers; and fair trade “does not lead to a systemic change in trading systems,” (Chatzidakis et al., 2007, pg. 93). Chatzidakis et al. (2007) was able to show that consumers have knowledge of fair trade but their purchases do not fall in line with the ideal ethical consumption because consumers are reasoning their way out of purchases.

The preliminary Chatzidakis et al. (2007) study was qualitative and composed of individuals attending a Fair Trade Roadshow promotional event at a UK university. In-person interviews were used to collect data on ethical purchasing attitudes and decisions. This has type of study has limitations as

discussed in Bray et al. (2011) since the data is qualitative and there is potential self-reporting bias. The sample group is also a potential limitation of this study since the attendees of the promotional event were either receiving a university education or employed by the university, suggesting that the study was composed of highly educated individuals.

2.2 Ethical Food Study

Loureiro & Lotade (2005) consider consumer preferences for three different coffee labeling programs, specifically fair trade coffee, shade grown coffee, and organic coffee. A survey was conducted in Boulder, Fort Collins, Loveland, and Greeley, Colorado as well as Cheyenne, Wyoming. There were 284 completed surveys. The survey used a contingent valuation method with a payment card. Loreiro & Lotade (2005) found that fair trade coffee provided the greatest premium of \$0.22 per pound of coffee over the organic price. A premium of \$0.20 and \$0.16 are paid per pound of coffee for shade grown and organic coffee, respectively. Due to responses from an in-person survey, it is suggested that altruism may account for the large fair trade premium. It was found that females with higher incomes who are more sensitive toward environmental issues are more likely to pay a premium for coffee that is fair trade, shade grown, and organic (Loureiro & Lotade, 2005).

Loureiro & Lotade (2005) provide interesting insights. They find that the fair trade premium paid for coffee is greater than the organic premium consumers will pay for coffee. This is believed to be due to the fact that consumers are more concerned with working conditions than environmental issues. However there are limitations. The payment card method was used to elicit consumers' willingness to pay a premium for coffee labels. There is concern that the hypothetical questions lead to a hypothetical answer. Also, a larger, more diversified sample may be useful so that results can be more generalizable (Loureiro & Lotade, 2005).

Cranfield et al. (2010) surveyed consumers in Toronto, Ontario and Vancouver, British Columbia to discover what attributes impact consumer preferences for fair trade coffee. Six coffee attributes are tested: price, fair trade label, roast, production method, region of origin, and coffee form. Three price levels were available for consumers: \$5.99 per pound, \$11.99 per pound, and \$17.99 per pound, and three fair trade claims were made: 'Certified Fair Trade,' 'Fair Trade,' and 'No Claim.' The final dataset had responses from 400 individuals, equally split between the two locations. Price was found to be the most important attribute followed by the fair trade claim, region of origin, method of production, roast, the bean, and form of the coffee (Cranfield et al., 2010).

Discovering the attributes consumers' value when purchasing coffee is a useful finding of Cranfield et al. (2010). One of the motivations for the study was to make the results more generalizable by not limiting the sample location. However, Cranfield et al. (2010) only sampled two cities in Canada. Also, the study may have been improved upon if premiums were included so that the amount consumers will pay for a coffee attribute would be uncovered.

Trudel & Cotte (2009) conducted an experiment to test if consumers will pay a high enough premium for socially responsible goods to make a socially responsible company profitable, or if consumers are more driven to decrease purchases made to companies they specify as unethical. Coffee was the first good Trudel & Cotte (2009) tested since their sample set was familiar with the product and there is a narrow set of attributes for which consumers have preferences. Consumers were divided into three experiential groups: group one received information on ethical practices of the fictitious coffee manufacturer, group two received information on unethical practices of the fictitious coffee manufacturer, and group three received no information on the manufacturing/trading processes of the company. Results showed that the premium consumers would pay for ethical coffee was approximately half of the "punishment/discount" price they would inflict if a company were unethical,

demonstrating that consumer respond with greater magnitude to negative claims versus positive claims (Trudel & Cotte, 2009).

Trudel & Cotte (2009) find useful results but there is difficulty translating the results to the market place. A manufacturer will not make unethical practices readily available to consumers. If a competitor illuminates unethical practices consumers may hold animosity against the competitor for the slander advertisement. Therefore it may be difficult (or take extra effort beyond that required by customary grocery purchase decisions) for company practices to be revealed and the market to react as this study suggests.

2.3 Ethical Apparel Studies

Trudel & Cotte (2009) not only considered coffee but also tested how a company's degree of ethicalness (proxy by organic) affected clothing purchase decisions. Using cotton T-shirts, Trudel & Cotte (2009) gave five groups of consumers differing blend levels of organic cotton with conventional cotton. Group one received information that shirts were 100% organic cotton, group two that shirts were 50% organic, group 3 read that shirts were 25% organic, group 4 received no ethical (ie, organic) information and group 5 received information that the company producing the shirts was unethical via their extensively harmful environmental practices. Consumers revealed an average willingness to

pay significantly higher for the three levels of ethical shirts than the unethical shirt. However, there was not a significant difference in price premiums between ethical options, indicating that once a company has an ethical reputation being “more ethical” will not monetarily benefit them (Trudel & Cotte, 2009).

Although Trudel & Cotte (2009) obtain values of premiums consumers revealed they are willing to pay, the study does not address the incomplete knowledge existing in the market. Before a purchase decision was made, respondents were given differing levels of information on cotton production and information on the ethical practices of the T-shirt manufacturer. With the scope of the Internet there is significant information readily available to consumers but many consumers do not invest the time to research products and companies. Companies with ethical practices often make an effort to inform the consumer of their corporate social responsibility practices (such as including informational hang-tags on clothing) but the information does not always reach consumers. Also, information on manufacturers with unethical behavior is not shared as frequently with consumers. It is beneficial to uncover a premium as Trudel & Cotte (2009) do, but the study overlooks realistic market conditions so that the uncovered premiums may be difficult for ethical manufacturers to realize.

Littrell et al. (2005) considered how to market fair trade apparel to different generations. Consumers report to differentiate fair trade goods from conventional goods by looking at the uniqueness (if it is unique it is more likely to be fair trade). It has been discovered that consumers look to the uniqueness of products, via the ethnic and handcrafted appearance, to help determine authenticity. Littrell et al. (2005) found that consumers who focus on fashion are less likely to purchase fair trade clothing (Littrell et al., 2005). Since it is the uniqueness of fair trade apparel that consumers consider to be authentic there may be a lower purchasing intent for consumers with tastes and preferences that do not match the “ethnic and handcrafted appearance” in their clothing. However, many fair trade clothing items in the market today do not carry the distinct ethnic look but rather follow more conventional fashion trends. Therefore the question becomes why the consumer is purchasing the fair trade apparel. If a consumer wants to wear fair trade clothing so that others recognize their charity, purchasing fair trade apparel that follows mainstream fashion trends will not suffice. If, however, consumers want to help the disadvantaged there are options to be fashionable as well as ethical. Littrell et al. (2005) does not address to this line of questions.

Dickson (2001) used a public opinion poll and found consumers would support policies centered on improved working conditions for apparel

manufacturers. Consumers' most concerned with socially responsible behavior are typically women who are over 40 years of age (Dickson, 2001).

Dickson (2001) used a conjoint analysis to determine the likelihood of future purchase decisions of 'No Sweat' apparel. By differing quality level, color options, fiber content, price, and presence of a 'No Sweat' label Dickson (2001) found future purchase probability increased most often when the shirt was of the best quality, made in classic colors (defined as white and light blue rather than fashion colors of French blue, sage and black), 100% cotton, at a low price point (specifically \$17.99), and featured the 'No Sweat' label. It was suggested that women are more likely to use the 'No Sweat' label because the gender is more involved in caregiving (Dickson, 2001). Questions of quality, color, fiber, and price are included in this paper's survey as well. The 'No Sweat' label provides a social motive for purchases whereas fair trade includes both social and environmental motives for purchases. 'No Sweat' labels may be easier to understand so consumers may have stronger knowledge of what the label means. Many consumers however do not feel very well informed on the concept of fair trade. The lack of knowledge of what exactly fair trade is may pose interesting points for the study of interest in this paper.

Dickson (2000) considers female consumer's purchases of jeans to determine how their values, beliefs, knowledge and attitudes influence

purchasing decisions, specifically as related to socially responsible purchases. In 1996 the Department of Labor made a push to support ethical consumption, especially in the apparel sector. This was done on the assumption that consumers care about ethical consumption and would alter their purchasing behavior to help eliminate unethical practices. It was found consumers hold a weak knowledge of social issues in the apparel industry. Therefore education is suggested to help influence consumers to make more ethical purchases. By educating consumers on ethical consumption and providing consumers with the criterion they seek of clothing (ie, quality, comfort, etc.) manufacturers could likely increase ethical apparel sales (Dickson, 2000).

A major downfall of Dickson (2000) is the low response rate, which likely is causing biases. The sample is composed of relatively highly educated females. Therefore biases may occur since the higher educated group may hold more previous knowledge of socially responsible practices. Results of this study also will likely very greatly depending on when the study is administered. In 1996 significant media attention was given to sweatshop problems after Kathie Lee Gifford began initiatives against sweatshops. In the wake of the 2012-13 Bangladesh fires and building collapse, media attention again increasingly focuses on working conditions. The surveys in Dickson (2000) and the study of focus in this paper were both given immediately before times of increased media

attention. If similar studies are conducted in the wake of increased media coverage the results will likely be significantly different as suggested by Cho & Krasser (2011).

One especially important point illuminated in Dickson (2000) is the history of the US government attempting to support ethical consumption in the apparel sector. For example, in 1996 a list of garment ‘Trendsetters’ was released by the US Department of Labor. The ‘Trendsetter List’ is a directory of apparel manufacturers and retailers that apply extra effort to ensure goods are not made under sweatshop conditions. To obtain a position on the list companies had to report their voluntary efforts towards ensuring manufacturing processes were complied with labor laws (U.S. Department of Labor, 1996).

Halepete et al. (2009) study of fair trade clothing shoppers at MarketPlace in Illinois found that consumers were dissatisfied with the color, size, and embroidery options available for fair trade clothing. Since fashion trends change at rapid rates consumers often perceived significant social and financial risk with purchase decisions. However, the typical fair trade clothing consumer was found to have low risk concerns, possibly due to confidence in individuality exhibited by many fair trade consumers (Halepete et al., 2009).

Consumers who purchase fair trade goods are concerned with expressing their individuality and therefore are extensively involved with their apparel

products. In an online survey of female MarketPlace consumers, 87% of respondents said that if they were to purchase a personalized garment, color choice would be their most favored personalization option (Halepete et al., 2009).

The Halepete et al. (2009) study has many useful qualities. A principal component analysis is used to extract indicator variables of parceled uniqueness, involvement, risk, attitude, and intention variables in order to improve the overall fit of the data in the final model. This study uses a principal component analysis for similar purposes. Halepete et al. (2009) uses qualitative data to discover consumers' purchases. Unlike many of the other reviewed ethical consumption studies Halepete et al. (2009) considers tangible attributes, such as color, as opposed to opinions, such as punishment for unethical companies. Both sets of information are important but with fewer researchers focusing on the former, Halepete et al. (2009) is a very valuable study.

However, Halepete et al. (2009) used a study of women from Illinois and therefore results may not be generalized. Surveys were distributed via email, which would help with self-reporting bias. Certain questions posed in the survey which are often considered more personal, such as a person's weight, may have a higher chance of having self-reporting bias, even when the survey is anonymous.

3. Theoretical and Empirical Model

3.1 Utility Theory

For discrete choice models the dependent variable is an indicator of whether an outcome has occurred and the numeric value assigned to the variable does not have a quantitative meaning. These models are based on consumer preferences where the consumer is faced with multiple choices, and through choice selection reveals information on his/her underlying preferences. Random utility is appropriate for such models (Greene, 2012). However, before discussing random utility the basic economic theory of utility should be well understood.

There are three elements that most economic models share. These elements are: (1) a *ceteris paribus* (meaning other things the same) assumption, (2) an assumption that economic decisions makers are attempting to optimize something, and (3) a clear distinction between positive and normative questions. The first assumption is used to determine how specific forces in a model operate. There are outside forces assumed to be fixed during the time period of study. This assumption allows for focusing on a few factors in a model. This assumption has limitations since in economics it is unusual to conduct controlled experiments. Statistical methods are therefore used to control the experiment methods. The second element deals with the assumption that economic actors

are attempting to optimize. What specifically one attempts to maximize differs based on the model. Firms maximizing profit, firms minimizing costs, consumers maximizing utility, and regulators maximizing public welfare are a few of the optimizations models that may be applied. A benefit of the optimization assumption is that it allows economists to draw on mathematical techniques in order to solve the models. Another benefit of the optimization assumption is that it is empirically valid, and “fairly good” at explaining reality. The third element common to economic models involves the attempt to differentiate to between positive and normative question. A positive theory is one that attempts to explain the phenomena observed in the real world. Whereas a normative theory advocates for what should be done, positive economics attempts to determine how resources are actually allocated (Nicholson & Snyder, 2008).

This study is based on a model in which consumers are selecting to optimize their utility. Utility is how economists measure people’s rankings of all possible situations. Four axioms of rational choice underlie the theory of utility: completeness, transitivity, continuity and non-satiation. Completeness states that an individual can always specify a preference between two alternatives or that both options are equally desirable. Transitivity states that preference between situations can be transferred to determine preference for a third

situation so that choices are internally consistent. Therefore, if an individual reports that, “A is preferred to B” and “B is preferred to C” then by transitivity “A is preferred to C.” Continuity is important if individuals’ choices are being examined when there are relatively small changes in income and prices. If an individual prefers A to B then any situation “suitably close to” A is preferred to B.

The final axiom of non-satiation states that for an individual more is always better. Therefore an individual will have greater utility if given more of situation

A. An individual’s utility function can be represented as follows:

$$U(x_1, x_2, \dots, x_n) \quad (3.1)$$

where x_1, x_2, \dots, x_n are the quantities of each n good that can be consumed in a given period (Nicholson & Snyder, 2008 and Montgomery, 2012).

Under the traditional economic theory consumer utility is usually derived from the assumption that it is the good from which a consumer derives utility. However, following Lancaster (1966) it is often a better representation to show that it is the attributes or characteristics of a good from which consumers derive utility. Since all goods possess multiple characteristics, the simplest consumption activity has joint outputs. It is assumed that a good or bundle of goods characteristics are the same for all consumers with equivalent units of measurements so that the allocation of characteristics is fixed and the

consumer's choice is derived only from the characteristics available to the population (Lancaster, 1966).

A binary choice is a type of discrete choice where an individual chooses between two situations. The individual, following economic theory, will choose the situation from which the greatest level of utility can be derived. Random utility models provide interpretation for binary choice outcomes. Under random utility theory, an individual's utility can be represented as follows:

$$U = \mathbf{w}'\beta + \mathbf{z}'\gamma + \varepsilon \quad (3.2)$$

where \mathbf{w} is an observable vector of characteristics of the individual (such as gender, age, income, etc.) and \mathbf{z} is a vector of the choices attributes. The random error term is represented by ε and encompasses stochastic elements specific and private to the individual (Greene, 2012). This binary model can readily be expanded to multiple choices as will be done for this analysis.

3.2 Linear Probability Model

A discrete choice model works well for this study since the dependent variable considers whether or not a consumer will purchase a fair trade T-shirt.

The following information is from Wooldridge (2009) and Greene (2012). When a variable is non-quantitative it must be given a numerical value to be represented. Binary variables, which take on a value of either zero or one, are

often used to represent qualitative factors. When the dependent variable in a model is binary the model is classified as a linear probability model.

Consider a multiple regression model:

$$y = \beta_0 + \beta_1 x_1 + \dots + \beta_k x_k + \varepsilon \quad (3.3)$$

where x_j are the independent variables explaining the dependent variable y , β_j are the coefficients on the explanatory variables providing the magnitude of the independent variables impact on the dependent variable and ε is a random error term. When y is binary β_j no longer represents the change in y given a one-unit change in x_j , holding all else constant. Using the zero conditional mean assumption:

$$E(\varepsilon | x_1, \dots, x_k) = 0 \quad (3.4)$$

the multiple regression model becomes:

$$E(y | \mathbf{x}) = \beta_0 + \beta_1 x_1 + \dots + \beta_k x_k \quad (3.5)$$

where $\mathbf{x} = x_1, \dots, x_k$. Since the expected value of y is the same as the probability of a ‘success’, indicated by $y = 1$, it holds that $E(y | \mathbf{x}) = \Pr(y = 1 | \mathbf{x})$. Therefore the equation can now be written as:

$$\Pr(y = 1 | \mathbf{x}) = \beta_0 + \beta_1 x_1 + \dots + \beta_k x_k \quad (3.6)$$

which shows that the probability of success is a linear function of x_j . The $\Pr(y = 1 | \mathbf{x})$ is the response probability, as it is the probability the binary dependent

variable is one conditioned on all independent variable. This linear probability model differs from the multiple regression model since β_j now represents the change in probability of ‘success’ when x_j changes, holding all else constant.

The linear probability model has two distinct drawbacks since the fitted probabilities can lie outside the zero-one range and the explanatory variables’ partial effects are constant. The logit and probit binary response models overcome these shortcomings but the models are more difficult to interpret.

3.3 Logit Model

Underlying the logit and probit models is the latent variable model, which is a model where the dependent variable is a function of an unobserved variable.

Unobserved y^* is determined by:

$$y^* = \mathbf{x}'\boldsymbol{\beta} + \varepsilon, \quad y = \mathbf{1}[y^* > 0] \quad (3.7)$$

where $\mathbf{1}[\cdot]$ is an indicator function defined as a binary outcome, taking on a value of one if the event (ie, $y^* > 0$) is true and zero otherwise. When $y^* > 0$, y is one and when $y^* \leq 0$, y is zero. Assume that ε is an independent error term with a standard logistic or standard normal distribution that is symmetrically distributed around zero. In equation (3.7) the indicator function reveals that zero is assumed to be the threshold value. To demonstrate this concept let a be

a supposed nonzero threshold and let β_0 be an unknown constant term. The probability that y equals one is,

$$\Pr(y^* > a | \mathbf{x}) = \Pr(\beta_0 + \mathbf{x}'\beta + \varepsilon > a | \mathbf{x}) \quad (3.8)$$

$$= \Pr[(\beta_0 + a) + \mathbf{x}'\beta + \varepsilon > 0 | \mathbf{x}]$$

Since the constant term is unknown the value $(\beta_0 - a)$ remains an unknown parameter and can be simplified and represented as β_0 . Therefore it is shown that the choice of threshold value from equation (3.7) does not change the model. Choosing zero as a threshold value is a normalization with no significance. From equation (3.7) and the assumption that ε has a standard logistic or standards normal distribution, a response probability for y is derived using the fact that the distribution is symmetric,

$$\Pr(y = 1 | \mathbf{x}) = \Pr(y^* > 0 | \mathbf{x}) \quad (3.9)$$

$$= \Pr(\varepsilon > -\mathbf{x}'\beta | \mathbf{x})$$

$$= \Pr(\varepsilon < \mathbf{x}'\beta | \mathbf{x})$$

$$= F(\mathbf{x}'\beta)$$

where $F(t)$ is the cumulative distribution function (cdf) of the random error term ε that only takes on values between zero and one.

Equation (3.9) can be used to examine a binary response model:

$$\Pr(y = 1 | \mathbf{x}) = F(\mathbf{x}'\beta) \quad (3.10)$$

where it is seen (3.9) and (3.10) are equal. The latter statement corrects for one of the drawbacks inherent in linear probability models since all response probabilities will lie between zero and one.

For the logit model F is the logistic function:

$$\begin{aligned} F(\mathbf{x}'\beta) &= \Pr(y=1|\mathbf{x}) \\ &= \frac{\exp(\mathbf{x}'\beta)}{1+\exp(\mathbf{x}'\beta)} \\ &= \Lambda(\mathbf{x}'\beta) \end{aligned} \quad (3.11)$$

where $\Lambda(\cdot)$ is the logistic cumulative distribution function for a standard logistic random variable.

By themselves, the magnitudes of each β_j is not particularly useful since y^* most often lacks a well-defined measurement unit. Although an ideal estimate would give the effect of x_j on $\Pr(y = 1|\mathbf{x})$, this is difficult since $F(\cdot)$ is not linear.

Letting $p(\mathbf{x}) = \Pr(y = 1|\mathbf{x})$ and assuming x_j is roughly continuous, the partial derivative:

$$\frac{\partial p(\mathbf{x})}{\partial x_j} = f(\mathbf{x}'\beta)\beta_j \quad (3.12)$$

where $z = \mathbf{x}'\beta$ and $f(z) \approx (df/dz)^*(z)$ provides the partial effect of x_j on the response probability. From this it is seen that f is a probability density function

due to the fact that F is the cumulative distribution functions of a continuous random variable. For the binary logit and probit models $F(\cdot)$ is an increasing cumulative distribution functions, which leads to $f(z) > 0$ for all z .

3.4 Conditional Logit Model

The logit model has several extensions beyond the basic form. This study focuses on the conditional logit model since the conditional logit considers data concerning choice-specific attributes as opposed to individual-specific characteristics. Random utility, which was discussed in section 3.1, motivates unordered choice models like the conditional logit. Following from equation (3.11), the conditional logit includes a summation of the denominator. This sum is the numerator over all alternatives. Let $\mathbf{X}_i = \mathbf{x}_{i1}, \mathbf{x}_{i2}, \dots, \mathbf{x}_{ij}$ where individual i makes decisions based on a total number of J alternatives. Then, the conditional logit model can be represented as,

$$\Pr(Y_i=j | \mathbf{x}_{i1}, \mathbf{x}_{i2}, \dots, \mathbf{x}_{ij}) = \Pr(Y_i=j | \mathbf{X}_i) \quad (3.13)$$

$$= \frac{\exp(\mathbf{x}'_{ij}\beta)}{\sum_{j=1}^J \exp(\mathbf{x}'_{ij}\beta)}$$

where \mathbf{x}_{ij} and β are vectors. The vector \mathbf{x}_{ij} represents the attributes listed in each choice question while β is a vector of the parameter estimates for each of the attributes.

4. Approach and Methodology

The objective of this study was to determine specific factors influencing consumers' purchases of fair trade apparel. To obtain data for the discrete choice model a survey was conducted. The process of data collection will be described in this section.

4.1 Survey Design and Data Collection

On November 28th and 29th of 2012 a survey was conducted at the Food Innovation Center in Portland, OR. Respondents were recruited for an experimental auction of apples via an online screener survey. One question in the screener survey asked if consumers purchase cotton T-shirts. Therefore selection of candidates for the apple auction was limited to only those who purchase cotton T-shirts. The screener also ensured that a portion of the consumers invited to the apple survey were natural food store consumers. An approximately equal number of consumers were natural food store verses non-natural food store shoppers.

After each session of the apple auction was complete an announcement was made to participants that another survey was available for them to take. The second survey developed for this study regarded clothing choices and collected the data analyzed in this study. The survey took approximately 20

minutes to complete and was delivered on computers using Compusense software. There were ten computers loaded with the survey, which was taken in sensory testing booths. Respondents received a \$5 payment for survey completion that was announced with the introduction. Observations from 100 respondents were collected.

The full survey, which can be found in the appendix, was composed of 30 questions but due to subparts to the questions 51 variables were collected. Questions covered six main areas. First consumers ranked ten factors that are important when purchasing T-shirts. Then questions regarding consumers preferred and actual purchase decisions of different goods were asked. Next the choice questions were posed where color, preference of fair trade, organic, or conventional cotton T-shirts, and price were varied. Consumers could always select not to buy any of the options. After the choice questions were completed, behavioral questions related to the environment, labor conditions, and health were included as well as a question where respondents shop for groceries. Questions were then posed to discover consumers' opinions and knowledge of fair trade and organic practices. The final section of questions collected demographic data including age, income, and education.

When consumers were asked to provide the preferred and actual purchases they make for products there were several options to select.

Respondents could state they do not purchase the good at all, or select conventional, organic, fair trade or other eco-label. Participants were not asked to provide additional information if they selected other eco-label but we can speculate on possible alternatives such as naturally colored cotton, green cotton, Cleaner Cotton™, or both organic and fair trade certified cotton clothing.

T-shirts were selected for this study primarily because they are a gender neutral garment that is frequently purchased and familiar to people. Also, the shirt follows conventional cuts. Cotton was chosen since it is a desirable fabric that is one of the mostly widely used fibers in apparel production (Rivoli, 2009) and can be organically produced. Heather colors were chosen, as they are closer to shades produced by natural dyes. A Bing™ search of ‘naturally dyed fabrics’ produces images of many different colors but the majority of colors are heather tones as opposed to vibrant, rich bold tones.

4.2 Choice Questions

Before the series of choice questions were presented in the survey, images of color swatches were shown to respondents in heather shades and bold shades and rated for liking. Photos of the conventionally cut shirts were also shown to respondents. Then, prior to choice questions, an introductory

explanation of fair trade principles was presented with a wait time of 25 seconds. Survey respondents were told:

*Fair Trade -- The objectives of Fair Trade organizations include decent working conditions and wages for labor and farmers in developing countries. Participating manufacturers and organizations can be third party certified to have met these standards.

The statement was meant to briefly remind or introduce participants to fair trade in a way that might be observed on a clothing label or on point of purchase signage. Similar information was not presented on organic production, thus the consumer answers the questions based on their own prior knowledge. The series of ten choice questions in the survey had respondents make a personal choice of what to buy based on the T-shirt attributes. Color, fair trade certification, organic certification and price were the four attributes on which respondents were provided information. A 'do not buy' option was available for each of the ten choice questions. The attribute combinations varied between choice questions. The attribute combinations were developed using an orthogonal fractional factorial design in SAS™ (Kuhfeld, 2009). Restrictions were imposed on the choice set in order to achieve efficiency and create a realistic shopping situation (ie, one where a conventional product is included). These restrictions include that fair trade and/or organic certification cannot be prices at

the lowest price of \$16.00 and the conventional alternative must be one of the two lowest prices of \$16.00 or \$20.00. The fair trade and/or organic certification choices could be prices at \$20.00, \$24.00, or \$28.00. The resulting design was efficient with ten total choice sets. Before the series of choice questions were presented in the survey, images of color swatches were shown to respondents in heather shades and bold shades. The color attribute for the T-shirt consumers were asked to buy was either open to all colors (ie, the bolds and the heathers) or limited to heather colors only. The T-shirt could have fair trade certification, organic certification, both, or neither. Four price levels were available, specifically \$28, \$24, \$20, and \$16, for assignment.

Due to the format of the choice questions, the number of observations in the final dataset increased. The survey was administered to 100 participants but the final dataset contains 5000 rows, since each respondent's choice question alternatives gave the respondent 50 observations. The ten choice questions were posed in the survey with five alternatives to choose between. Each of the five alternatives contained information on four attributes (color, fair trade certification, organic certification, and price). The 50 observations came from creating a dummy variable of *purchase* (where purchase=1 and no purchase=0) for each of the five alternatives. Therefore each of the ten choice questions was expanded to have five rows of data. This process is beneficial in that it provides

a greater number of observations for the dataset. Due to budget and time constraints for administering the survey the sample size is smaller than would be ideal.

Prior to analysis the attributes were effects coded. Fair trade certification was coded as 1, as was organic certification, and no certification was coded as 0. These variables are coded -1 for the ‘do not buy’ option. To examine color, *heather*, which was 1 if the attribute was for heathers only and 0 otherwise. This dummy variable was chosen for the analysis because the question of interest was, “how does limiting color affect the purchase of a T-shirt?” A heather variable was created which equals 1 if color was limited for heather and 0 when all colors were available, and again -1 for the do not buy option. Therefore *heather* will provide information on how WTP changes with a color limitation. Also, since conventional T-shirts have more color options than fair trade shirts, all colors should be the baseline. A *none* dummy variable was created for the ‘do not buy’ option in the choice questions. If the respondent chose not to buy the T-shirt given the alternatives in the choice question then *none*=1, whereas if the respondent chose to buy a T-shirt in the choice question then *none*=0. This follows from Gwin et al. (2012), which notes that such an arrangement allows for comparison against a baseline. In this case the baseline is conventional (ie, no fair trade or organic certification) T-shirt available in both

bold and heather colors. The variable *none* represents the utility of not selecting one the T-shirts.

To answer the questions stated in the objective, it must be uncovered how a consumer's characteristics affect his/her value of an attribute. Therefore, interaction variables between characteristics and T-shirt attributes are included in the analysis. Consumer demographic variables were also generated and interacted with the T-shirt attributes variables.

4.3 Color Preferences

Before the choice questions that are described in section 4.2 were posed, survey respondents were asked to rank overall liking of the color sets. Respondents were shown swatches of the bold colors and the heather colors and asked to state their liking of the colors on a scale ranging from 'dislike extremely' to 'like extremely' with a total of nine like/dislike options. Table 4.1 reports on the heather and bold likings for the 100 survey respondents.

Table 4.1: Heather and Bold Color Rankings

| | | Bold Liking | | | | | | | | | Sum |
|----------------|----------|-------------|----------|----------|----------|----------|----------|----------|----------|----------|------------|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | |
| Heather | 1 | . | . | . | . | . | . | . | . | . | 0 |
| | 2 | . | . | . | . | . | . | . | 1 | 1 | 2 |
| | 3 | 1 | . | . | 1 | . | . | . | . | . | 2 |
| | 4 | . | . | . | . | . | . | 1 | 3 | . | 4 |
| | 5 | . | . | . | . | 1 | . | 3 | 1 | 1 | 6 |

| | | | | | | | | | | | |
|----------|------------|---|---|---|---|---|----|----|----|----|-----|
| 6 | . | . | . | 1 | . | 2 | 4 | 5 | 3 | 15 | |
| 7 | . | 1 | 1 | . | 2 | 4 | 3 | 12 | . | 23 | |
| 8 | . | 1 | . | 5 | 3 | 8 | 8 | 11 | 4 | 40 | |
| 9 | . | . | 1 | . | 1 | 2 | 1 | 1 | 2 | 8 | |
| | Sum | 1 | 2 | 2 | 7 | 7 | 16 | 20 | 34 | 11 | 100 |

1= dislike extremely and 9=like extremely

A transformation of the liking variable here follows from Gwin et al. (2012) where a rating of 'like slightly' is transformed from a value of six to a value of zero, making the baseline consumer have a slight liking of the color set. This process is done for the bold and heather color set. The liking variables are continuous ranging from a 'dislike extremely' value of -5 to a 'like extremely' value of 3.

In order for the color liking variables to be incorporated into the model they were interacted with the heather color dummy variable. Therefore the bold liking variable interacted with the heather dummy variable reveals how much impact liking the bold color set has on purchase decision when the T-shirt option is limited to heather colors only. The heather liking variable interacted with the heather dummy variable reveals how much impact liking the heather color set has on purchase decision when the T-shirt option is limited to heather colors only. This adjusts the impact of only heather colors being available by whether they dislike or like the heather set.

4.4 Principal Component Analysis

A Principal Component Analysis (PCA) is conducted to develop variables, which can represent consumer attitudes in the choice analysis using a series of questions without losing degrees of freedom. While several different questions could be used directly as variables they would use up considerable degrees of freedom. On the other hand, when asking only one question to ascertain consumer attitudes the wording of the question or error in interpretation can provide misleading results. The PCA provides scores that are representatives of consumer attitudes. This general approach unveils the strength of consumer motivations (Durham, 2007; Gwin et al., 2012). Table 4.1 provides the scores for the attitudinal questions posed in this study's survey. The included questions are on a five point Likert scale of statements of trueness (ie, always true, often true, sometimes true, rarely true, never true) or agreement (ie, strongly agree, agree, neither agree nor disagree, disagree, strongly disagree).

Table 4.2: Rotated Factor Pattern

| Question | Factor 1 | Factor 2 | Factor 3 |
|--|-----------------|-----------------|-----------------|
| I have switched products for environmental reasons. | 0.82868 | 0.23472 | 0.13239 |
| I have convinced members of my family or friends not to buy some products. | 0.80635 | 0.21373 | 0.11917 |
| I have purchased products because they cause less pollution. | 0.72663 | 0.30467 | 0.04997 |

| | | | |
|---|---------|----------|---------|
| I will not buy a product if the company who sells it is ecologically irresponsible. | 0.71709 | 0.31520 | 0.21026 |
| I buy 'environmentally friendly' products, even if they are more expensive. | 0.62905 | 0.40536 | 0.12729 |
| I avoid foods containing nitrites or preservatives. | 0.59439 | 0.04581 | 0.51696 |
| I worry that there are harmful chemicals in my food. | 0.55179 | -0.05154 | 0.43249 |
| I'm concerned about working conditions for farm laborers in the U.S. | 0.32961 | 0.85622 | 0.08058 |
| I'm concerned about wages received by farm laborers in other countries. | 0.27288 | 0.83149 | 0.18537 |
| I regularly participate in outdoor activities. | 0.20340 | 0.05128 | 0.80928 |
| <u>My daily diet is nutritionally balanced.</u> | 0.00015 | 0.44021 | 0.72859 |

From Table 4.2 three factors are derived. Factor 1 concerns environmental attitudes, Factor 2 focuses on attitudes toward working conditions, and Factor 3 groups attitudes about health.

In order for proper variation within a group the factors were multiplied by attributes of fair trade certification and organic certification. The baseline consumer is one that lies at the mean of a given factor. Therefore, subtracting the average of each factor from that same factor interacted with the fair trade or organic certification attribute, provides a baseline for comparison.

4.5 More Baseline Assumptions

As discussed in section 4.2, the explanatory variables used in the model must have variance within the group labeled by the *id* variable. Therefore, in

order to incorporate demographic information, interactive consumer demographic variables must be created. It is best to begin by interacting the demographic variable (ie, age, income, education, and gender) with all of the attributes. If attributes are not found to interact significantly, the model can then be paired down. However, a baseline consumer needs to be incorporated.

The baseline consumer for the study is assumed to partake in conventional consumption practices. This conventional consumption is not limited to clothing purchases but extends to food purchases. Therefore the baseline consumer shops at conventional grocery stores, warehouse stores, and/or convenience stores. This is as opposed to consumers who regularly shop for food at natural food stores and co-ops. To create a baseline variable for the factors obtained from the PCA, the mean factor score of individuals shopping at conventional grocery stores was subtracted from the actual factor score.

To obtain consumer baseline demographics, statistics for Portland, Oregon are found via the United States Census Bureau. According to the most recent findings the average age for Portland citizens is 35.9 years old. Average household income is approximately \$69,000 and the population is 50.5% female. The random sample of participants taking this survey is older with a mean of 47.21 years and more heavily female populated at 71%. The mean income for

Portland is only slightly higher than the mean income from the sample, at \$64,200 (US Census Bureau, 2011a & 2011b).

For a better population representation of a baseline consumer, the US Census Bureau data was used as the baseline. Therefore, 35.9 was subtracted from the variable *age* and 6.9 was subtracted from *income* (since the variable *income* is reported in tens of thousands of dollars). Since the majority of the population is female, even if only by a slight amount, females became the baseline group so that a dummy variable of *male* was created represented as one for males and zero for females.

5. Results

5.1 Demographics and Model Variable Statistics

The average age of survey participants is around 47 years old. The youngest participant was 21 and the oldest was 79 years of age. Average income is approximately \$64,200. Males compose 29% of the sample. The majority of sample participants, 52%, hold a bachelors degree with 22% holding an advanced degree and 26% holding either a high school diploma or two-year degree. Table 5.1 provides variable summary statistics.

Income was reported as eight ranges for consumers to select between. The variable represents income in tens of thousands of dollars. Age is a continuous variable recorded accurately for each individual. Male and the education variables are dummy variables. Table 5.1 provides consumer variable statistics and demographic information for the sample.

Table 5.1 Model Variable and Demographic Information

| Consumer Characteristics Variable | Description | Population (Std. Dev.) → Mean after Adjustment for Mainstream Shopper |
|--|---|--|
| hthlk6 | Liking heathers (9 point scale) – 6 (like slightly) | 6.99 (1.52) → 0.99 |
| boldlk6 | Liking bolds (9 point scale) – 6 (like slightly) | 6.81 (1.74) → 0.81 |
| price | Prices for T-shirt, \$16,\$20,\$24,\$28;\$0 do not buy | 17.6 (9.60) |
| pk | Prior knowledge (-1=not at all informed, 0=somewhat informed, 1=very well informed) | 2.00 (0.53) → 0.00 |
| price_import | Importance of price in clothing purchase decisions (0=very important, 1=somewhat important) | 1.23 (0.42) → 0.23 |
| natural | Regular natural food store or food co-op shopper | 0.66 |
| age | Distribution of Age Range Selected by Individual | 47.21 (14.58) → 11.31 |
| | 18-24 25-29 30-34 35-39 40-45 45-49 | |
| | 4.0% 9.0% 11.0% 11.0% 8.0% 13.0% | |
| | 50-54 55-59 60-64 65-69 70+ | |
| | 10.0% 9.0% 13.0% 5.0% 7.0% | |

| | | | | |
|---|--|---------------------|--------|-------------|
| income in \$10,000 units | Distribution of Income Range Selected by Individual | 6.42 (3.39) → -0.48 | | |
| | <\$20,00 | \$20-\$29,999 | \$30- | \$40-49,999 |
| | 0 | | 39,999 | |
| | 5.0% | 11.0% | 12.0% | 17.0% |
| | \$50- | \$60-79,999 | \$80- | \$100,000+ |
| | 59,999 | | 99,999 | |
| | 8.0% | 15.0% | 14.0% | 18.0% |
| <hr/> | | | | |
| Factors (adjusted → to make factor value=0 for non-natural store shopper) | | | | |
| F1 | Environment | 0.00 (1) | → 0.44 | |
| F2 | Working Conditions | 0.00 (1) | → 0.29 | |
| F3 | Health | 0.00 (1) | → 0.22 | |
| <hr/> | | | | |
| Non-Model Demographic Sample Distribution | | | | |
| Male | Equals 1 if male | 0.29 | | |
| hs_or_two_yr | High school or two-year degree | 0.26 | | |
| bachelor_degree | Bachelors degree | 0.52 | | |
| advance_degree | Advanced degree | 0.22 | | |

* Variables are adjusted to equal 0 for the baseline consumer who is a mainstream (non-natural food store nor a food cooperative) shopper, age 35.9, income \$69,000.

The color liking variables for both heather and bold colors ranged from dislike extremely with a value of one to like extremely with a value of nine. The variables were adjusted by subtracting six. Therefore, a value of six, or like slightly, became zero. Therefore the liking variables measure when a consumer likes a color set at least slightly. Consumers were asked how well informed they considered themselves on the concept of fair trade on a three point scale. This prior knowledge variable was then adjusted so that the most frequently occurring answer of 'somewhat informed' became zero, 'not at all informed' became negative one and 'very well informed' became one. The mean was then centered at zero instead of two. Consumers were also asked on a three-point scale how important price is in clothing purchasing decisions. The majority, 77.0%, said price was 'very important' with the remaining sample finding price 'somewhat important.' Therefore the values were adjusted so that the majority's response became equal to zero and a response of 'somewhat important' became coded as one. Age was collected as a continuous variable with the average sample age being 47.21 years old. The age variable was then adjusted so that the average age of Portland, OR residents, which is 35.9 years old, becomes a value of zero. The income variable was coded in groups and it was found the average income of the sample was \$64,200. The average household income for Portland, OR is \$69,000 (US Census Bureau, 2011a &

2011b). The income variable was adjusted so that \$69,000 became a value of zero. In the data, income is coded in tens of thousands of dollars.

The sample used is a stratified sample, or a nonrandom sample where the population is divided into several non-overlapping, comprehensive layers, and then random samples are taken from within each layer (Wooldridge, 2009). The screener provided a nonrandom sample. Asking about grocery store shopping destinations provided the layers for the sample. To adjust the factors determined in the PCA the mean was taken for factors first when consumers do not shop at natural food stores or co-ops, then second when consumers are natural food or co-op shoppers.

The majority of Portland, OR residents are female, which is why a dummy variable was created for male so that a female respondent is coded as zero and a male is coded as one. Survey respondents were asked the level of education they posses. Education dummy variables were created for individuals holding a high school or two year degree, a bachelor's degree, or an advanced degree.

A baseline consumer was created from this data. The baseline consumer is one where the variables are at zero. Therefore the baseline consumer is: female, 39.5 years old, has a household income of \$69,000, holds a bachelor's degree, is somewhat informed on the concept of fair trade, and finds price very important when purchasing clothing.

5.2 Important Factors in Apparel Purchase Decisions

Consumers were asked on a 3-point scale how important price is when making apparel purchase decisions. No one reported that price was not important. Price is 'somewhat important' to 23.0% and 'very important' to 77.0%. Consumers were also asked to rank ten factors or characteristics important to consumers when making apparel purchase decisions. As shown from Table 5.2 it is seen that 45.0% of consumers rank style and fit as the most important factor when making apparel purchases. Price is most important to 20.0% of consumers. For 29.0% of people style and fit are the second most important factor. Color choice, price, and type of fiber are the second most important factor to 17.0% of people. Union made apparel is least important to 30.0% of people. A very high percent of people rank certified organic, fair trade certified, and union made apparel as the three least important apparel purchasing decision factors. Table 5.2 lists consumer ranking of clothing characteristics. Table 5.2 is organized by most important to least important means of the clothing characteristics.

Table 5.2: Consumer Ranked Importance of Clothing Characteristics

| | Scale of Importance | | | | | | | | | | |
|-------------------------------|---------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Mean |
| Style and Fit | 45.0% | 29.0% | 13.0% | 7.0% | 2.0% | 0.0% | 2.0% | 1.0% | 1.0% | 0.0% | 2.11 |
| Price | 20.0% | 17.0% | 26.0% | 19.0% | 10.0% | 5.0% | 3.0% | 0.0% | 0.0% | 0.0% | 3.09 |
| Type of Fiber | 14.0% | 17.0% | 12.0% | 22.0% | 12.0% | 14.0% | 6.0% | 3.0% | 0.0% | 0.0% | 3.82 |
| Color Choice | 4.0% | 17.0% | 25.0% | 20.0% | 16.0% | 5.0% | 5.0% | 5.0% | 2.0% | 1.0% | 4.06 |
| Quality/Name Brand | 14.0% | 9.0% | 10.0% | 6.0% | 15.0% | 18.0% | 9.0% | 4.0% | 1.0% | 14.0% | 5.13 |
| Easy to Find | 0.0% | 2.0% | 4.0% | 9.0% | 15.0% | 30.0% | 21.0% | 5.0% | 10.0% | 4.0% | 6.24 |
| Logos/Other Decoration | 1.0% | 4.0% | 5.0% | 10.0% | 14.0% | 13.0% | 14.0% | 11.0% | 9.0% | 19.0% | 6.69 |
| FT Certified | 0.0% | 2.0% | 1.0% | 2.0% | 4.0% | 9.0% | 18.0% | 28.0% | 23.0% | 13.0% | 7.76 |
| Certified Organic | 0.0% | 1.0% | 3.0% | 1.0% | 6.0% | 3.0% | 13.0% | 25.0% | 29.0% | 19.0% | 8.05 |
| Union Made | 2.0% | 2.0% | 1.0% | 4.0% | 6.0% | 3.0% | 9.0% | 18.0% | 25.0% | 30.0% | 8.05 |

(1= Most Important to 10= Least Important)

5.3 Knowledge and Beliefs of Organic and Fair Trade Apparel

Consumers were asked in the survey if they consider themselves well informed on the concept of fair trade. The majority of respondents, 72.0%, claimed they were ‘somewhat informed’ on the concept of fair trade. 14.0% reported that they were ‘very well informed’ and 14.0% reported to be ‘not informed at all’ on the concept of fair trade. Consumers were provided with two educational sentences regarding the concept of fair trade before the choice questions (this can be found in the appendix) and toward the end of the survey specific questions were asked to gauge consumer beliefs and knowledge regarding organic and fair trade apparel.

Table 5.3: Consumer Knowledge of Organic and Fair Trade Apparel

| | Percent |
|--|---------|
| Workers are safe producing organic cotton | 47.0% |
| Organic cotton production is environmentally safe | 63.0% |
| Organic cotton is sustainably produced | 56.0% |
| Organic processing protect the environment | 53.0% |
| FT workers have fair wages | 71.0% |
| FT workers have safe working conditions | 58.0% |
| FT production protects the environment | 41.0% |
| FT workers receive higher wages | 57.0% |

The questions asked consumers if they agreed or disagreed with statements regarding organic and fair trade operations. The statements were generated to be true in accordance with organic and fair trade principles and standards. The

highest percent in any category was 71.0% of respondents who believed fair trade workers received fair wages. Only 41.0% of survey participants believe fair trade production protects the environment.

Although, fair trade certification does not require organic production farmers do need to adhere to stricter environmental standards than when producing conventional crops. This results in almost half the US imports of fair trade certified goods to be organic. Fair trade certified products are not genetically modified. Fair trade certified goods have the potential to cost more than conventional goods due to logistical disadvantages of small operations verse large operations. However, in many cases, when holding quality constant fair trade certified goods are priced competitively with non-fair trade goods (“Frequently asked questions,” 2010). Many Americans seem more concerned with environmental issues over social issues, as discussed in section 1.8, but, as shown by the survey, many fail to realize that fair trade rules include environmental protection standards.

The WFTO’s tenth principle is that steps are taken to protect the environment. This study finds that the majority of consumers do not know that fair trade production has an environmental component. The WFTO requires members to “maximize the use of raw materials from sustainably managed sources in their ranges, buying locally when possible.” Members must “use

production technology that seek to reduce energy consumption and where possible use renewable energy technologies that minimize greenhouse gas emissions. They seek to minimize the impact of their waste stream on the environment.” Those producing fair trade agricultural commodities must use organic or low pesticide production methods. Packing materials are recycled or easily biodegradable and shipments are done via the sea whenever possible (“10 principles of fair trade,” 2011). The environmental aspect is of particular interest since organic goods are promoted and demanded in the US for environmental and health reasons. However, certified organic goods do not have requirements concerned with environmental degradation occurring in the packaging and shipping processes. Fair trade addresses environmentally friendly production and shipping methods, expanding the environmental component from organic production to include shipping. However, organic requirements are stricter than fair trade requirements as fair trade attempts to include more producers by recognizing that not all producers can use eco-friendly packaging materials but that a producer may still be given fair trade certification if all other requirements are upheld. This likely keeps incentives high so that membership in the organization stays up. This can provide a more positive societal impact since more fair trade production would occur than with stricter standards.

Table 5.4 reports the percentage of survey participants that agreed with the following standards regarding style and color for organic and fair trade clothing.

Table 5.4: Consumer Opinions of Clothing Attributes

| | Percent |
|--|---------|
| Limited colors for organic clothing | 35.0% |
| Limited styles for organic clothing | 28.0% |
| Limited colors for FT clothing | 14.0% |
| Limited styles for FT clothing | 25.0% |

The majority of participants do not appear to find style or color choice limiting for organic or fair trade clothing. Although this is surprising due to work such as Halepete et al. (2009), which found consumers wanted to have more color choice in fair trade apparel, it may be a result of better availability or lack of knowledge about fair trade goods. With online sales and marketing growing consumers may be exposed to a larger selection of goods even if they are not present at stores the consumer shops at on a regular basis. Also, the results could come from the Portland, OR sample preferring neutral colors, which are available for fair trade and organic apparel.

5.4 Preferred and Actual Purchase Decisions

Consumers were asked to provide information on what type of cotton clothing they *prefer* to buy and what type of cotton clothing they *actually* buy.

Consumers remark on concern of ethical products but often are not willing to pay for such goods (Cho & Krasser, 2011). This is why it is important to measure preferred as well as actual purchase decisions. No one selected they would not buy cotton clothing, although that was an option, because the screener to take the survey ensured that all survey participants do purchase cotton T-shirts.

Figure 5.1: Consumer Preferred vs. Actual Purchase Decisions of Cotton Clothing

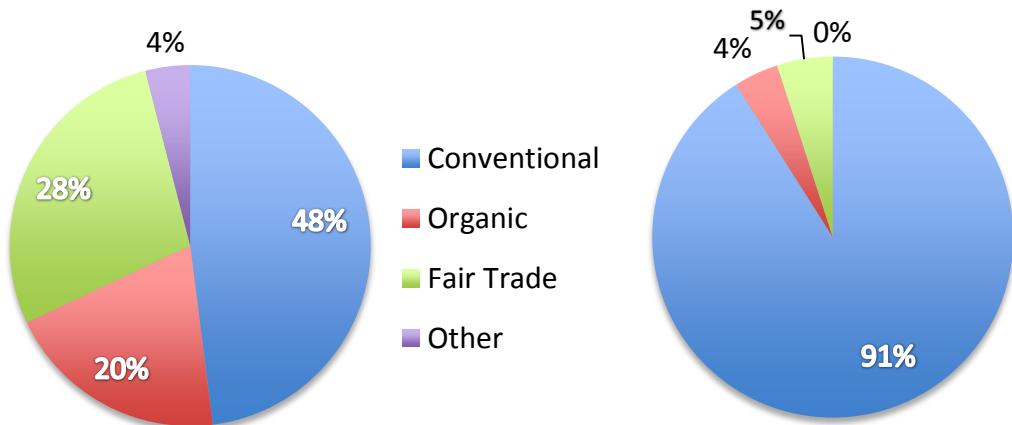


Figure 5.1 shows the difference in preferred (left) and actual (right) classifications of clothing purchases. While 91% of consumers actually buy conventional clothing although only 48% prefer to buy conventionally. Organic clothing is preferred by 20% but only 4% actually purchase it, and 28% of

individuals prefer fair trade clothing although only 5% actually purchase. The number of consumers who prefer to purchase fair trade or organic apparel is more than five times the number of consumers who actually purchase fair trade or organic apparel.

5.5 Conditional Logit Models

The key results in this study are contained in three conditional logit models. A baseline model examines only how the T-shirt attributes impact consumer choice between the T-shirts offered. Two expanded models contain interactive variables examining the impact of consumer characteristics on how individuals differ in their valuation of a T-shirt's attributes.

5.5.1 Base Model

Table 5.5 provides the estimates for the base model. The model is of the conditional logit form and is limited to the T-shirt attributes and the 'do not buy' dummy variable.

Table 5.5: Base Model

| Variable | Parameter Estimate | | Standard Error | Premium |
|------------|--------------------|-----|----------------|-----------|
| heather | -0.3641 | *** | 0.0855 | -1.48 *** |
| fair_trade | 0.9130 | *** | 0.1009 | 3.72 *** |
| organic | 0.4205 | *** | 0.1253 | 1.71 *** |
| price | -0.2456 | *** | 0.0185 | |
| none | -3.0241 | *** | 0.2341 | |

***Significant at the 1% level, **at the 5% level, *at 10% level
Log-likelihood=-1440.7047

From Table 5.5 it is seen that all variables are significant at the 1% level. The parameter estimates are provided, as is the premium. The premium provides the information of greatest interest in this case. It is calculated by dividing a given variable's parameter estimate by the parameter estimate on *price*. The premium reveals how much more the baseline consumer is willing to pay for the T-shirt given each attribute (Gwin et al., 2012). Table 5.5 reports that when color choices are limited to heather colors only, WTP decreases by about \$1.48 (p-value=0.0000). The premium consumers are WTP for a fair trade certified T-shirt is \$3.72 (p-value=0.0000) and a \$1.71 (p-value=0.0001) premium will be paid for organic certification.

The *heather* attribute is of key interest since it assesses the impact of a color limitation. It is important to understand how survey respondents liked the color sets. If most people dislike the color sets, the analysis may not produce significant results regarding color impact since many would likely choose not to buy the T-shirt. There is a variety of liking levels amongst respondents so there is not a problem with sample diversity. Diversity of color set preference in the survey sample will cause more information to be extracted on how limiting color choice impacts willingness to pay.

As reviewed in table 4.2, 97% of respondents like at least one of the color options a slight amount (6=like slightly). Of the 3% that did not like at least one color set, one respondent neither liked nor disliked either color option while the other two respondents showed stronger aversions to both color sets. One respondent moderately disliked the heather colors and slightly disliked the bold colors. This respondent had unexpected responses by still choosing to buy a T-shirt for each of the ten choice questions even though he/she ranked color choice as his/her second most important factor influencing clothing purchase decisions. This type of response is one of the reasons the *none* variable is not considered as reliable in the choice experiments, since it may represent a respondent's desire to make a selection (ie, to answer the question or not). The other respondent who did not care for the color choices moderately disliked the heathers and extremely disliked the bold colors. As expected the respondent almost always chose not to buy a T-shirt, with the one exception being the purchase of a conventional T-shirt with all colors available at the lowest price point. However, this option appeared in four of the ten choice questions and the respondent only selected to purchase that T-shirt once and this respondent ranked color choice as the most important factor in their apparel purchasing decisions. The inconsistency could be a result of the respondent accidentally selecting to purchase a shirt, or the instructions may have been misunderstood.

Overall liking of the two color sets vary, causing the *heather* dummy variable to be a strong representation of how limiting color effects consumer purchase preference.

5.5.2 Expanded Models

To learn more regarding what factors influence consumers' purchasing decisions additional variables are included in the model shown in Table 5.6. The attributes from the basic model are interacted with variables concerning consumer preferences and attitudes as well as demographic information.

Table 5.6: Expanded Model 1

| Variable | Parameter Estimate | Standard Error | Premium |
|------------------------------|--------------------|----------------|---------|
| heather | -0.5226 *** | 0.1337 | -2.03 |
| fair_trade | 0.9771 *** | 0.1652 | 3.80 |
| organic | 0.2455 | 0.2027 | 0.95 |
| price | -0.2574 *** | 0.0191 | |
| none | -3.6443 *** | 0.2831 | |
| Interactive variables | | | |
| hth*hthlk6 | 0.1838 *** | 0.0310 | 0.71 |
| hth*boldlk6 | -0.0868 *** | 0.0267 | -0.34 |
| hth*age | 0.0109 ** | 0.0051 | 0.04 |
| hth*income | -0.0132 | 0.0218 | -0.05 |
| hth*hs_or_two_yr | -0.1650 | 0.1720 | -0.64 |
| hth*advance_degree | -0.7736 *** | 0.1917 | -3.01 |
| hth*male | 0.2757 * | 0.1513 | 1.07 |
| ft*natural | -0.0047 | 0.1370 | -0.02 |
| ft*priorK | 0.3360 *** | 0.0891 | 1.31 |
| ft*age | -0.0085 * | 0.0049 | -0.03 |
| ft*income | -0.0120 | 0.0207 | -0.05 |
| ft*hs_or_two_yr | -0.2016 | 0.1676 | -0.78 |

| | | | |
|--------------------|------------|--------|-------|
| ft*advance_degree | 0.5385 *** | 0.1757 | 2.09 |
| ft*male | -0.1004 | 0.1449 | -0.39 |
| org*natural | 0.2766 * | 0.1587 | 1.07 |
| org*age | -0.0090 | 0.0062 | -0.04 |
| org*income | 0.0177 | 0.0269 | 0.07 |
| org*hs_or_two_yr | 0.0627 | 0.2167 | 0.24 |
| org*advance_degree | 0.2290 | 0.2195 | 0.89 |
| org*male | 0.1695 | 0.1824 | 0.66 |
| price*price_import | 0.0203 ** | 0.0093 | 0.08 |

***Significant at the 1% level, **at the 5% level, *at 10% level

Log-likelihood= -1371.3022

To test whether Expanded Model 1 and the Base Model are significantly different the chi-squared distribution is used in conjunction with the log-likelihood ratio test. The following formula is used to calculate the Likelihood ratio test between a restricted and unrestricted model,

$$\chi^2(df_{ur} - df_r) = 2(L_{ur} - L_r) \quad (5.1)$$

where χ^2 is the chi-squared distribution with degrees of freedom (df) equaling the difference in df between the models, L_{ur} is the log-likelihood from the unrestricted model, and L_r is the log-likelihood from the restricted model.

Therefore, using this process it is found,

$$\chi^2(22) = 138.805 \quad (5.2)$$

$$\Pr(\chi^2 > 138.805) \approx 0.000, \quad df = 22 \quad (5.3)$$

The low probability indicates a significant improvement from the Base Model to Expanded Model 1.

The premiums in the expanded model are calculated the same as the premiums in the basic model (ie, premium=parameter/price parameter). The premiums on the interactive variables reveal how the WTP value of each attribute (ie, color, fair trade certification, organic certification, and price) varies with the interacted consumer characteristics. As with the base model the expanded model provides premiums over what the baseline consumer are willing to pay (WTP) for a conventional T-shirt (Gwin et al., 2012).

From Table 5.6 it is seen that baseline consumers are WTP a \$3.80 (p-value=0.000) premium for a fair trade certified T-shirt and no significant premium for an organic certified T-shirt (p-value=0.226). When color choice is limited consumers' premium decreases by \$2.03 (p-value=0.000). To make the research tractable this study only allowed for bold or heather colors shades. All colors (ie, bolds and heathers) or only heathers were the possible color choices for a given T-shirt in the choice questions. The more a respondent likes the heather colors, the discount paid for a heather T-shirt decreases. Specifically, for each level beyond slightly liking a consumer is WTP \$0.71 (p-value=0.000) reducing the \$2.03 discount for a T-shirt limited to heather colors to \$2.74. This creates an offsetting effect where if a consumer responded extremely likes for the heather colors, represented by a value of 3, then it will not matter if a T-shirt is available in only heather colors ($\$0.71*3-\$2.03=\$0.10$). For each additional

level of liking bold colors, a consumer is WTP \$0.34 (p-value=0.001) less for a T-shirt only available in heather colors, so that if a consumer moderately likes the bold colors he/she will discount a shirt limited to heather colors only \$2.37. Each level of liking bold colors above slightly will further reduce the discount of a heather T-shirt by \$0.34. Being a natural food store or co-op shopper does not significantly impact the premium a consumer is WTP for a fair trade certified shirt (p-value=0.972). A natural food or co-op shopper is WTP an additional \$1.07 (p-value=0.081) premium for a certified organic shirt.

The purpose of including both natural food store and co-op shoppers in the survey is to uncover more information regarding consumer attitudes. The analysis must account for possible differences between this type of consumer and conventional consumers. Often shoppers that focus on these grocery stores are more likely to have health and environmental concerns. Therefore it is interesting and useful to gauge how consumer beliefs and attitudes impact purchasing decisions. However, the use of grocery shopping location as a proxy may not accurately or fully reveal consumers' attitudes and motivations. To look at attitudes and motivations factors generated from a principal component analysis can be used. As discussed in section 4.3 the principal component analysis is useful since it uses multiple questions to reveal consumer attitudes and therefore decreases misrepresentation of attitudes that can come from

misinterpreting or misunderstanding a single question. The principal component analysis provides three factors representing consumer attitudes as follows: Factor 1 groups environmental attitudes, Factor 2 groups attitudes toward working conditions, and Factor 3 groups attitudes about health. Therefore, the direct variable information on the natural food store and co-op shoppers is omitted from the next model and the factors are included. The factors are adjusted so that the factor means for consumers that do not shop at natural food stores or co-ops is set at zero. Table 5.7 provides these results.

Table 5.7: Expanded Model 2

| Variable | Parameter Estimate | Standard Error | Premium |
|------------------------------|--------------------|----------------|---------|
| heather | -0.5765 *** | 0.1358 | -2.21 |
| fair_trade | 0.7892 *** | 0.1526 | 3.03 |
| organic | -0.0086 | 0.1937 | -0.03 |
| price | -0.2606 *** | 0.0196 | |
| none | -4.0557 *** | 0.2924 | |
| Interactive variables | | | |
| hth*hthlk6 | 0.2239 *** | 0.0336 | 0.86 |
| hth*boldlk6 | -0.0534 * | 0.0292 | -0.21 |
| hth*age | 0.0112 ** | 0.0051 | 0.04 |
| hth*income | -0.0174 | 0.0219 | -0.07 |
| hth*hs_or_two_yr | -0.2070 | 0.1730 | -0.79 |
| hth*advance_degree | -0.8637 *** | 0.1946 | -3.31 |
| hth*male | 0.3066 ** | 0.1537 | 1.18 |
| ft*F1 | 0.2453 *** | 0.0756 | 0.94 |
| ft*F2 | 0.1762 *** | 0.0685 | 0.68 |
| ft*F3 | -0.0029 | 0.0690 | -0.01 |
| ft*priorK | -0.0767 | 0.1052 | -0.29 |
| ft*age | -0.0070 | 0.0052 | -0.03 |
| ft*income | -0.0055 | 0.0211 | -0.02 |

| | | | |
|--------------------|------------|--------|-------|
| ft*hs_or_two_yr | -0.2259 | 0.1721 | -0.87 |
| ft*advance_degree | 0.5059 *** | 0.1812 | 1.94 |
| ft*male | -0.0555 | 0.1507 | -0.21 |
| org*F1 | 0.5037 *** | 0.0867 | 1.93 |
| org*F2 | -0.0399 | 0.0769 | -0.15 |
| org*F3 | 0.2200 *** | 0.0824 | 0.84 |
| org*age | -0.0050 | 0.0066 | -0.02 |
| org*income | 0.0267 | 0.0276 | 0.10 |
| org*hs_or_two_yr | 0.2165 | 0.2243 | 0.83 |
| org*advance_degree | 0.0910 | 0.2281 | 0.35 |
| org*male | 0.2072 | 0.1925 | 0.80 |
| price*price_import | 0.0143 | 0.0099 | 0.05 |

***Significant at the 1% level, **at the 5% level, *at 10% level

Log-likelihood=-1297.8924

The chi-squared distribution in conjunction with the log-likelihood ratio test is used in this case as well to test whether Expanded Model 2 and the Base Model are significantly different. Using formula 5.1 it is found,

$$\chi^2(26) = 285.625 \quad (5.4)$$

$$\Pr(\chi^2 > 285.625) \approx 0.000, \quad df = 26 \quad (5.5)$$

The low probability indicates a significant difference in the Base Model and Expanded Model 2.

Table 5.7 provides a model very similar to that of Table 5.6 except for the replacement of the PCA factors instead of the natural food store and co-op shoppers. The premium a baseline consumer are WTP for a fair trade certified T-shirt is significant and found to be \$3.03 (p-value=0.000) and consumers will discount a T-shirt \$2.21 (p-value=0.000) when color choice is limited to heathers

only. There is no significant premium paid for a certified organic shirt (p-value=0.965).

Liking heather colors provides an additional \$0.86 (p-value=0.000) premium while liking bold colors additionally discounts a T-shirt \$0.21 (p-value=0.067). Therefore when a consumer extremely likes the heather colors they will offset the discount and be WTP a \$0.37 premium for the limited color option (\$0.86*3-\$2.21=\$0.37). For each year older than the average Portland, OR resident, 35.9 years of age, a consumer is WTP an additional \$0.04 (p-value=0.029) premium for a heather T-shirt and for each year younger than the average resident, a consumer will additionally discount a heather T-shirt \$0.04. Consumers holding an advanced degree inflict an estimated \$5.52 discount for a heather color limitation as opposed to individuals holding a bachelors degree who only inflict a \$2.21 discount for the color limitation. Males will only discount a T-shirt limited to heather colors \$1.03 (\$2.21-\$1.18=\$1.03) as opposed to females that will inflict the full \$2.21 discount for the limited color choice.

Considering the PCA factor interactions for fair trade it is seen that consumers concerned about the environment are WTP \$0.94 (p-value=0.001) more for a certified fair trade T-shirt for one standard deviation above the mean of Factor 1, when considering non-natural food store shoppers. Concern for

working conditions increases the premium for a fair trade shirt by \$0.68 (p-value=0.010). Having prior knowledge of the fair trade concept does not significantly impact the premium consumers are WTP for a fair trade T-shirt in this model. This may be due to the fact that Factor 2 is capturing the same information. Holding an advanced degree increases the price premium on a fair trade shirt by \$1.94 (p-value=0.005) so that an individual with an advanced degree is WTP \$4.97 for a fair trade T-shirt. It was unexpected to find that males are not WTP a significant additional discount (p-value=0.712) a fair trade T-shirt over their female counterparts, since Dickson (2001) found females were found to partake in more ethical consumption than men.

Exploring premiums paid for an organic certified T-shirt Table 5.7 reports that consumers one standard deviation higher on Factor 1 in concern for the environment are WTP a \$1.93 (p-value=0.000) premium for organic T-shirts. There is not a significant value (p-value=0.604) consumers are WTP when concerned about working conditions for an organic T-shirt. But consumers one standard deviation higher on Factor 3 in concern with personal health, are WTP a significantly higher premium of \$0.84 (p-value=0.008) towards an organic shirt. Demographic variables inducted no significant premium for an organic T-shirt in this model.

To gain insight into consumers' price sensitivity, consumers were asked how important price is when buying clothing and that variable is introduced with price in the expanded models. The price and importance of price interaction is positive, so that the price attribute is less negative for individuals that select 'somewhat important' over 'very important'. In Expanded Model 1 a significant positive parameter is found ($p\text{-value}=0.030$) while in Expanded Model 2 the parameter found is close to being significant at the 10% level ($p\text{-value}=0.150$).

The premiums from Expanded Model 2 are for a non-natural food and non-co-op shopper. To obtain the premium a natural food or co-op shopper are WTP a simple calculation must be done. The parameter estimate for each factor is multiplied by the mean of the respective factor for natural food or co-op shoppers. The three products from the factors are summed and added to the parameter estimate for either fair trade or organic. To obtain the premium this value is then multiplied by the price parameter multiplied through by a negative. The follow depicts the calculations:

$$\frac{\beta_{ft} * f1\mu_{f1} + \beta_{ft} * f2\mu_{f2} + \beta_{ft} * f3\mu_{f3} + \beta_{fair_trade}}{-\beta_{price}} \quad (5.6)$$

$$\frac{\beta_{org} * f1\mu_{f1} + \beta_{org} * f2\mu_{f2} + \beta_{org} * f3\mu_{f3} + \beta_{organic}}{-\beta_{price}} \quad (5.7)$$

Equations 5.6 and 5.7 provide the fair trade and organic premiums, respectively, for a natural food or co-op shopper. Using parameter estimates from Expanded Model 2, the premium calculated for fair trade from equation 5.6 is \$3.34, while the premium calculated for organic from equation 5.7 is \$0.48. These premiums differ from the conventional grocery shopper who are WTP a significant \$3.03 premium for a fair trade shirt and inflict a non-significant \$0.03 discount on organic T-shirts.

5.6 Goodness of Fit

The likelihood ratio (LR) test statistic has a chi-squared distribution with degrees of freedom equal to the number of restrictions imposed (Greene, 2012). A common use for the LR test is to test multiple restrictions in the logit and probit models. The LR test is easily applied in the case of this study since the restricted and unrestricted models are easy to estimate (Wooldridge, 2009). As discussed in 5.6 the LR test is based on the difference in the likelihood functions for the unrestricted and restricted models. The differences between the log-likelihoods will produce the log-likelihood ratio. Equation 5.1 is used to compute the log-likelihood ratio test. Table 5.8 provides a summary of the outcomes of these tests for each model.

Table 5.8 Log-likelihood Test

| Model | Log-likelihood | df | $2(L_{ur}-L_r)$ | $\text{Pr}[\chi^2 > 2(L_{ur}-L_r)]$ |
|-------------------------|----------------|----|-----------------|-------------------------------------|
| Base Model | -1440.7047 | | | |
| Expanded Model 1 | -1359.0042 | 22 | 138.805 | ≈ 0.0000 |
| Expanded Model 2 | -1291.4297 | 26 | 138.805 | ≈ 0.0000 |

The low probabilities reported in Table 5.8 show that there exist significant differences between the Base Model and Expanded Model 1 as well as Expanded Model 2.

Table 5.9 provides a summary of goodness of fit measures for the estimated models. The McFadden's R-squared as well as McFadden's adjusted R-squared are reported.

Table 5.9: Goodness of Fit Measures

| | McFadden's R-squared | McFadden's Adjusted R-squared |
|-------------------------|-------------------------|-------------------------------------|
| Base Model | 0.105 | 0.102 |
| Expanded Model 1 | 0.148 | 0.132 |
| Expanded Model 2 | 0.194 | 0.175 |

Examining Table 5.9 it is seen that going from the Base Model to Expanded Model 1 the goodness of fit becomes better. This is observed by looking at the two statistics: McFadden's R-squared and McFadden's Adjusted R-squared. Going from Expanded Model 1 to Expanded Model 2 it is seen that again the model becomes a better fit.

6. Conclusions

The following discussion will focus on findings from Expanded Model 2, because it provides the greatest amount of information regarding what factors impact consumers' willingness to pay for fair trade clothing, as determined by the goodness of fit statistics. Expanded Model 1 provides less information than Expanded Model 2 because the PCA factors contain more information on consumer attitudes than the natural food and co-op shopper variable does.

Recall that a baseline consumer is a female holding a bachelor's degree who is 35.9 years old with a household income of \$69,000. The baseline consumer in Expanded Model 2 is a neither a natural food or co-op shopper that is 'somewhat informed' on the concept of fair trade and classifies price as 'very important' in the decisions to purchase clothing. This baseline consumer was found to pay a premium of \$3.03 for a fair trade T-shirt over a conventional shirt. No significant premium or discount was found for a T-shirt that is certified organic by the baseline consumer. Limiting the available color options decreases the premium a consumer is WTP for a shirt by approximately \$2.21.

Greater concern about working conditions, found from Factor 2 in the PCA, would increase the fair trade premium. For each standard deviation of Factor 3 away from the mean of the convectional consumer an additional

premium/discount of \$0.68 occurs over the baseline. Individuals holding advanced degrees are WTP an additional \$1.94 premium for a fair trade T-shirt than individuals holding bachelor's degrees.

In addition to the \$2.21 discount consumers inflict on a T-shirt only available in heathers, as heather liking increases to extremely like, the discount from limiting heathers is essentially offset. The more an individual liked the bold color set, the greater discount he/she added to a shirt limited to heather, colors only. Specifically, as liking of the bold colors increases, the premium a consumer is WTP for a shirt in heather colors decreases by an additional \$0.21 over the \$2.21 discount already applied to color limited T-shirts.

A significant price premium was not found in Expanded Model 2 for the baseline consumer for an organic T-shirt. Due to the extent of information and products available that are organic it is somewhat surprising that no significant price premium was discovered. However, organic certification was found to rank quite low when considering what factors influence purchasing decisions. Using this logic though, it is surprising that the premium for a fair trade T-shirt is as large as reported, since fair trade certification was also ranked low as a factor impacting purchase decisions. However, there are potential issues in how the survey was presented. Due to widespread exposure to organic information, no information was provided on organic purchases before asking the choice

questions, nor was there a question regarding consumer prior knowledge of organic apparel. This survey design may therefore have contributed to the finding on organic apparel purchases. However, given consumers wide exposure to organic foods, it seems more likely that they simply rate the organic attribute lower for clothing, unless they have a higher level of environmental concern.

It is interesting to note that 28.0% of people prefer to buy fair trade apparel but only 14.0% of the sample reported to be 'very well informed' on the concept of fair trade. Lack of information and the limited availability could contribute to the low actual purchase to 5.0%. Providing more information and increasing availability to consumers may help to increase actual purchases of fair trade apparel as suggested by Scruggs et al. (2011) and Dickson (2000). The sample reported that 20.0% prefer to buy organic while 4.0% actually buy organic. It was surprising that organic had such a low purchasing percent because organic is often more readily available for consumers than fair trade apparel. Also Scruggs et al. (2011) found that green consumption was more prevalent than ethical consumption. The differing results could be due to the location where the survey took place.

This research will ideally be useful to manufacturers and marketers of fair trade apparel. Knowing the current premium for fair trade goods, and how limiting color impacts the price premium can help manufacturers determine if

the premium is feasible for them to operate under. Also, marketers can use information on what consumers think they know regarding fair trade production to determine what areas should be emphasized more to increase knowledge and hopefully awareness.

There are shortcomings with this study. First, the sample size is relatively small. Due to budget and time constraints this was necessary and although having each respondent answer several choice questions provided a large number of observations, it is a small sample. A geographically broader sample would provide stronger evidence and allow examination of the premium level across more demographic characteristics.

In particular all the respondents live in the Portland metro-region, and so the results may not be generalizable for other regions. The Portland metro-region is often considered to be ahead of many other areas in the U.S. when it comes to environmental and social reforms. Therefore the price an individual is willing to pay may be inflated as compared to other locations.

Self-reporting bias is also a potential issue in this study. Since the survey did allow for anonymity self-reporting bias should be minimized, as respondents will feel less pressure to answer a certain way in order to ‘look good.’ However, since there was no exchange of money, the price a consumer reported may not be accurate. When posed with a hypothetical situation it has been suggested

that consumers will provide hypothetical answers. Actual market transactions may differ, especially when an individual's budget constraint is applied. Lusk & Schroeder (2004) found that consumers stated WTP is greater than their actual WTP for a good, sometimes reaching 30.0% higher. However, consumers' marginal WTP for a good is generally equal in hypothetical and actual situations. Therefore, the premiums calculated in this study should closely resemble the actual premiums consumers are WTP for a given attribute of a T-shirt.

Extending the survey and varying the level of information respondents are given regarding fair trade would also be beneficial for determining how increased education effect fair trade selection. Specifically, it could be of use to discover what pieces of information on fair trade production could potentially increase fair trade sales.

Also further research into the premium needed for fair trade apparel production is necessary. Although consumers provide a WTP premium of \$3.03 to \$3.34 for a fair trade T-shirt (depending on if the consumer is a non-natural food and non-co-op shopper or does shop at these stores), this number alone will not suffice to determine whether fair trade apparel production is feasible. The premium required by producers to adhere to fair trade standards needs to be assessed on a product by product basis. Fair Trade USA requires brands to pay a 1.0-10.0% premium into a worker-controlled fund when purchasing fair

trade apparel and linens. Therefore a premium of at least 10.0% is likely necessary (*Fair Trade USA*, 2010a). The necessary premium for feasible production will likely depend on the quality level of goods produced. If it is true that holding quality constant, fair trade goods are competitively priced with conventional goods (*Fair Trade USA*, 2010b), then the premium uncovered in this study will likely suffice. There are several questions needing to be answered on the price premium essential for production, and therefore further research will be beneficial.

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APPENDIX

Question # 1

How many t-shirts do you **BUY** each year?

- Less than one a year
- 1-2 per year
- 3-4 per year
- 5-6 per year
- 7-8 per year
- 9-10 per year
- 10-12 per year
- 12 or more per year

Question # 2

What percentage of your clothing purchases are made online?

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

**Question # 3**

Could you tell us which of these organic or eco-labels you are **aware of**, or have **seen** on products for sale? Please select all that apply.

- Food Alliance
- Salmon Safe
- Fair Trade
- USDA Organic
- Oregon Tilth
- Low Input Viticulture and Enology
- An ecolabel that is not on this list
- I'm not aware of any

Question # 4

What is most important to you (1=most important,10=least important) when purchasing t-shirts?

| <u>Rank</u> | <u>Concept</u> |
|-------------|--|
| _____ | Quality and/or Name Brand |
| _____ | Type of Fiber(e.g., cotton, wool, polyester) |
| _____ | Certified Organic |
| _____ | Logos and other decoration |
| _____ | Price |
| _____ | Union made |
| _____ | Fair Trade Certified |
| _____ | Easy to Find |
| _____ | Style and Fit |
| _____ | Color choice |

Question # 5

Do you consider yourself well informed about the concept of Fair Trade?

- Very well informed
- Somewhat informed
- Not at all informed

On the first of the next two screens you will be asked what type of product you ***prefer to buy***-though you may not be able to. On the next screen you will be asked what you usually ***actually buy*** for the same products.

Question #6

Please specify what type you *most prefer to buy if available* for the following items.

Coffee

| Do Not Buy | Conventional | Organic | Fair Trade | Other Eco-Label |
|----------------------|----------------------|----------------------|----------------------|----------------------|
| <input type="text"/> |

Chocolate

| Do Not Buy | Conventional | Organic | Fair Trade | Other Eco-Label |
|----------------------|----------------------|----------------------|----------------------|----------------------|
| <input type="text"/> |

Fresh Fruits or Vegetables

| Do Not Buy | Conventional | Organic | Food Alliance | Other Eco-Label |
|----------------------|----------------------|----------------------|----------------------|----------------------|
| <input type="text"/> |

Cotton Clothing

| Do Not Buy | Conventional | Organic | Fair Trade | Other Eco-Label |
|----------------------|----------------------|----------------------|----------------------|----------------------|
| <input type="text"/> |

Seafood

| Do Not Buy | Wild | Farm-Raised | Farm-Raised Organic | Marine Stewardship Council | Other Eco-label |
|----------------------|----------------------|----------------------|----------------------|----------------------------|----------------------|
| <input type="text"/> | <input type="text"/> |

Question # 7

Please specify what type you *actually buy most often* for the following items.

Coffee

| Do Not Buy | Conventional | Organic | Fair Trade | Other Eco-Label |
|------------|--------------|---------|------------|-----------------|
| | | | | |

Chocolate

| Do Not Buy | Conventional | Organic | Fair Trade | Other Eco-Label |
|------------|--------------|---------|------------|-----------------|
| | | | | |

Fresh Fruits or Vegetables

| Do Not Buy | Conventional | Organic | Food Alliance | Other Eco-Label |
|------------|--------------|---------|---------------|-----------------|
| | | | | |

Cotton Clothing

| Do Not Buy | Conventional | Organic | Fair Trade | Other Eco-Label |
|------------|--------------|---------|------------|-----------------|
| | | | | |

Seafood

| Do Not Buy | Wild | Farm-Raised | Farm-Raised Organic | Marine Stewardship Council | Other Eco-label |
|------------|------|-------------|---------------------|----------------------------|-----------------|
| | | | | | |

Examine these colors, choose your favorite that you could consider buying from each group. In the next questions, you will rate your favorite from each group.

Bolds

Heathers



Question # 8

How much do you like or dislike your favorite of these colors? To see the colors again select 'Review Instructions'.

Favorite from the three colors on the right (Heathers).

| | | | | | | | | |
|--------------------------|-------------------------|---------------------------|---------------------|--------------------------------|------------------|------------------------|----------------------|-----------------------|
| dislike extrem ely | dislike very much | dislike modera tely | dislike slightly | neither like nor dislike | like slightly | like modera tely | like very much | like extrem ely |
|--------------------------|-------------------------|---------------------------|---------------------|--------------------------------|------------------|------------------------|----------------------|-----------------------|

Question # 9

Favorite from the three colors on the left (Bolds).

| | | | | | | | | |
|--------------------------|-------------------------|---------------------------|---------------------|--------------------------------|------------------|------------------------|----------------------|-----------------------|
| dislike extrem ely | dislike very much | dislike modera tely | dislike slightly | neither like nor dislike | like slightly | like modera tely | like very much | like extrem ely |
|--------------------------|-------------------------|---------------------------|---------------------|--------------------------------|------------------|------------------------|----------------------|-----------------------|

You will now answer several questions about choosing from a selection of t-shirts to purchase (or you can choose not to purchase any of the selections). ***It is important that you choose to purchase only if you are satisfied*** with the color and styles available and for which you find the price acceptable. ***Look at the colors and prices carefully they are changing as you work through the choices.*** You will also receive information if the product and material was certified as being produced and manufactured under the principles of ***Fair Trade**** and/or the cotton was certified as being organically produced.

****Fair Trade -- The objectives of Fair Trade organizations include decent working conditions and wages for labor and farmers in developing countries.***

Participating manufacturers and organizations can be third party certified to have met these standards.

Available shirt styles are depicted below. Assume fit and material (a medium weight cotton) is comparable. For each combination please indicate which you would buy.

Look at the colors and prices carefully they are changing as you work through the choices.

Color Options

Bold Shirt Color Options



Heather Shirt Color Options



Available Shirt Styles-All Styles Available



Base your decision on the price offered, color options and your preference for Fair Trade, organic, or conventional shirts. There are 5 choices offered in each set: Certified Fair Trade and Organic, Fair Trade Certified, Organic Certified, Conventional, Would not buy any of these.

Question # 10

Select the shirt you would most prefer to buy. Base your decision on the price, color options available, and your preference for Fair Trade, organic, or

conventional. To review colors and other information select the 'Display Instructions' button. Select 'Would not buy any of these selections' when color and price are not acceptable.

- All Colors Available Certified Fair Trade and Organic \$28
 - All Colors Available Certified Fair Trade \$24
 - Heather Colors Only Certified Organic \$20
 - Heather Colors Only \$16
 - Would not buy any of these selections

Question # 11

Select the shirt you would most prefer to buy. Base your decision on the price, color options available, and your preference for Fair Trade, organic, or conventional. To review colors and other information select the 'Display Instructions' button. Select 'Would not buy any of these selections' when color and price are not acceptable.

- All Colors Available Certified Fair Trade and Organic \$28
 - All Colors Available Certified Fair Trade \$20
 - Heather Colors Only Certified Organic \$24
 - Heather Colors Only \$16
 - Would not buy any of these selections

Question # 12

Select the shirt you would most prefer to buy. Base your decision on the price, color options available, and your preference for Fair Trade, organic, or conventional. To review colors and other information select the 'Display Instructions' button. Select 'Would not buy any of these selections' when color and price are not acceptable.

- All Colors Available Certified Fair Trade and Organic \$28
 - All Colors Available Certified Fair Trade \$20
 - Heather Colors Only Certified Organic \$24
 - Heather Colors Only \$16
 - Would not buy any of these selections

Question # 13

Select the shirt you would most prefer to buy. Base your decision on the price, color options available, and your preference for Fair Trade, organic, or conventional. To review colors and other information select the 'Display Instructions' button. Select 'Would not buy any of these selections' when color and price are not acceptable.

- Heather Colors Only Certified Fair Trade and Organic \$28
- Heather Colors Only Certified Fair Trade \$20
- All Colors Available Certified Organic \$24
- All Colors Available \$16
- Would not buy any of these selections

Question # 14

Select the shirt you would most prefer to buy. Base your decision on the price, color options available, and your preference for Fair Trade, organic, or conventional. To review colors and other information select the 'Display Instructions' button. Select 'Would not buy any of these selections' when color and price are not acceptable.

- Heather Colors Only Certified Fair Trade and Organic \$20
- All Colors Available Certified Fair Trade \$24
- All Colors Available Certified Organic \$28
- Heather Colors Only \$16
- Would not buy any of these selections

Question # 15

Select the shirt you would most prefer to buy. Base your decision on the price, color options available, and your preference for Fair Trade, organic, or conventional. To review colors and other information select the 'Display Instructions' button. Select 'Would not buy any of these selections' when color and price are not acceptable.

- All Colors Available Certified Fair Trade and Organic \$28
- Heather Colors Only Certified Fair Trade \$24
- Heather Colors Only Certified Organic \$20
- All Colors Available \$16

- Would not buy any of these selections

Question # 16

Select the shirt you would most prefer to buy. Base your decision on the price, color options available, and your preference for Fair Trade, organic, or conventional. To review colors and other information select the 'Display Instructions' button. Select 'Would not buy any of these selections' when color and price are not acceptable.

- | | | |
|---|----------------------------------|------|
| <input type="radio"/> Heather Colors Only | Certified Fair Trade and Organic | \$24 |
| <input type="radio"/> All Colors Available | Certified Fair Trade | \$28 |
| <input type="radio"/> All Colors Available | Certified Organic | \$20 |
| <input type="radio"/> Heather Colors Only | | \$16 |
| <input type="radio"/> Would not buy any of these selections | | |

Question # 17

Select the shirt you would most prefer to buy. Base your decision on the price, color options available, and your preference for Fair Trade, organic, or conventional. To review colors and other information select the 'Display Instructions' button. Select 'Would not buy any of these selections' when color and price are not acceptable.

- | | | |
|---|----------------------------------|------|
| <input type="radio"/> Heather Colors Only | Certified Fair Trade and Organic | \$20 |
| <input type="radio"/> Heather Colors Only | Certified Fair Trade | \$24 |
| <input type="radio"/> All Colors Available | Certified Organic | \$24 |
| <input type="radio"/> All Colors Available | | \$16 |
| <input type="radio"/> Would not buy any of these selections | | |

Question # 18

Select the shirt you would most prefer to buy. Base your decision on the price, color options available, and your preference for Fair Trade, organic, or conventional. To review colors and other information select the 'Display Instructions' button. Select 'Would not buy any of these selections' when color and price are not acceptable.

- | | | |
|---|----------------------------------|------|
| <input type="radio"/> Heather Colors Only | Certified Fair Trade and Organic | \$28 |
|---|----------------------------------|------|

- | | | |
|---|----------------------|------|
| <input type="radio"/> All Colors Available | Certified Fair Trade | \$20 |
| <input type="radio"/> Heather Colors Only | Certified Organic | \$24 |
| <input type="radio"/> All Colors Available | | \$16 |
| <input type="radio"/> Would not buy any of these selections | | |

Question # 29

Select the shirt you would most prefer to buy. Base your decision on the price, color options available, and your preference for Fair Trade, organic, or conventional. To review colors and other information select the 'Display Instructions' button. Select 'Would not buy any of these selections' when color and price are not acceptable.

- | | | |
|---|----------------------------------|------|
| <input type="radio"/> All Colors Available | Certified Fair Trade and Organic | \$28 |
| <input type="radio"/> Heather Colors Only | Certified Fair Trade | \$20 |
| <input type="radio"/> All Colors Available | Certified Organic | \$24 |
| <input type="radio"/> All Colors Available | | \$20 |
| <input type="radio"/> Would not buy any of these selections | | |

Question # 20

Where do you buy groceries for your household at least once a month? (Please mark all that apply.)

- Conventional Supermarkets & Grocery Stores (e.g. Fred Meyers, Safeway, Thriftway)
- Natural Foods Supermarkets & Grocery Stores (e.g. New Seasons, Whole Foods)
- A Food Co-op
- Warehouse retailer (e.g. Costco, Sam's Club, Wal-Mart)
- Direct Delivery
- Convenience Stores
- Community Supported Agriculture
- Farmers Market - can be once a month just in the summer
- Directly from Farms/ Farm Stands - can be once a month just in the summer

Question # 21

When buying clothing, how important is price?

- Very important
- Somewhat important
- Not important

Question # 22

I buy 'environmentally friendly' products, even if they are more expensive.

| | | | | |
|----------------------|----------------------|----------------------|----------------------|----------------------|
| Always true | Often true | Sometimes true | Rarely true | Never true |
| <input type="text"/> |

I have switched products for environmental reasons.

| | | | | |
|----------------------|----------------------|----------------------|----------------------|----------------------|
| Always true | Often true | Sometimes true | Rarely true | Never true |
| <input type="text"/> |

I have convinced members of my family or friends not to buy some products

| | | | | |
|----------------------|----------------------|----------------------|----------------------|----------------------|
| Always true | Often true | Sometimes true | Rarely true | Never true |
| <input type="text"/> |

I will not buy a product if the company who sells it is ecologically irresponsible.

| | | | | |
|----------------------|----------------------|----------------------|----------------------|----------------------|
| Always true | Often true | Sometimes true | Rarely true | Never true |
| <input type="text"/> |

I have purchased products because they cause less pollution.

| | | | | |
|----------------------|----------------------|----------------------|----------------------|----------------------|
| Always true | Often true | Sometimes true | Rarely true | Never true |
| <input type="text"/> |

Question # 23

I do not buy household products that harm the environment.

| Always true | Often true | Sometimes true | Rarely true | Never true |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> |

I avoid foods containing nitrites or preservatives.

| Always true | Often true | Sometimes true | Rarely true | Never true |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> |

I am interested in information about my health.

| Always true | Often true | Sometimes true | Rarely true | Never true |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> |

My daily diet is nutritionally balanced.

| Always true | Often true | Sometimes true | Rarely true | Never true |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> |

Question # 24

I try to exercise at least 30 minutes a day, 3 days a week.

| Always true | Often true | Sometimes true | Rarely true | Never true |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> |

I regularly participate in outdoor activities (walking, biking, etc).

| | | | | |
|----------------------|----------------------|----------------------|----------------------|----------------------|
| Always true | Often true | Sometimes true | Rarely true | Never true |
| <input type="text"/> |

It is the doctor's job to keep me well.

| | | | | |
|----------------------|----------------------|----------------------|----------------------|----------------------|
| Always true | Often true | Sometimes true | Rarely true | Never true |
| <input type="text"/> |

Good health takes active participation on my part.

| | | | | |
|----------------------|----------------------|----------------------------------|----------------------|----------------------|
| Strongly agree | Agree | Neither agree nor disagree | Disagree | Strongly disagree |
| <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |

Question # 25

I worry that there are harmful chemicals in my food.

| | | | | |
|----------------------|----------------------|----------------------------------|----------------------|----------------------|
| Strongly agree | Agree | Neither agree nor disagree | Disagree | Strongly disagree |
| <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |

I'm concerned about wages received by farm laborers in other countries.

| | | | | |
|----------------------|----------------------|----------------------------------|----------------------|----------------------|
| Strongly agree | Agree | Neither agree nor disagree | Disagree | Strongly disagree |
| <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |

I'm concerned about working conditions for farm laborers in the US.

| | | | | |
|----------------------|----------------------|----------------------------------|----------------------|----------------------|
| Strongly agree | Agree | Neither agree nor disagree | Disagree | Strongly disagree |
| <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |

International labor standards are complied with in foreign apparel production.

| | | | | |
|----------------------|----------------------|----------------------------|----------------------|----------------------|
| Strongly agree | Agree | Neither agree nor disagree | Disagree | Strongly disagree |
| <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |

Question # 26

Which of these statements do you believe are true for certified **Fair Trade clothing**?

(Please mark all you believe are true)

- Color options are limited for Fair Trade clothing
- Style options are limited for Fair Trade clothing
- Fair Trade workers have decent working conditions
- Fair Trade workers receive fair wages
- Fair Trade workers have safe working conditions
- Fair Trade principles protect the environment
- Wages are higher for fair trade workers than conventional workers

Question # 27

Which of these statements do you believe are true for certified **Organic clothing**?

(Please mark all you believe are true)

- Color options are limited for organic clothing
- Style options are limited for organic clothing
- Organic cotton is safer for the end garment user
- Workers are safer producing organic cotton
- Organic cotton production is safer for the environment
- Organic cotton is sustainably produced
- Organic processing protects the environment

Question # 28

What is your age group?

- 18-24 yrs
- 25-29 yrs
- 30-34 yrs

- 35-39 yrs
- 40-44 yrs
- 45-49 yrs
- 50-54 yrs
- 55-59 yrs
- 60-64 yrs
- 65-69 yrs
- 70+ yrs

Question # 29

What range does your total household income (before taxes are taken out) fall into?

- \$100,000/yr or more
- \$80,000-\$99,999/yr
- \$60,000-\$79,999/yr
- \$50,000-\$59,999/yr
- \$40,000-\$49,999/yr
- \$30,000-\$39,999/yr
- \$20,000-\$29,999/yr
- Less than \$20,000/yr

Question # 30

What is the highest level of formal education you have completed?

- High school
- 2 year college or technical degree
- 4 year college degree
- Advanced college degree (e.g. MS, MA, PhD, MD, JD)

THANK YOU!

Please collect your belongings and see the receptionist.

