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An Evaluation of Sustainability in Consumption: The Behaviors Behind Purchase, Care, and Disposal of Apparel

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AN EVALUATION OF SUSTAINABILITY IN CONSUMPTION: THE

BEHAVIORS BEHIND PURCHASE, CARE, AND DISPOSAL OF APPAREL

by

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AN EVALUATION OF SUSTAINABILITY IN CONSUMPTION: THE BEHAVIORS

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Fashion trend cycles have become increasingly fast-paced and unsustainable due to competition and consumer demand in the apparel sector. Despite having sustainable apparel choices available, consumers seem reluctant to adopt sustainable changes in their consumption habits due in part to the market allure of rapid turnover of goods, better known as 'Fast Fashion'. Paired with aggressive marketing campaigns that encourage increased consumption beyond need, the apparel industry keeps expanding at alarming rates around the world. Although it has been identified that consumers increasingly care about the unethical behaviors in the industry that negatively impact the environment, this feeling does not successfully translate into modified behavior of more sustainable consumption (McNeill & Moore, 2015). Clothing products remain important in today's consumer culture, but the sustainability of that consumption is lacking, as it often leads to excess waste. This study was conducted to identify consumer's behavioral habits of purchase, care, and disposal of apparel in order to advocate a more sustainable consumption that does not worsen the environment's quality.

A quantitative research method was used to study approximately 400 participants via an online survey. The purchase behaviors, sustainability considerations, and care and apparel disposal of the participants were examined to help determine their current habits,

based on the Theory of Planned Behavior. Attitudes, subjective norms, and perceived

behavioral control were examined as antecedents of intention with an extrinsic focus on

how these variables influence the behaviors of individuals when it pertains to how they

handle their clothing.

TABLE OF CONTENTS

Page

INTRODUCTION

Over the past decade, clothing has become less expensive for consumers, leading to increased consumption. Offshore manufacturing has allowed cheaper garments to be made in higher volumes, at the same time increasing competition among retailers. Currently, 97.7% of all garments sold in the US are made abroad, with the average garment costing $14.60. Within a ten-year span, post-consumer textile waste in the US increased 40% from 8.3 million tons in 1999 to 11.3 million tons in 2009, and the Council for Textile Recycling expects this number to increase further to 16.1 million tons by 2019. The reality of this situation is harrowing, especially when thinking of textile waste as unnecessary solid waste, which could instead be recycled in some way. But even though most fashion textiles are 100% recyclable, around 85% of them end up in landfills (Weber, Lynes, & Young, 2017).

Many of these pieces of clothing get thrown away because of mediocre quality and construction, because are infrequently worn, or simply because people clean out their closet to make room for new purchases. The emergence of fast fashion worsens this issue, as their garments are known for following fashion styles and giving priority to popular seasonal trends over the quality of materials that are used to manufacture the clothing. The result is poorly made garments that have a short lifespan and wear out after a few uses, which encourages consumers to continually buy new clothing and get rid of previous pieces. This is particularly true for younger consumers who are still finding their own personal style and may identify with a variety of influences featured in the industry, making them more susceptible to frequent fast fashion purchases (Lang, Armstrong, & Brannon, 2013).

Consumption can be classified into three stages: pre-purchase, purchase, and post-purchase. Sustainability consumption, in turn, is not only determined by the choices that take place while making a purchase, but include the activities in the post-purchase period, which involves using, reusing, recycling, and discarding clothing (Lang et al., 2013). The relationship between consumer motivation to purchase, the consumer satisfaction after a purchase, and consumer use patterns are all crucial in determining the likelihood of repurchase. This cycle varies greatly from consumer to consumer, so it is crucial to understand the relationship between behavioral patterns of use and their influence towards the frequency of new purchases (Choo, Sim, Lee, & Kim, 2014). Due to increasingly shorter product cycles, consumers are used to wearing their garments for a shorter period of time and buying new pieces more often.

Identical pieces of clothing can have very different end-uses depending on a consumer's personal clothing utilization and care patterns. Up to 82% of the energy consumption associated with a garment can be attributed to its post-purchase life, and more specifically, its laundering (Harris, Roby, & Dibb, 2016). Domestic laundry, a feature of the everyday life of millions of people carries a significant environmental burden resulting from the washing machine, fabric and detergent production and disposal, water use, distribution and discharge, and domestic energy use. The main concern regarding domestic laundry focuses on the exponential rise in energy used, which has been seen to increase in recent years. Changes in wash frequency, first, based on the number of total households available, and second because of the decreasing size of households means there are more people doing laundry and more loads per person being washed. The social context in which clothing and other items are used depend on how

often people change outfits, the habit of only wearing garments once or twice, and their washing routine patterns. Reducing the resource intensity that results from several of these habits is essential in order to decrease the environmental impacts that are associated with domestic laundry. Considering using low temperature washing along with decreased frequency in the loads of washing that are done per household would be a start in the right direction (Yates & Evans, 2016).

Extant literature has provided evidence that textile reuse and recycling can help reduce negative environmental impact, when compared to incineration and landfilling. While recycling can still carry an environmental burden and cannot replace products made from virgin fibers, increased textile reuse and recycling could potentially reduce some of the treatment processes that are a major source of toxic emissions. A potential technique used to reduce waste is the life cycle assessment (LCA) method, which helps highlight the potential benefits of reuse and recycling by identifying its areas of opportunity (Sandin & Peters, 2018). The LCA addresses the environmental aspects and potential environmental impacts of a product system throughout its life and allows for environmental analysis at the various stages of a product's life cycle. This analysis provides valuable information regarding strategic planning, priority setting, and designing, and is often used in the scope of environmental management. The LCA allows for the evaluation of the environmental impacts of industrial projects including any man-made environmental interventions at any manufacturing plant, along with any added environmental impacts of upstream and downstream processes involved in the whole production system, which is particularly useful for apparel (Rybaczewska-Blazejowska, & Palekhov, 2018).

The impact per garment used must be reduced between 30% and 100% by 2050 if the industry is to be considered sustainable. A combination of approaches that focus on prolonging the life of textile products must be employed to ensure this level of sustainability is achieved, as unfortunately most garments are disposed long before the end of their technical service life (Sandin & Peters, 2018). Generally, the condition of a garment will determine if it is trashed or recycled, with consumers being more likely to trash clothing that has been worn out or stained than pieces that remain in good condition (Sun & Trudel, 2017).

This study has two main purposes to accomplish. First, identify the current state of consumer awareness as it pertains to sustainability within the apparel industry. And second, obtain a realistic snapshot of the criteria consumers use when discarding versus recycling their unwanted garments. Additionally, the approachable steps consumers can take in order to become more sustainable and help reduce their harmful impact on the environment derived from this study will be presented in a white paper. Based on the literature presented, this study aims to understand the behavior of consumers towards sustainability regarding the purchase, care and disposal of apparel. The insights gained from this literature can go a long way in helping policy makers and marketing managers educate and persuade consumers as well as design products and packaging to increase recycling rates (Sun & Trudel, 2017).

Definition of Terms

The topics that will be discussed include the following terms, further explained below:

Sustainability: Is considered a universal methodology for evaluating whether human options will yield social and environmental vitality. It represents the development which meets the needs of the present, without compromising the ability of future generations to meet their own needs. It is considered a precautionary principle, which requires ecological preservation in cases of scientific uncertainty where irreversible damage is threatened (Basiago, 1995).

Fast Fashion: Is a term coined for clothing that has been produced in an accelerated rate, following trendiness and fashion over quality. It is often sold at very low and competitive prices, in order to be affordable to the masses, and encourage the purchase of multiple garments. The waste from these garments is not limited to their disposal, but also includes their unsustainable manufacturing and processing, as they do not have environmental considerations along their supply chain (Lang, et al., 2013).

Consumerism: Is a term that encompasses the behaviors of consumers in their desire to acquire more goods, in this case apparel. This behavior is encouraged in the fashion industry, along with multiple industries globally, accounting for a substantial percentage of the world's economy. The main priority of consumerism is to create the need for additional material possessions in order to keep boosting capitalism (Lang, et al., 2013).

Environmental Sustainability: Refers to the ability to maintain things or qualities that are valued in the physical environment (Paul, Modi, & Patel, 2015).

Life Cycle Assessment: This assessment helps investigate the individual stages of the life cycle of a product, in this case apparel. It facilitates the identification of issues or

areas of opportunity within the environmental sector, where the cycle of a garment can be improved by breaking down each step of its life. It is also practical as more than one product can benefit from the findings from this assessment (Sandin & Peters, 2018).

Textile Recycling (of Apparel): Textile recycling refers to the reprocessing of a textile into another textile, or into a non-textile item through a chemical or thermal process. This process usually will take place after the original textile has been worn and its original purpose is no longer of use (Sandin & Peters, 2018).

Fabric Recycling: Refers to the repurposing of a fabric into another fabric, through the disassembling of the original fibers (Sandin & Peters, 2018).

Sustainable Consumption: Refers to the use of goods and services that respond to basic needs and bring a better quality of life, while minimizing the use of natural resources, of toxic materials and emissions of waste and pollutants over the life-cycle, so as not to jeopardize the needs of future generations (Paul et al., 2015).

Statement of Problem

Among the several causes that have affected climate change and have created a damaging effect on the environment are population growth, economic development and industrialization that have led to an increased consumption in the demand for natural resources and have diminished the quality of the environment. As awareness increases among consumers, everyone must evaluate the impact consumption has on the environment and make adjustments to their lifestyles in order to pick up more sustainable choices as well as lower their levels of consumption by simply using less. This research is important because finding the consumer motivation behind adopting sustainable

behaviors and having a better understanding of the drivers behind these intentions is crucial to facilitate future research studies on this topic. Despite already existing literature that demonstrates consumer lack of sustainable awareness at the time of purchase, there is a gap in the literature regarding how they care and dispose of the clothing they already own. This study will build onto that notion to focus on the process of sorting, reusing, disposing and recycling of clothing (Rex, Lobo, & Leckie, 2015).

Many of the core behaviors that consumers display regarding apparel come from a variety of influences accrued throughout their lives. Marketing has been criticized as a contributing influence that promotes a culture of consumption, primarily focused on fueling excessive acquisition of goods past actual need. Consumption itself has become a central aspect of human life and society, with people considering it a way to help define themselves, and as an important leisure pass time activity. The role of marketing in society has been mostly negative and little progress has been made in moving toward sustainability as marketing constantly encourages excessive buying and a materialistic lifestyle, often associating consumption with positive values like happiness. This notion creates an urge to over-consume (Pereira Heath & Chatzidakis, 2012).

Green marketing arose as an alternative route for retailers, promoting the value of nature and focusing on ecological sustainability instead of economic efficiency, but this was not well received by corporations that consider profitability their main priority. Western developed economies rely on continuous economic growth and limited government intervention to continue thriving, dependent on the belief that technology had the potential to avert environmental destruction. Thus, the quest for sustainability presents a main challenge for corporations and its marketing teams, conflicted by the

need to increase their revenue and their social responsibility to the environment (Pereira Heath & Chatzidakis, 2012).

Sustainability requires more responsible behavior from consumers; consumption is the reason why anything gets produced, with production and consumption adding up to be two sides of the same coin. Much of the responsibility for environmental degradation lies within the consumer and their consumption and disposition patterns as it all contributes towards the current environmental conditions (Pereira Heath & Chatzidakis, 2012). A combination of interventions is needed to encourage sustainability and create awareness on some many easy-to-adopt practices that can reduce waste and extend the life cycle of garments, both at home and at the store level. Having retailers spread this message would potentially reach millions of consumers daily, and this, in turn, can also encourage more apparel companies to follow suit if successful among consumers. Finding common patterns and causality will help to better understand the current situation and offer approachable recommendations.

This study will follow a quantitative approach to examine the purchase behavior, sustainability considerations, and care and disposal of clothing among 400 participants that will record their responses in a questionnaire. The moderating variables will be the participant's attitude, subjective norms, and perceived behavioral control, while the participants' preferences and personal characteristics before the study will be considered an independent variable. The dependent variable will be the participant's willingness to adopt new sustainable practices and a pledge not to engage in wasteful behaviors.

REVIEW OF LITERATURE

Consumerism experienced in today's culture is dictated by material belongings instead of social issues like relationships or experiences; this gives an unspoken implication that life is not complete without these material things. The acquisition of clothing is currently predicated by needs other than warmth and protection, with the recreational activity of shopping becoming a crucial part in the everyday lives of millions of people (Armstrong, Kujala, Lang & Niinimaki, 2016). New styles of clothing are available to the average consumer every week, with some garments designed to be worn ten times or less. Young female consumers have little awareness of the social impact of their fashion consumption, with one in five female consumers admitting to purchasing a new garment every week (McNeill & Moore, 2015).

High levels of consumption in Western developed societies have been attributed as a major cause of the damage that exists in the natural environment. Pro-environmental behavior, like purchasing environmentally friendly products and recycling can help, but these measures will not be enough if people keep consuming at these current rates. The ongoing tendency to ignore addressing consumption reduction within mainstream marketing demonstrates how this topic is still uncomfortable among marketing's theory and practice. Consumers perceive environmental problems only from a supply perspective and show little knowledge between consumption patterns and environmental degradation. Focusing on issues like recycling and waste is not enough if consumption is ignored (Pereira Heath & Chatzidakis, 2012).

Fashion trend cycles have become increasingly fast-paced and unsustainable in order to keep up with demand and increase retailers' profit margins. Due to global

demand, other sectors of the industry have begun to offer unsustainable options in their

product lines as well, creating a snowball effect of consumption and pollution. Despite

having sustainable choices available, consumers seem reluctant to adopt sustainable

changes in their consumption due to the market allure of rapid turnover of goods

(McNeill & Moore, 2015). Any attempt to go green undoubtedly will have a restrictive

emphasis on the purchasing component of consumption, aiming to limit how much

consumers are spending and thus negatively impacting the apparel industry (Pereira

Heath & Chatzidakis, 2012).

Marketers looking to promote green products aim to focus on consumer

preferences and decision-making processes to create an effective appeal. These initiatives

have not been very successful, as marketers claim that consumer preferences in this area

fluctuate widely, making it hard for marketers to focus on one area to promote. This also

illustrates how priorities shift for consumers and it is hard to tackle how pertinent

information should be presented to them in an impactful way (Paul, et al., 2015).

Consumer adoptability of sustainable practices, attitudes, and purchase intentions of

green products should be investigated in depth. This study will focus on literature

regarding existing sustainable progress in apparel production, the way consumers behave

when it comes to choosing apparel, external marketing influences, the science behind

recycling, and optimistic approaches towards sustainability as the background upon

which the Theory of Planned Behavior will be evaluated.

Sustainability in Apparel Production

The concept of sustainable development and consumption is defined by the

United Nations as the use of services and related products, which respond to basic needs

and bring a better quality of life while maximizing the use of natural resources and toxic materials as well as the emissions of waste and pollutants over the life cycle of the service or product so as not to jeopardize the needs of further generations. It is now understood that while sustainability begins with production, a more critical aspect of achieving sustainability includes changing consumer consumption patterns. Promoting extended usage of products and reducing frequency of purchase is particularly difficult among fashion apparel, which is known to undergo frequent changes in trends and styles throughout each season (Cho, Gupta, & Kim, 2015).

A major pitfall associated with a culture of intense materialism, is the excessive clothing acquisition that takes place, leading to increased production of clothing and textiles. The clothing and textiles industry is responsible for nearly 10% of global greenhouse gas emissions, and 17–20% of global industrial water pollution is generated from textile dyeing and finishing processes alone. Each consumer in the USA discards approximately 32 kg of solid clothing and textile waste annually, and the volume of post-consumer waste increased by 40% between 1999 and 2009. Armstrong et al. argue that any developed nation that seeks economic growth at the expense of the environment, their society or their culture, will no longer render benefits from these profits. If the development of the economy is putting a strain on eco-systems and over-consuming scarce natural resources, then the consequences of this development are too expensive. Moreover, an economic system that has been set to have unlimited growth will be a problematic environment in which to develop sustainable practices (Armstrong et al, 2016). The cost to the planet is not just measured in the amount of waste that is disposed onto landfills but measured in the original resources that were used to create those

products. Any supplies and means spent creating textiles that end up in the garbage all contribute towards the total rubble that negatively affect the planet. The EPA estimated that diverting all of those trashed textiles into a recycling program would be the environmental equivalent of taking 7.3 million cars and their carbon dioxide emissions off the road (Alden, 2016).

Consumer Behavior Regarding Apparel

In recent decades, the per capita consumption of natural resources has been increasing at a much faster rate than human population, resulting in environmental consequences such a pollution, climate change, and loss of biodiversity. The problem is that consumption is primarily seen as 'good' from the perspective of progress, where 'more' is perceived as 'better' and increasing consumption is often attributed as the primary goal of national economic policy, implying a strong economy as a result of growing consumption among the country (Pereira Heath & Chatzidakis, 2012). The ever-changing retail industry has pushed the distribution channels available in the consumer market. Retailers around the globe are expanding from a single channel brick-and-mortar approach into multi-channel approach by linking their store operations with e-commerce. This expansion is making the shopping experience more convenient for consumers, as they can now shop from virtually anywhere, and it is also multiplying the number of choices available to them (Kim, Park, & Pookulangara, 2005).

Multi-channel retailing is gaining traction among retailers as it generates more sales and profits for them and it represents how the consumer of the future wants to shop, especially millennials. The issue remains that considerable forces come from multiple angles encouraging increased consumption, as profits remain their primary goal for many

corporations. Free shipping and returns, expedited shipping, and membership programs all contribute to increased consumption and encouragement from retailers to have consumers always engaged in buying new garments (Kim, et al., 2005).

Sustainability in the apparel industry is a very complex issue that cannot be generalized, as consumers are too diverse. When consumers shop for clothing, they are satisfying more than the need for apparel, which can be a source of confidence and a social tool. Research conducted by Harris et al. (2016) found that consumers possess a limited awareness of sustainability and the unsustainable impact of clothing consumption. Attempts to increase consumer understanding of some of the challenges for sustainable clothing revealed that focusing on sustainability alone will not create the necessary change in consumer behavior. Acknowledging that care and disposal of garments also has a big environmental factor is essential for consumers to understand (Harris et al, 2016).

Sustainable clothing has been described as 'clothing which incorporates one or more aspects of social and environmental sustainability', but sustainable development is not only focused on one goal. The implementation of the idea of sustainable development includes business activities that are socially responsible, ecologically friendly, and economically valuable. These three components, better known as the triple bottom line, are considered a difficult concept for many, because they expand the scope of responsibilities beyond just the economic aspect, to include social and environmental aspects as well. For consumers, this means supporting companies that practice the triple bottom line (Zak, 2015). As consumers' awareness grows regarding environmental problems caused by consumption, their concern has, in turn, shifted towards environmental preservation, with increased attention in their purchase decisions and

geared towards purchasing more environmentally friendly products. It is expected that consumer purchase decisions reflect the influence of this increased awareness of sustainable consumption. The encouragement of green product consumption hopes to promote products that will not pollute the earth or deplete it of natural resources, and that at the same time can be recycled or conserved in some way (Paul et al., 2015).

Innovative concepts similar to use-oriented product-service systems (PSS) provide an interesting approach to apparel sustainability, consisting of a product-service system that is use-oriented, instead of material-oriented. The system aims to reduce consumption through smarter purchasing on the part of the consumer, supported by also renting and swapping apparel. In addition, the concept of clothing consultancy allows consumers to learn how to wear pieces they already own in multiple ways, supporting a strategy for long-term use, as well as to save money and increase product satisfaction. Implementing systems such as PSS and clothing consultancy would help increase sustainability awareness as it educates consumers as they shop, especially when backed by the credibility of the retailer promoting it. For example, incorporating eco-friendly literature to the tags of each garment, can help the consumer learn about the materials that were used to create that garment. It can also offer styling tips and care instructions to prolong the life of that garment and suggest alternatives for the use of that fabric after it can no longer be worn. Getting the consumer to expand its thinking past the common 'buy-wear-discard' approach can help reduce the incentive that is tied to the emotional satisfaction shopping and impulse buys. The positive evaluations of use-oriented PSS include the ability to reduce excess consumption by becoming more knowledgeable about

personal style and fit, and by enhancing creativity with items already owned versus constantly buying new things (Armstrong et al., 2015).

In addition, it is expected that innovative or fashion forward consumers will try to differentiate themselves by shopping more frequently and spending more in their purchases than the average consumer. Innovative consumers tend to buy more unique products and brands, rather than always shopping the same styles. In this case, the use of each garment will be extended for consumers with high fashion involvement if it is considered to be an investment and has an added sentimental value from its owner. According to Choo et al. (2015), consumers that are more prone to innovativeness are also more likely to find added uses for their already existing wardrobe. Changing the ways in which older pieces can be matched or styling them in different ways allows consumers multiple applications per garment (Choo et al., 2015).

While prolonging the use of an article of clothing will delay its disposal fate, it is more important to permanently reduce the needless waste of clothing through better management of purchases and clothing utilization (Choo et al., 2015). More so, given the importance of identity construction among many consumers, motivations to be 'fashionable' often outweigh motivations to be ethical or sustainable. This paradox highlights the contradiction that is seen through the desire to consume, against efforts to limit consumption. It is also believed that the discern between belief and behavior is a result of other factors playing a more important role in determining purchase behavior, including price, value, trends and brand image (McNeill & Moore, 2015). All these factors are important to clothing consumption and are key topics to evaluate when considering approachable steps towards more sustainable consumer behaviors.

Armstrong et al. (2015) argue that "today's culture is marked by a type of abundance that is materially rather than socially oriented". This statement alludes to the perception that the things that really matter in life are not material possessions, but relationships and experiences. The act of shopping has become a recreational activity that in some cases may even replace other social interactions, resulting in greater discontent and unhappiness among consumers in the long run (Armstrong et al., 2015). For consumers shopping primarily to satisfy a true need, their behavior will be rational and effective, looking for an item to solve a specific purpose. Namely, when the shopping need is related to a utilitarian benefit, the consumer will focus on the functional features of a product. On the other hand, consumers filling hedonic needs will aim to satisfy pleasure. This includes the entire shopping experience that encompasses the trip to a shopping mall and impulse purchases that affect the decision-making process at the time of purchase (Bakirtas, Bakirtas, & Cetin, 2015).

The Science Behind Recycling

The fashion industry creates one billion accessories and garments every year, contributing $3 trillion to our global economy, all the while consuming vast amounts of water, cotton, and energy. What is worse, three-fifths of those items end up in the trash within a year after they were purchased, instead of being repurposed (Hirtenstein & Wei, 2018). There are several ways in which textiles can be reused and recycled, reducing the amount of waste that is sent to landfills and incinerators, conserving natural resources, preventing pollution, and saving energy. Current recycling rates can be improved by including: 1) better infrastructure between textile producers and recyclers, 2) adding curbside collection programs for consumers, 3) increasing end-use markets of waste

recyclables, and 4) educating consumers on the advancements they can be making to be sustainable (Laitala, 2014).

Recycling textiles reduces not only the volume in landfills but also the use of material resources like water, fibers, and chemical dyestuffs. However, the main challenge that exists when attempting to recycle textiles, is the insufficient recovery of apparel waste. Consumers lack the necessary knowledge and the disposition to dispose of their apparel correctly in order to allow those textiles to be properly recycled (Joung & Park-Poaps, 2013). There are two scenarios for disposal, the first, is when the product has failed, and it is no longer usable. This is the case for garments that have extreme wear, or that have been replaced by an improved version. The second is for products that are still functional, but that have been discarded for other reasons. For example, new fashions, changes in personal style, or the act of shopping may lead a person to dispose of their still functional clothing in order to make room for new pieces (Laitala, 2014).

Functional clothing has a higher chance of being repurposed or recycled, especially when it is made of good quality materials. The opposite can be said of low-price low-quality garments which are difficult to recycle and do not yield a good end-product. Cheap garments are not of high enough quality to be recycled and its collection costs typically exceed any potential revenue that could be generated through their recycling. Few companies participate in this process as it is, primarily due to the high costs associated with reverse transportation and recycled fiber production (Joung & Park-Poaps, 2013). Textile recycling refers to the reprocessing of pre- or post-consumer textile waste for use in new textile or non-textile products. Textile recycling routes can be classified as being mechanical, chemical, or thermal, or a mix of these. In fabric

recycling, the fabric of a product is recovered and reused in new products. In fiber

recycling, the fabric is dissembled but the original fibers are preserved to be used for a

new purpose. Textile reuse, on the other hand, refers to the various ways of prolonging

the life of textile products by transferring them to new owners, with or without

modifications. This can be done through renting, trading swapping, borrowing, and

inheriting which can be facilitated by second-hand shops, flea markets, garage sales,

online market places, and charities. Figure 1 illustrates the most common reuse and

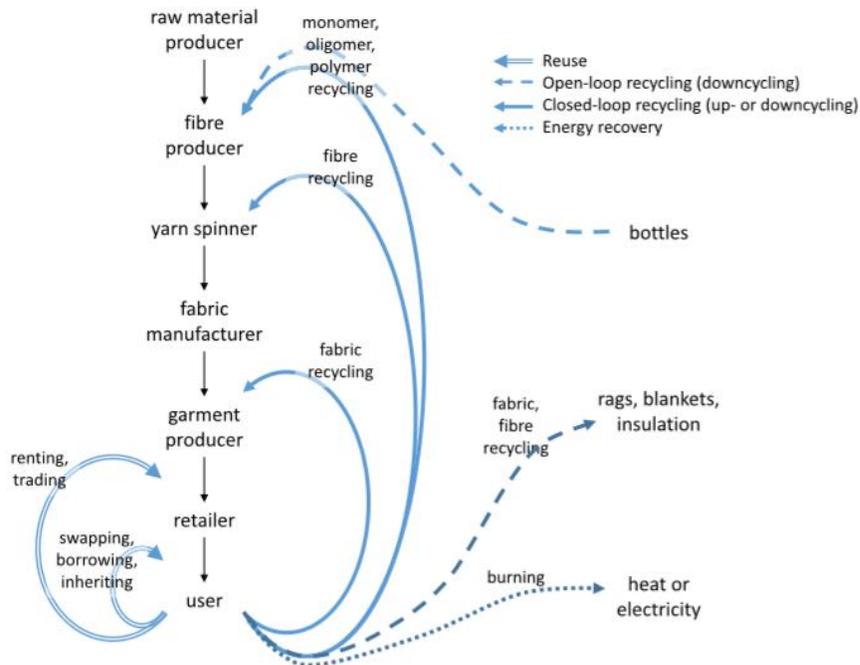recycle routes (Sandin & Peters, 2018).

Figure 1. Reuse and recycle routes (Sandin & Peters, 2018)

Recycling programs across the nation have experienced higher participation from

consumers when these were more convenient and accessible to them, which was

indicated by a higher level of participation. A national survey on recycling coordinators

reported that communities with a curbside collection program for recyclable solid waste had a 24% higher participation rate that communities with only a drop-off site. This increased participation is due in part to the convenience that allows consumers to spend less time recycling yet achieves the same results. This is also supported by a survey of Goodwill Industries which found that people would not go more than ten minutes out of their way to make a drop-off donation of clothing. Moreover, any familiarity with the recycling process further encouraged consumers to take part of it more consistently, especially when the program information was readily available and consumers were well informed of it (Joung & Park-Poaps, 2013).

A commonly used recycling method is downcycling, where the recycled material is of lower quality than the original product. In the case of clothing and home blankets, such products can be downcycled into industrial rags, low-grade blankets, insulation materials, and upholstery (Sandin & Peters, 2018). The greatest energy and CO2 equivalent savings are achieved through longer lifespans and direct reuse, followed by reuse through organizations, material recycling and finally energy recovery, which are all better solutions than landfilling. Figure 2 illustrates a waste hierarchy diagram ranking the best solutions in order of environmental preference (Laitala, 2014).
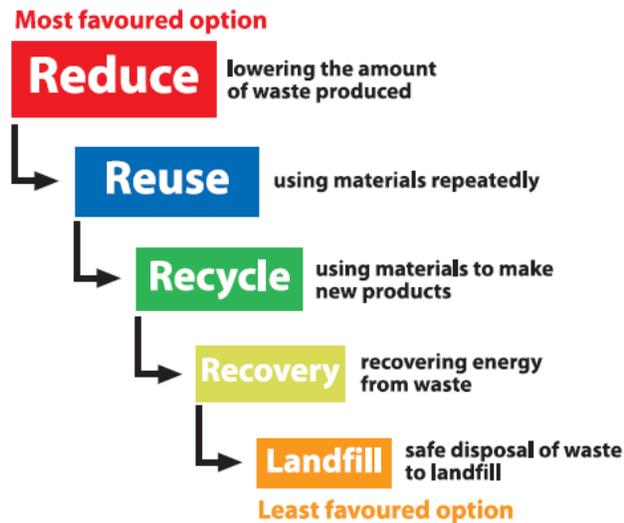
Figure 2. Waste Hierarchy Diagram (Waste Aware Business, 2009).

Up until last year, fabric scraps from new garments that accumulated during

manufacturing in a Zara factory were repurposed into stuffing for furniture or sent to

landfills. Today, they are being chemically reduced to cellulose, mixed with wood fibers

and spun into a textile called Refibra. Inditex SA, the company that owns Zara along

seven other brands, is using Refibra to create new T-shirts, bottoms, and tops. One of the

biggest challenges present is how to improve clothing manufacturing by reducing the

impact on the environment. The shift towards waste-free models must be accelerated if

we are to start seeing improvements in a bigger scale (Hirtenstein & Wei, 2018).

Government involvement in the past has involved negative sanctions or positive

efforts to encourage desired behavior among their citizens. As an example of a positive

effort, a government may offer monetary incentives to foster proper waste disposal, or

they may discourage littering by providing easily accessible trash cans in parks or other

public places. Correspondingly, municipalities can encourage household recycling by

implementing small changes that make the task for the householder require less time,

space, and effort. Expanding curbside pickups allows households to recycle at the edge of

their property instead of traveling recycling centers, which makes it more convenient for

them. The success of having implemented single-stream recycling of paper, glass, plastic

and cans, where all of these materials can be recycled together without the need to sort

through them individually has been a great step forward in the implementation of

recycling initiatives for thousands of households across the United States (Bell, Huber &

Viscusi, 2017).

Promising Approaches Towards Sustainability

During these competitive times, big retailers have found that it is possible to boost

profits and embrace sustainability at the same time. Outerwear and sport-related apparel

retailer Patagonia has been setting a great example of this for over a decade through its

Common Threads Initiative, which is a partnership with its customers to consume less.

Through this initiative, the company asks its customers to pledge to buy and use clothing

more sustainably and focus on the four Rs: to reduce consumption, repair, resale via

eBay, and recycle. Patagonia addresses one of the main culprits of environmental harm in

the apparel industry which is the huge footprint that is left through the manufacturing and

produced waste related to the apparel industry. The company itself is committed to

manufacturing long-lasting products that are easy to repair in order to help make this

initiative more successful and asks that their customers take a formal pledge and be

partners in the effort to reduce consumption and keep products out of the landfill or the

incinerator (Patagonia, 2011).

The Common Threads initiative primarily asks consumers not to buy something

they don't need, a simple step that can go a long way in the consumption habits of

consumers. If they do need it, it is recommended that they buy good quality products that will last a long time and remain in wearable condition. If anything breaks, it should be repaired and mended when possible in order to extend its life. If it is no longer wanted, it should be donated or sold to someone else. And finally, if it's truly worn out it should be recycled to try to recover its remains to be repurposed into something else. Patagonia partnered up with eBay to have a marketplace of offering available to its members that are looking to sell or buy used Patagonia apparel, making it easy and convenient for them to trade pieces (Patagonia, 2011).

English retailer Marks & Spencer (M&S) demonstrated its commitment to the environment with a comprehensive and successful money-and-planet saving strategy called 'Plan A', which made the company the first carbon neutral retailer in the United Kingdom (Nilufer, 2014). Extensive customer research revealed that green issues were important to M&S customers, so the company devised a list of commitments built around five main pillars: climate change, waste, natural resources, fair partnership, and health and wellbeing. The company has been actively working with its customers and suppliers to reduce waste, trade ethically, use sustainable raw materials, and combat climate change. In each store, M&S set up a clothing donation station called 'Shwopping' where they encouraged customers to donate an item of clothing for each new one they purchased. Additionally, all of their employees were trained in energy efficiency and had supplemental literature (signs and flyers) available around the store to help support this initiative. The strategy was extremely successful, and it is now a fundamental portion of the company's culture (Nilufer, 2014).

By comparison, Swedish international retailer H&M has tried to differentiate itself from competing fast-fashion retailers and lead the charge for sustainability in fashion. By 2020, all the cotton that H&M uses will come from sustainable sources, by 2030, all the product that H&M makes will come from sustainable or recycled sources, and by 2040, H&M will be climate positive across its entire value chain. Today, 96% of the company's circular business model is powered by renewable energy (Samaha, 2018). H&M currently has a Conscious Exclusive Collection, a line that uses TENCEL, a recycled polyester and organic linen, recycled silver, and ECONYL, a 100% regenerated fiber from fishnets and other nylon waste. This line features premium pieces that showcase the increasing possibilities of sustainable fashion with a focus on development and innovation (H&M Conscious Exclusive, 2018). As the company moves in the right direction with this collection, its consumer base shows an increasing interest in sustainability and is willing to pay a higher price for premium pieces that abide by transparency and traceability in its materials and its supply chain (Newbold, 2018).

Additionally, H&M recently launched their Take Care concept in France and Germany, a combination of products, guidance, and services encouraging and inspiring customers to care for and prolong the life of their fashion (Newbold, 2018). Their Paris Flagship location includes a space that enables consumers to repair their clothes, customize them or buy specific car products to prolong their life. It has sewing machines, patches and embroideries that are available for customer use, along with recycling bins for convenient discarding of old clothing (H&M Take Steps, 2018). The Take Care initiative also has an online presence that provides clothing care advice and information, like how to remove stains or reattach buttons. The store also hosted free workshops by

partnering with local influencers to raise awareness of this initiative. H&M plans to roll out this initiative to other regions if it is successful (Dover, 2018).

Throughout the United States, recycling contests have been organized in some cities throughout the United States, and prizes have been awarded to the communities and organizations that recycle the most. Findings suggest that the positive emotions associated with recycling can overpower the negative emotions associated with wastefulness. Sun & Trudel (2017) shed light on the need for future studies investigating factors that influence waste reducing, reusing, and recycling among the population, with the objective of developing actionable insights for policy makers. It is important to dig deeper into the psychology behind why consumers may choose to trash clothing versus recycling it to better understand how to curve the waste rates that currently exist. Government involvement would be a step in the right direction, by supporting these initiatives with laws that encourage both citizens and organizations to be more sustainable (Sun & Trudel, 2017).

Within the United States, cities need to start thinking in terms of practical solutions that can help curve waste impacts. The Department of Sanitation's Re-FashioNYC program in New York City, for example, provides large collection bins to buildings with ten or more units. Housing Works (a New York–based nonprofit that operates used-clothing stores to fund AIDS and homelessness programs) receives the goods and pays Re-FashioNYC for each ton collected. Since it launched in 2011, the program has diverted 6.4 million pounds of textiles from landfills, and Housing Works has opened up several new secondhand clothing sales locations. But that's just 0.3 percent of the 200,000 tons of textiles going to the dump every year from the city. Only

690 buildings out of the estimated 35,000 qualified buildings in the city participated in this program as of 2016 (Alden, 2016).

THEORETICAL FRAMEWORK

The Theory of Planned Behavior (TPB) was first proposed by Icek Ajzen in 1985, as a general model aimed at predicting and explaining human behavior. The TPB has its foundation in Theory of Reasoned Action (TRA), which is based on two general premises. The first states that individuals act rationally and, therefore, use and process available information before acting. Once this intention has been established, the individual is expected to behave accordingly. The second premise states that intentions are determined by attitude toward the specific behavior and subjective norms (Do Valle, et al., 2005). This theory is one of the most frequently used models due to its universality in predicting behavior. As the Theory of Planned Behavior concerns the human behavioral decision-making process and the motives behind these related behaviors, we will consider its three conceptual constructs individually as predictors of intention: attitude, conceptual norm, and perceived behavioral control (Chung, 2016).

The Theory of Planned Behavior allows the influence examination of personal determinants and social surroundings as well as non-volitional determinants on intention. TPB helps identify the purchase intention model's predictability for green products, implying that creating a shared sense of responsibility for the environment among consumers can incentivize them to purchase green products. The model optimizes the potential relationship between intention and its determinants by measuring each construct at equivalent levels of specificity (Paul et al., 2015). Understanding why people make the choices they do, and which internal and external factors influence their choices is crucial

to determine the likelihood in which these can lead to behavior change. The TPB deals with the information processing of individuals when behavior is guided by rational decisions, and more specifically, when a behavior is voluntary. This theory is useful in encouraging consumers to change their consumption habits and adopt a more sustainable lifestyle that supports environmental responsibility, based on the information, motivations, and knowledge they have (Rex, Lobo, & Leckie, 2015).

The central dependent variable of TPB is consumer intention which is an indication of a person's readiness to behave in a certain way. While intention is widely accepted as the best available predictor of behavior, there is a clear action gap that exists between intentions and behavior. The most common factors associated with this gap are weak confidence in sustainable products and the higher price they usually cost (Liobikiene, et. al, 2016). This behavioral theory works towards encouraging consumers to change their consumption habits and adopting a more sustainable lifestyle instead. Analyzing the sustainable behavioral intentions consumer's may exhibit in their daily life activities has been crucial, for both business and community sustainability data. It has been important to also note that the original theory did not consider the societal centered population that exists today, and thus must now consider this strong influence across the three conceptual constructs of the TPB. The growth of social media has greatly influenced how consumers receive and process new information, often swayed through the influence of others throughout that platform (Rex et. al, 2015).

This study will examine the applicability of the TPB in understanding and predicting apparel reuse and recycling intentions among consumers. Behavioral intention will act as a mediator of three distal constructs' effects on actual performance: attitudes

toward the act, perceived normative pressure, and perceived behavioral control. Figure 3

illustrates the framework of this theory (Shu, Chan, & Wong, 1999).
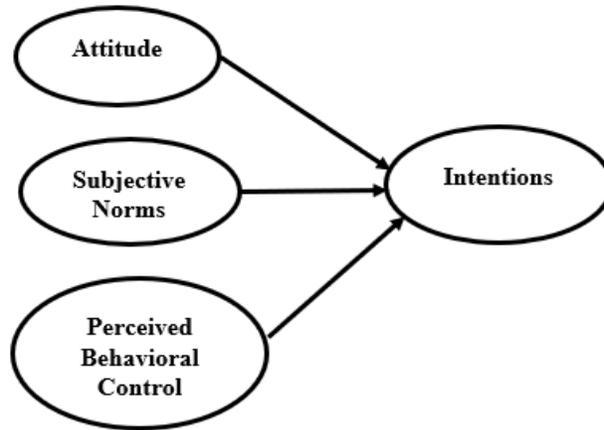
Figure 3. Framework of the Theory of Planned Behavior

Attitude

Attitude towards the behavior refers to the degree to which a person has a

favorable or unfavorable evaluation of the behavior in question (Paul et al., 2015). It

refers to the perception of an individual to engage in a behavior, either approvingly or

disapprovingly, taking into consideration any possible consequences that may spring

from this behavior. Attitude is recognized as a predictor when realizing one's true

behavioral intentions, and its influence has proven that it can have a positive impact on

behavioral intention (Chung, 2016).

Attitude is the main predictor of behavioral intention, as it is an emotion routed

through affective and instrumental evaluations of an activity by an individual. Attitudes

represent the perceived outcomes that the individual is anticipating and are often

influenced by motivation (Shu, Chan, & Wong, 1999). The more favorable is the attitude

with respect to a given behaviors, the stronger is an individual's intention to perform the behavior under consideration. In other words, if consumers develop positive attitudes toward sustainability and feel the need to do something positive for the environment, then that is when positive changes in sustainable behavior will be seen. The attitude construct captures the realistic situation that consumers face when they intend to adopt a sustainable lifestyle (Rex et. al, 2015).

Knowledge can affect how consumers interpret and assess available preferences in products, while environmental knowledge is considered the main motivator of green consumer behavior. In general, consumers who are more knowledgeable with the problems associated with the environment have more positive attitudes towards sustainable products, showing a positive relationship between knowledge and the purchase of green products. Environmental information can help guide consumers towards purchasing more preferable products and behave more environmentally friendly. At the same time, for consumers lacking information about more sustainable options, this results in an attitude-behavior gap between any environmental concern they may have and actual buying behavior to support those concerns. Additionally, confidence concerns can also greatly affect consumer purchase intentions. Confidence is defined as a level of trust and it is based on the expectation of its ability and reliability, but misleading claims of environmental benefits in products have made consumer hesitant to believe in them, negatively impacting their trust in these products (Liobikiene, et. al, 2016).

In the case of recycling, attitude is more directly related to behavior, as it makes the person feel good while recycling, instead of thinking of environmental concerns being a main motivator for sustainable behavior. This attitude toward the act would then be a

significant predictor of the behavioral intention to recycle (Shu, Chan, & Wong, 1999).

Concurrently, if a consumer's evaluation is positive, their behavioral intentions tend to be more positive as well. When a positive relationship between attitude and behavioral intention has been established the pertaining action can be seen. For example, consumers will opt for environmentally friendly packaging if they hold a positive attitude towards preserving the environment (Paul et al., 2015). Marketers will see changes in sustainable behavior only if consumers develop positive attitudes toward sustainable issues and see the need to do something positive to help the environment. The attitude construct captures the realistic situation that consumers face when they intend to adopt a sustainable lifestyle (Rex, et. al, 2015).

Based on this premise, three hypotheses were formulated, proposing that:

H1: Positive attitudes towards recycling apparel items leads to higher intention to engage in sustainable behavior.

H2: Positive attitudes towards the environment leads to a higher intention to engage in sustainable behavior.

H3: Positive attitudes towards green products leads to a higher intention to purchase sustainable apparel.

Subjective Norm

Subjective norm refers to the perceived social pressure to perform a set behavior, dictated by the opinions of significant others like family, friends, or coworkers. All of these opinions play an important role in influencing one's behavior, therefore, the subjective norm represents the perceived desire of significant others to approve or

disapprove of a specific behavior (Chung, 2016). Subjective norm captures the individual's feelings about the social pressure they feel about a given behavior. This can be seen in consumers that are more likely to adopt green behaviors when these behaviors are also exhibited by their significant others (Paul et al., 2015). Being seen doing the right thing by others is important to consumers and thus the subjective norm construct has been identified as a strong predictor of consumer's intention to recycle household waste and to buy environmentally friendly products, allowing the assumption that the same will be true for sustainable behaviors (Rex, Lobo, & Leckie, 2015).

Subjective norms help showcase the extent to which an individual may feel morally responsible for others by buying sustainable products. Social pressure encourages consumers to purchase more eco-friendly products and is a dominant factor influencing sustainable consumption, especially when consumers exhibit that holding a positive social image is important to them. Subject norms will positively influence behavioral intentions towards purchasing sustainable products (Liobikiene, et. al, 2016).

Previous research on recycling also supports the inclusion of perceived normative pressure as an antecedent of recycling, although its effect does not seem to be as reliable as that of the attitudinal factor. Most studies reviewed by Schultz et al. (1995) suggest that peer support can initiate and sustain recycling behavior, for example, recycling by friends or neighbors predicted an individual's own recycling behavior. More so having several members of a community participate in apparel recycling programs can further incentivize additional residents to participate. It is important to note that while this may be true for the majority, there are still individuals that won't be assuaged to comply just

because everyone else is participating, this will be indicative of their individual

personalities and co-dependency onto the behavior of others (Shu, Chan, & Wong, 1999).

Two additional hypotheses were formulated, proposing that:

H4: Family and friends influence the intention to engage in sustainable practices.

H5: Family and friends influence the intention to purchase sustainable apparel.

Perceived Behavioral Control

Perceived Behavioral Control (PBC) refers to the perceived ease or difficulty of

conducting a behavior. It evaluates the recognition of how well one person can control

the elements that will improve or hinder their behavior to perform an action and whether

or not that person possesses the necessary skills, resources, and opportunity to

successfully perform the action. Findings show that when one person has less control

over a behavior, his behavioral intention will be lower for the desired activity (Chung,

2016).

In this case, PBC is mainly influenced by two factors: convenience level and

price. Green products have to be easily available and offer a good value for their money

in order to be successful. Brand recognition becomes an important factor in this area.

While higher price has been found to be a deterrent of green products, consumers are

willing to pay a higher price for green goods if they offer higher quality than

conventional products. The focus should remain on the most important factor that triggers

green consumption: the perceived benefit to the environment (Liobikiene, et. al, 2016).

With respect to perceived behavioral control, previous investigations in this area suggest that recycling intention and behavior can also be affected by facilitators and inhibitors. For environmentally responsible behaviors, facilitators include having collection centers and recycling programs easily available, as well as accessible collection-friendly methods. Inhibitors to recycling include a distant collection center. Inhibitors may also believe that they 'do not have enough time' to go out of their way to do an extra activity, such as donate old clothing (Shu, Chan, & Wong, 1999).

Four hypotheses were formulated, proposing that:

H6: Convenience of purchasing green products will have a positive influence on intention to engage in sustainable behaviors.

H7: Convenience of purchasing green products will have a positive influence on the intention to purchase sustainable apparel.

H8: The price of green products will have a positive influence on the intention to engage in sustainable behaviors.

H9: Price of green products will have a positive influence on intention to purchase sustainable apparel.

Behavioral Intention

Behavioral intention relates to the likelihood of an individual engaging in a specific behavior and is considered an antecedent to predict the behavior of an individual. Consumers tend to carry out a behavior when their intentions are strong. As stated by Jani & Han (2013), this high predictive power of intention toward an actual behavior has been

researched extensively, especially from a marketing perspective. For example, when the

behavioral intention is favorable, there is a possibility that the activity will be repeated,

and the individual will share their positive experience with others. In the case of

recycling, this behavioral intention would be a strong indicator of a system or set of steps

that work for an individual, and then would be likely to work for others as well.

Identifying popular activities among individuals can help gauge potential successful

outcomes to try with others (Chung, 2016).

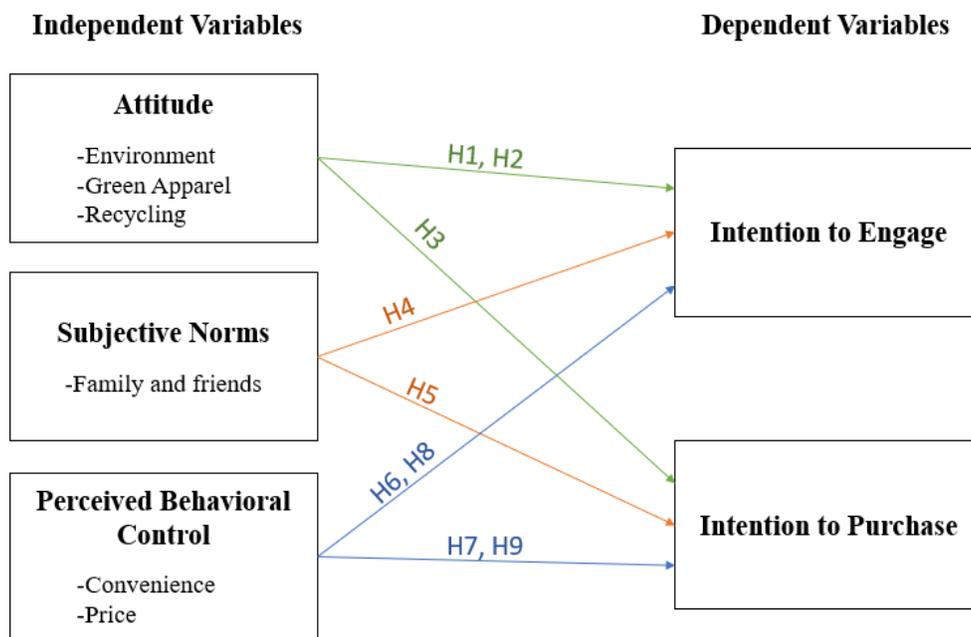**Figure 4.** Variable relationship model

METHODS AND PROCEDURES

In order to evaluate the criteria used when consumers are discarding versus

recycling clothing and identify the current state of consumer awareness regarding apparel

sustainability, an online survey was conducted. The questions focused on participants'

environmental concern, knowledge and confidence toward green products, price

considerations, convenience levels, and perceived effectiveness. The questions were supported by the Theory of Planned Behavior, which examined the Attitude, Subjective Norms, Perceived Behavioral Control, and Behavioral Intention of participants.

The target sample included a varied and broad demographic, ranging between gender, age, education, and income within the United States as seen in Figure 5 below. All participants were 19 years of age or older, with the median age of participants being 43. Participants were recruited through Amazon Mechanical Turk and were paid $0.10 for their time. The only requirement for participants is that they actively shop retail, both in-store and online on a regular basis, in order to more accurately measure the potential each participant has for acquiring and disposing of clothing. A reliable internet connection was also necessary as all surveys were completed online. Informed consent was obtained before each participant completed the survey. The surveys were given out via Qualtrics and all responses were automatically coded for analysis. The data was collected within 24 hours and a total of 403 responses were collected.
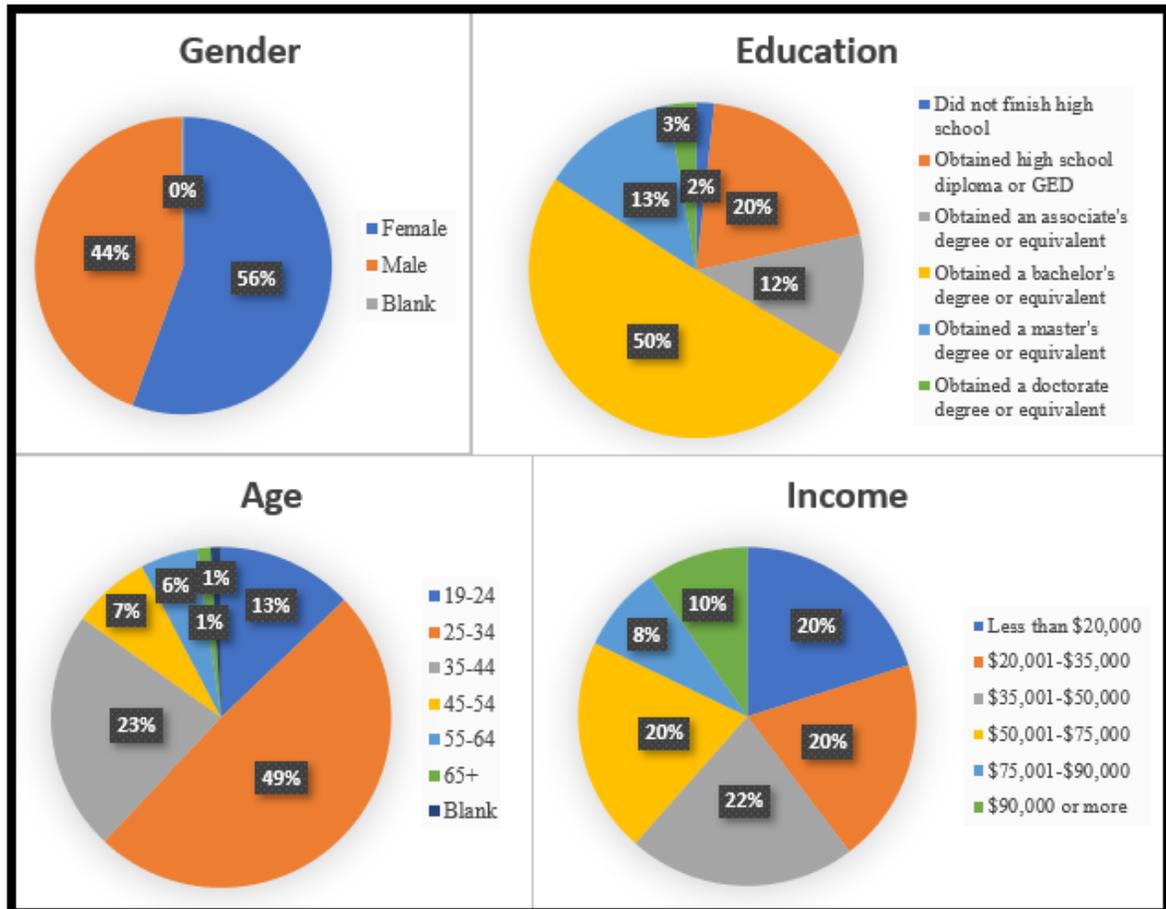
Figure 5. Participant Demographics

RESULTS

Measurement Reliability and Validity Test Results

From the 397 valid responses that were obtained, only 387 were considered for analysis as explained below. Amongst the initial 403 responses that were collected from participants, 6 answers were removed from the data analysis due to repetitive answers, missing answers or answering patterns that resulted in null data. For the hypotheses measuring the participants' Intention to Engage in sustainable behavior, 380 responses were utilized for the analysis. These include H1, H2, H4, H6, and H8. For the hypotheses

measuring the participants' Intention to Purchase sustainable apparel, 387 responses were utilized for the analysis. These include H3, H5, H7, and H9. The acceptance or rejection of hypotheses was determined by using multiple regression analysis in SPSS software. All questions used for this study had a Cronbach's Alpha of 0.7 or higher. Table 1 illustrates the individual Cronbach's Alpha found for each variable.

Variables	Intention to Engage	Intention to Purchase	Attitude Green Apparel	Attitude Environment	Attitude Recycling	PBC Convenience	SN Family Friends
Mean	19.28	17.70	8.93	10.70	11.70	23.94	5.99
SD	4.443	4.937	3.305	2.781	2.857	4.945	2.364
Cronbach's α	0.882	0.918	0.833	0.758	0.882	0.763	0.876

Table 1. Cronbach's Alphas per Variable

The Perceived Behavioral Control question regarding Convenience (Q6_5) did not meet the Cronbach's Alpha reliability measure of 0.7. This question was originally analyzed in the multiple regression of both dependent variables 'Intention to Engage in Sustainable Behavior' and 'Intention to Purchase Sustainable Apparel'. After removing this question from the analysis, the Cronbach Alpha for the variable of PBC Convenience increased from α =.593 to α =.763.

Hypothesis Testing

Based on the model in Figure 6, each independent variable was measured against the variables of 'Intention to Engage' and 'Intention to Purchase' as detailed hereafter.
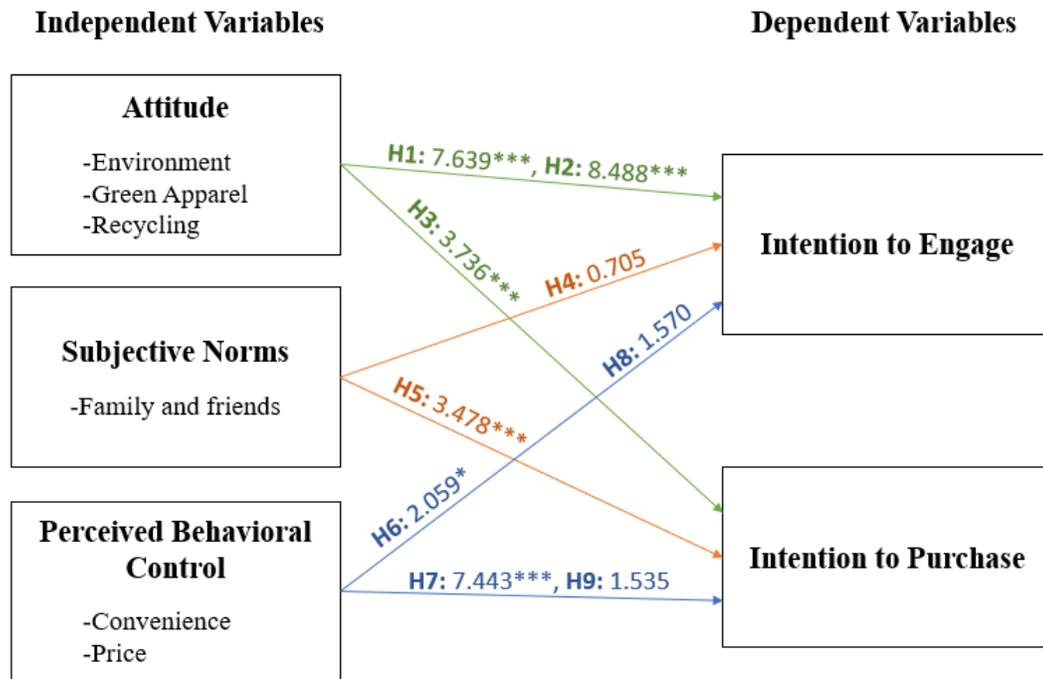
Note. *p<0.05, ***p<0.001

Figure 6. Hypotheses Testing

Intention to Engage

A variance of 64.8% was found to predict the participants' intention to engage in sustainable behavior (R^2 = .648, F (5,374) = 140.437, p<0.001). Participants' positive attitudes towards recycling items led to a higher intention to engage in sustainable behavior (t = 7.639***, p<0.001). Hypothesis H1, testing that 'positive attitudes towards recycling apparel leads to higher intention to engage in sustainable behavior' was accepted. Participants' positive attitudes towards the environment led to a higher intention to engage in sustainable behavior (t = 8.488***, p<0.001). Thus, hypothesis H2, testing that 'positive attitudes towards the environment leads to a higher intention to engage in sustainable behavior' was accepted. Participants' convenience of purchasing green products was also found to have a positive influence on intention to engage in

sustainable behavior (t = 2.059*, p<0.05). Hypothesis H6, testing that 'convenience of purchasing green products will have a positive influence on intention to engage in sustainable behavior' was accepted.

On the other hand, participants' family and friends' influence did not have a positive effect on their intention to engage in sustainable behavior (t = .705*, p>0.05). And so, hypothesis H4, testing that 'family and friends influence the intention to engage in sustainable behavior' was rejected. The price of green products did not have a positive influence on their intention to engage in sustainable behavior either (t = 1.570*, p>0.05). Hypothesis H8, testing that 'the price of green products will have a positive influence on the intention to engage in sustainable behavior' was rejected as well.

Intention to Purchase

A variance of 49.7% was found to predict the participant's intention to purchase sustainable apparel (R^2 = .497, F (4,382) = 96.445, p<0.001). Participants' positive attitudes towards green products led to a higher intention to purchase sustainable apparel (t = 3.736***, p<0.001). Hypothesis H3, testing that 'positive attitudes towards green products leads to a higher intention to purchase sustainable apparel' was accepted. In addition, participants' family and friends influence also affected their intention to purchase sustainable apparel (t = 3.478*, p<0.05). Hypothesis H5, testing that family and friends influence the intention to purchase sustainable apparel was accepted as well.

Participants' convenience of purchasing green products had a positive influence on their intention to purchase sustainable apparel (t = 7.443***, p<0.001). Hypothesis H7, testing that 'convenience of purchasing green products will have a positive influence

on the intention to purchase sustainable apparel was accepted. On the other hand, the price of green products did not have a positive influence on the participants' intention to purchase sustainable apparel (t = 1.535*, p>0.05). Hypothesis H9, testing that the 'price of green products will have a positive influence on intention to purchase sustainable apparel' was rejected. A summary of the regression results for each hypothesis is available in Table 2.

Intention to Engage				Intention to Purchase			
Hypothesis	t value	Sig.	Result	Hypothesis	t value	Sig.	Result
H1	7.639	0.000	Accepted	H3	3.736	0.000	Accepted
H2	8.488	0.000	Accepted	H5	3.478	0.001	Accepted
H4	0.705	0.481	Rejected	H7	7.443	0.000	Accepted
H6	2.059	0.040	Accepted	H9	1.535	0.126	Rejected
H8	1.57	0.117	Rejected				

Table 2. Regression Results per Hypothesis

Demographic Correlations

A variance of 2.1% was found between the Attitude variable and the participant's gender, when considering their positive attitudes towards recycling. Female participants were found to be more likely to have positive attitudes towards recycling and thus engage in sustainable behavior when compared to male participants ($r = 0.149$, p = 0.002). A variance of 5.9% was also found between the Attitude variable and the participants' age, when considering green products. Older participants had a higher intention to purchase sustainable apparel when compared to younger participants ($r = -0.234$, p = 0.000). Next,

a variance of 51.0% was found between the Subjective Norm variable and the participants' age. Older participants were more likely to be influenced by family and friends ($r = -0.203$, p = 0.000). And finally, a variance of 1.5% was also found between the Intention to Purchase and the participants' age. Older participants were more likely to purchase sustainable apparel when compared to younger participants ($r = -0.128$, p = 0.006).

DISCUSSION

Consumers' attitudes toward sustainable behavioral intention are well explained by measuring the importance of behaving sustainably and the inconvenience of recycling to reduce pollution, saving natural resources, and protecting land that would be used for landfill or rubbish. This is what consumers face daily when intending to adopt a sustainable lifestyle, reflecting a person's concern about the environment (Rex, et al., 2015). Considering the three constructs of the Theory of Planner Behavior gave further insight into how consumers perceive their intentions and their likelihood to act on them or not. When a consumer feels that sustainable consumption is relevant to their own life and enhanced social presentation of self-image, they are more likely to form a positive attitude, feel stronger social pressure to purchase sustainable apparel, and feel more control over difficulties related to their sustainable consumption (Kang et al., 2013).

Positive attitudes towards recycling, the environment, and green products were all found to be well received amongst participants. Their willingness to engage in sustainable behaviors, as well as their intention to purchase sustainable apparel, helps illustrate that there is a strong connection between a favorable opinion towards sustainability and the consumer's intention to act on it. Attitude was found to be the

strongest predictor of intention to purchase green products; when consumers' attitudes are positive and they display a higher concern for the environment, they will more likely make efforts to reduce their environmental impact (Paul et al., 2016) and this, in turn, translated into their intention to purchase sustainable apparel. The study by Kang et al. (2013) states that consumers who believe they can positively influence the environment tend to exhibit a more sustainable consumption. This is because they believe their individual consumption behaviors matter, which also increases their likelihood of purchasing green products (Kang et al., 2013).

Additionally, as younger consumers are moving more towards purchasing fast fashion, and as the throwaway fashion attitude is growing, it is imperative to point out that these consumers are more likely to become discarders versus recyclers. Textile recycling itself will be discouraged if most of what is being discarded are low quality fast fashion pieces, which are more costly to recycle than to discard. In this case, it is important to promote and expand more buy-back programs to encourage consumers to think about extending the life of the garments they own and no longer want. Joung & Park-Poaps (2013) mentioned that an industry-wide adoption of such buy-back programs would be the next big step to gather a substantial buy-in from the public. Added funding to help advance current recycling techniques alongside government laws and regulations can support tremendously the recycling mission, as more policies are needed to help implement these initiatives.

Moreover, economic concerns have been linked to resale and reuse behaviors in consumers, where consumers were less likely to reuse or recycle their garments if these were low quality fast fashion items. This implies that young consumers who are making

fast fashion purchases would be less likely to engage in sustainable behaviors. It is an important notion to consider, as most participants in this study had a positive attitude towards recycling apparel, signaling a higher intention to engage in sustainable behavior (Joung & Park-Poaps, 2013). However, the condition or brand of the participant's personal apparel was not contemplated within the questions in this study. Further research could be expanded on this topic, evaluating if garment brand and quality would have an impact in how consumers chose to dispose of their apparel. It would be interesting to expand this research to consider if participants would have different responses based on the quality of the apparel they own.

Next, the Subjective Norm variable proved to be more inconsistent in its findings regarding the influence of family and friends on the participants intentions. First, the intention to engage in sustainable behaviors was tested and it was surprisingly rejected (H4), while the intention to purchase sustainable apparel was accepted (H5). Although family and friends' influence did not prove to impact the participants' intention to engage in sustainable practices, it did lead to influence the participants' intention to purchase sustainable apparel. The influence to purchase better quality clothing, a sustainable brand, or avoiding a fast fashion purchase is often noticed indirectly by others, making the consumer more self-conscious and aware about their purchase choices. This makes it easier for consumers to make more educated purchase choices based on the suggestion of family and friends without much hesitation.

The influence of family and friends can also be more impactful in situations where a sustainable style consumption is supported, and where they may have a significant and positive influence over participants' looking to adopt a more sustainable

behavior. Having family and friends inspire the behavior of buying apparel made with organic and recycled materials, low impact or no dying process, is surely a great first step in the right direction and was supported by H5. As stated by Cho et al. (2015), the sustainable consumption of this apparel will eventually lead consumers to also increase their behavioral tendency to give and receive second-hand clothing from family and friends, reuse any discarded clothing for new purposes and resell or donate unwanted garments. For consumers being swayed to purchase sustainable apparel, their intention to engage in sustainable practices will eventually be acknowledged as consumers develop an emotional attachment to their garments through increased care and time spent tending to them.

Research by Do Valle et al. (2005) found that social norms do not have a direct influence on behavior but rather an indirect effect through personal norms. This is supported by the findings of this study where family and friends were able to influence the participants purchase of sustainable apparel yet not their intention to engage in sustainable practices. It seems that purchasing sustainable apparel was a more direct way to acknowledge that measures were being taken to be more sustainable in the eyes of others. Consumers with a stronger social conscience report a higher awareness toward environmental problems, sense a greater responsibility in participating in recycling collection programs, and are more willing to purchase sustainable apparel (Do Valle et al., 2005).

The explanation behind why the influence of family and friends was not strong enough to influence consumers into engaging in sustainable practices can be due to the fact that the approval of significant others is not as important as previously anticipated

(Paul et al., 2016). Consumers opting in or out of purchasing sustainable apparel may simply do so based on their own decisions rather than being influenced by the social pressure of others (Kang et al., 2013). The whole notion of becoming sustainable and making better eco-friendly choices should primarily satisfy the individual's goals before those of their peers. Both Attitudes and Subjective Norms were confirmed to be key elements in determining Behavioral Intention in the Theory of Planned Behavior (Kang et al., 2013). Additionally, it is important to consider that looping together 'family and friends' as one source of influence may also have skewed the results obtained in this study. Future research should offer the option to separate questions regarding family and friends individually to see if they differ in their influence on the participants. The influence of family or friends may also vary depending on demographic factors, as well as the lifestyle of each participant.

In the case of Perceived Behavioral Control, this variable strongly supported the basis of convenience rather than price. Convenience was found to be a strongly influential aspect, with positive influence patterns in both the intention to engage in sustainable behavior as well as the intention to purchase sustainable apparel. The study conducted by Paul et al. (2016) found that communicating the availability of green products to dispel product shortage beliefs and consumer convenience is an important link in the relationship between consumers' Perceived Behavioral Control and green product purchase intention (Paul et al., 2016). This ties back to the perceived availability of sustainable apparel choices against the vast selection of unsustainable apparel that is available in comparison.

Price, on the other hand, did not seem to be a strong enough force to influence

neither the intention to engage in sustainable behavior, nor the intention to purchase sustainable apparel. While price is considered a strong deciding factor amongst shoppers in general, it does not seem to be a crucial factor for shoppers interested in being more sustainable. This is further explained by Kang et al. (2013) stating that amongst the various concerns regarding sustainable apparel consumption, price, availability, or location, consumers believing that they can make a meaningful difference would tend to have greater impact in their actions. Hence, for consumers that are not convinced that they can make a difference in the environment through their consumption, the price of sustainable goods would be irrelevant. Only consumers that are already knowledgeable of this issue and support it would proceed to purchase sustainable apparel, and to them price would not be a deterrent if they are convinced that they are making a difference in the environment (Kang et al., 2013).

For fashion-focused consumers, the shopping priority tends to center on the quality and style that help express their unique selves. Most apparel brands that offer sustainable products have focused on high-end luxury items in their collections, using sustainable materials and high ethical standards both of which incur in a higher cost to produce. Many of these brands target consumers with higher discretionary incomes, neglecting a large consumer group in doing so. Furthermore, research conducted by Cho et al. (2015) suggested that consumers who are frugal in their apparel consumption would also be willing to engage in sustainable apparel consumption when the idea of style consumption is promoted. Especially for consumers that are aware of the environmental harm with consumption, the option to purchase more sustainable apparel could appeal to them and justify a higher cost if such products were marketed accordingly.

Price overall is a complex issue with several moving parts. Socially, price and the perception of it is a topic that requires further research to better understand its implications amongst consumers. Assumptions based on income cannot be fully supported, as new patterns of consumption are continually emerging. With the exponential reach of social media as a direct link to consumers, smaller companies are successfully marketing their fair-trade apparel production in ways that had not been possible before. Consumers are feeling the importance of sustainable apparel consumption and are gaining awareness of this issue, however, not much attention is being paid to identifying what increases the likelihood for consumers to practice buying second-hand clothing or recycling the garments they no longer need (Cho et al., 2015).

Demographic Correlations

Significant correlations between the main variables and demographic information investigated in this study were determined, and a few interesting results were obtained. First, an initial correlation was observed between gender and recycling, where female participants were found to be more likely to have positive attitudes towards recycling and thus engage in sustainable behavior when compared to male participants. The study by Cho et al. (2015) helped support this stating that women tend to be more frugal and fashion conscious and are more likely to practice sustainable apparel consumption. Their findings also supported that females are more interested and likely to engage in sustainable consumption practices in general (Cho et al., 2015).

A correlation was also found between the Subjective Norm variable and the participants' age, where older participants were more likely to be influenced by family

and friends compared to younger participants. It is interesting to consider that as children learn consumer behavior by observing and imitating their family members, a stronger influence would be expected amongst younger consumers, not older ones. More importantly, it is crucial to point out that young consumers today will become parents and will at some point influence the behaviors of the next generations. As such, early education can play a fundamental role in the beliefs of new generations and children should begin learning about the importance of preserving natural resources from an early age. Furthermore, as technology in recycling improves, this area will continue to grow and become more important within sustainability (Joung & Park-Poaps, 2013).

The correlation found with age also extends to include the participant's intention to purchase sustainable apparel, including Hypothesis 3 where positive attitudes towards green products lead to a higher intention to purchase sustainable apparel. Again, older participants had a higher intention to purchase sustainable apparel that younger participants. Different factors like maturity and a stronger ecological conscience may influence how older participants consider their purchase choices and see their ability to support sustainable practices. Consumers are expected to learn new behaviors throughout their lives and seeing older consumers more prone to purchase sustainable apparel, influenced either by their family and friends or from outside sources helps support that. The positive relationship between older consumers and their likelihood to adopt new behaviors is a good sign for younger generations as well.

CONCLUSION

It is clear that consumer influence can be a complex topic. When considering

sustainability and new implementations in how consumers choose to purchase or dispose of their apparel, adopting more sustainable practices can be challenging if there isn't a strong foundation supporting those changes. As demonstrated in this study, consumer attitudes proved to have the strongest connection between intention and action. Consumers that already understand and believe in the importance of behaving sustainably will be more driven to engage in sustainable behaviors and, in turn, more prone to purchase sustainable apparel. However, for consumers that are not invested in their belief to do more for the environment, behaviors such as recycling will not have a strong precedence in their actions. The support of additional influences like marketing and family and friends is necessary to help convince consumers of the changes they should be making. It is important for consumers to fully understand the long-term benefits that their sustainable practices can have for the environment, and the detrimental effects that will take place if they do not. For behavior change to occur, existing behaviors need to be improved and also adopted by more people if they are to make a real impact.

Although there are segments of consumers who are concerned about the social and environmental impact of consumption, it seems like the alternatives presented to them in this study were not all welcomed as readily adoptable practices. There is certainly still a lot to be learned about this topic. As stated by Harris et al. (2016), we are a long way from full consumer awareness regarding sustainability, especially those who are ignorant of the extent of the global environmental pollution and waste generated through the apparel industry. Society must come together and share this information with one another, between retailers and manufacturers, with parties aligned on their sustainable priorities if they are to make a difference within the industry. New standards

must be set regarding what is acceptable and what is not, setting new baselines for retailers and thus helping consumers also make informed decisions. Government involvement must do its part in ensuring that the United States can abide by basic laws set to protect the environment and the use of its resources, minimize excessive consumption and improve current waste disposal methods which are greatly polluting our planet. Markkula and Moisander (2012) called for policymakers to move from focusing on informing and educating consumers to actions that address not only individual consumer perceptions, knowledge and attitudes but also the wider cultural and social contexts of consumers' lives as a big picture idea (Harris et al., 2016).

Like purchase behaviors, textile disposal behaviors are also influenced by several factors, such as mass media efforts and direct marketing. In recent years celebrity endorsers have become powerful sources of innovation and influence across a wide base of consumers in general. The potential implications that a sustainable endorsement deal could have are promising (Joung & Park-Poaps, 2013). Future studies should focus on investigating the influence a celebrity endorser can have on promoting awareness on sustainability and creating change towards more eco-friendly behaviors. Best practices on how to buy, use, reuse, and dispose of apparel in a more sustainable way should be shared continually among all retail platforms if they are to stand out to consumers.

Future social marketing campaigns should emphasize that consumers need to feel that adopting sustainable practices is part of their self-identity and that they have an ethical obligation to engage in such practices as the only right thing to do. However, it is impractical to expect all consumers to feel concern equally. The wide range of sustainability issues will undoubtedly affect individuals differently, based on their own

interests. To encourage more sustainable behaviors within the apparel industry, both consumer-focused marketing and behavior change approaches are needed. Commercial marketing must exhibit 'a sound understanding of customer needs, buying behaviors and the issues influencing their purchasing choices' in order to effectively reach consumers and effect change. At the same time, social marketing should be focused on social problems rather than focusing solely on commercial ends (Harris et al., 2016).

In conclusion, sustainable apparel must be able to fulfill the core role that clothing plays in how it satisfies consumer's needs and wants. In doing so, some reshaping of consumer behavior and social norms may be required to protect the environment and the well-being of those partaking in the supply chain. Much progress is yet to be made, but the more this subject is understood and widespread, the closer we will get towards achieving a more sustainable planet.

PROPOSED IMPACTS FROM STUDY

The study provides clarity regarding specific areas of opportunity for consumers, by identifying their awareness towards apparel sustainability and areas where consumers would be likely to improve their current habits. Questions about sustainability within apparel also helped gather participant's general sentiments surrounding environmental concerns and their feelings regarding the purchase of environmentally friendly apparel. Finally, responses about purchase intention helped illustrate considerations towards future purchases and the participants' willingness to change current wasteful habits.

Supporting information that will follow this study can also be used to share new ideas and initiatives for any retailers that wants to become more sustainable within the

apparel industry. Promoting awareness can be an initial step to help educate consumers of better options when purchasing, utilizing, and disposing of apparel. Pledging support, while making a purchase, as well as afterwards during the care and disposal of apparel would be a tremendous win that can positively impact the life cycles of millions of garments, ultimately having less unnecessary waste.

Data obtained from this study also helps picture the progression of this topic with suggestions for additional research. Several recommendations for future studies were listed in the discussion section to highlight opportunities of focus to continue learning about the challenges of sustainability within the apparel industry.

Limitations

This study only tested a small sample of individuals. This sample does not completely represent the multiple demographic traits that exist among the population. This small sample did provide useful data, but it must continue to be researched if it is to be used for further generalization among the industry. Furthermore, participants were able to choose whether they wanted to participate in a specific survey (on MTurk), causing bias based on the topic of the study or the compensation being provided. Participants may also have chosen to answer the questions quickly and without much consideration, providing superficial responses and affecting the quality of the data. As mentioned previously, data that demonstrated repeated patterns were discarded from the data set and analysis.

Additionally, the topic at hand is vast and quickly evolving. Much of the information that is being examined comes from previous studies that may also have had

limitations and differences in their findings. This study is considering recycling as an important disposal option above many others, any of which could have been a better choice for any of the participants answering the survey. Failure to include more options and questions also limited the amount of information that could be obtained from participants and the usefulness of that data.

Lastly, virtue signalling is being considered as a positive limitation for this study. Virtue signalling is defined as 'to take a conspicuous, but essentially useless action, ostensibly to support a good cause buy actually to show off how much more moral you are than everyone else' (Parker, 2019). While this notion alludes that participants may opt to portray themselves in a positively light to others, this survey was anonymous and there was no connection between the answers provided and the participants. Participants may have thought about their answers after they completed the survey, but within the short time that it took to answer the questions, it is believed that most answers provided were instinctive and the need for a participant to 'show off' to others was minimized as they did not have an audience present. The questions asked in the survey were neutral and offered various answer choices, making the survey unbiased and open to genuine responses.

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APPENDIX A: Participant Survey Questions

Thank you for participating in this study. This survey should only take 10 minutes to complete. Please be assured that all answers you provide will be strictly confidential.

Variable	Proposed Questions	Answer Options					Source	Cronbach Alpha
Screening Question	I usually shop for apparel	Please check all that apply: ☐ Online via desktop ☐ Online via tablet ☐ Online via smartphone ☐ In-Store ☐ On the phone ☐ Via Catalog ☐ Other (fill in the blank)						
Screening Question	What actions have you taken to disposed of clothing in the past?	Please check all that apply: ☐ Upcycle (reused into something else) ☐ Repair ☐ Throw away ☐ Donate ☐ Resell ☐ Hand down to family or friends ☐ Other (fill in the blank)						
Screening Question	How much investigation have you done on sustainable apparel disposal?	Pick the statement that best describes you: ☐ I haven't investigated sustainable apparel options and I don't think about it ☐ I'd be interested in researching sustainable disposal options ☐ I've read *many* articles/information on sustainable disposal options ☐ I've read *some* articles/information on sustainable disposal options ☐ I do extensive research every time an apparel item needs to be disposed of						
BEHAVIORAL INTENTION	I am very concerned about the environment	Definitely Yes	Probably Yes	Unsure	Probably No	Definitely Not	(Paul et al., 2015)	0.78
	I would be willing to reduce my consumption to help protect the environment	Definitely Yes	Probably Yes	Unsure	Probably No	Definitely Not	(Paul et al., 2015)	0.78
	I believe major political and social changes are necessary to protect the	Definitely Yes	Probably Yes	Unsure	Probably No	Definitely Not	(Paul et al., 2015)	0.78

	natural environment						
ATTITUDE	I am quite familiar with sustainable apparel	Definitely Yes	Probably Yes	Unsure	Probably No	Definitely Not	(Kang, et al., 2013)	0.91
	I often see sustainable clothing in shopping places (e.g. department stores, specialty stores, online shopping malls, etc.)	Definitely Yes	Probably Yes	Unsure	Probably No	Definitely Not	(Kang, et al., 2013)	0.91
	I have often tried on organic cotton apparel although I did not make purchases	Definitely Yes	Probably Yes	Unsure	Probably No	Definitely Not	(Kang, et al., 2013)	0.91
BEHAVIORAL INTENTION	I engage in sustainable behavior at home	Definitely Yes	Probably Yes	Unsure	Probably No	Definitely Not	(Rex et al., 2015).	0.84
	I engage in sustainable behavior away from home	Definitely Yes	Probably Yes	Unsure	Probably No	Definitely Not	(Rex et al., 2015).	0.84
	When buying something or choosing between alternatives, I am likely to choose apparel that is more sustainable, even if it costs more	Definitely Yes	Probably Yes	Unsure	Probably No	Definitely Not	(Rex et al., 2015).	0.84
ATTITUDE	When I buy products, I tend to try to consider how my use of them will affect the environment	Definitely Yes	Probably Yes	Unsure	Probably No	Definitely Not	(Kang, et al., 2013)	0.85
	By purchasing apparel made in an environmentally friendly way, each consumer's behavior can have a positive	Definitely Yes	Probably Yes	Unsure	Probably No	Definitely Not	(Kang, et al., 2013)	0.85

	effect on the environment and society						
	I think it is worth it for the individual consumer to make efforts to preserve and improve the environment	Definitely Yes	Probably Yes	Unsure	Probably No	Definitely Not	(Kang, et al., 2013)	0.85
PBC	Sustainable apparel might not readily available where I shop	Definitely Yes	Probably Yes	Unsure	Probably No	Definitely Not	(Kang, et al., 2013)	0.86
	Shops that offer environmentally friendly apparel might be located far away from where I live	Definitely Yes	Probably Yes	Unsure	Probably No	Definitely Not	(Kang, et al., 2013)	0.86
	Environmentally friendly apparel might have a limited range of design, style, and/or colors	Definitely Yes	Probably Yes	Unsure	Probably No	Definitely Not	(Kang, et al., 2013)	0.86
	Sustainable apparel might be expensive	Definitely Yes	Probably Yes	Unsure	Probably No	Definitely Not	(Kang, et al., 2013)	0.86
SUBJECTIVE NORMS	Most people who are important to me think I should purchase environmentally friendly apparel	Definitely Yes	Probably Yes	Unsure	Probably No	Definitely Not	(Paul et al., 2015)	0.89
	My friends and family's positive opinion influences me to purchase environmentally friendly apparel	Definitely Yes	Probably Yes	Unsure	Probably No	Definitely Not	(Paul et al., 2015)	0.89
PBC	Keeping separate piles of discarded apparel for repurposing, recycling or donation is too much trouble.∗ (Asterisk indicates that a	Definitely Yes	Probably Yes	Unsure	Probably No	Definitely Not	(Rex et al., 2015).	0.79

	reversed scale was used)						
ATTITUDE	Recycling apparel will reduce pollution.	Definitely Yes	Probably Yes	Unsure	Probably No	Definitely Not	(Rex et al., 2015).	0.90
	Recycling apparel is important to save natural resources.	Definitely Yes	Probably Yes	Unsure	Probably No	Definitely Not	(Rex et al., 2015).	0.90
	Recycling apparel will save land that would be used for landfill/rubbish.	Definitely Yes	Probably Yes	Unsure	Probably No	Definitely Not	(Rex et al., 2015).	0.90
PBC	If I wanted to, I would not have problems in adopting a sustainable lifestyle.	Definitely Yes	Probably Yes	Unsure	Probably No	Definitely Not	(Rex et al., 2015).	0.79
	If it were entirely up to me, I am confident that I would purchase environmentally friendly apparel	Definitely Yes	Probably Yes	Unsure	Probably No	Definitely Not	(Paul et al., 2015)	0.81
	Environmentally friendly apparel is generally available in the shops where I usually do my shopping	Definitely Yes	Probably Yes	Unsure	Probably No	Definitely Not	(Paul et al., 2015)	0.81
	There are likely to be plenty of opportunities for me to purchase environmentally friendly apparel	Definitely Yes	Probably Yes	Unsure	Probably No	Definitely Not	(Paul et al., 2015)	0.81
BEHAVIORAL INTENTION	I will consider buying environmentally friendly apparel because it is less polluting	Definitely Yes	Probably Yes	Unsure	Probably No	Definitely Not	(Paul et al., 2015)	0.90
	I will consider switching to environmentally friendly apparel brands for	Definitely Yes	Probably Yes	Unsure	Probably No	Definitely Not	(Paul et al., 2015)	0.90

	ecological reasons							
	I expect to purchase environmentally friendly apparel in the future because of its positive environmental contribution	Definitely Yes	Probably Yes	Unsure	Probably No	Definitely Not	(Paul et al., 2015)	0.90
	I definitely want to purchase environmentally friendly apparel in the near future	Definitely Yes	Probably Yes	Unsure	Probably No	Definitely Not	(Paul et al., 2015)	0.90
Demographic Questions	Please indicate your age							
	Please indicate your gender	Female		Male		Other		
	Please indicate your highest education level	Did not finish High School	High School Diploma or GED	2-year College Degree	4-year College Degree	Master's Degree	PhD or other advanced professional degree	
	Please indicate your yearly income	Less than $20,000	$20,001-$35,000	$35,001-$50,000	$50,001-$75000	$75,001-$90,000	$90,000+	

APPENDIX B: Electronic Recruitment Text

You have been selected to participate in an online survey about consumer behavior regarding sustainability in apparel. Your participation in this study is important in understanding how consumers shop for, take care of, and dispose of their apparel. The survey will take approximately 15 minutes to complete and you could receive $0.10 in compensation after completing survey. There are no known risks to this study. We greatly value your input and time spent completing this survey. Please note that participants located in the United States must be 19 years of age or older to participate, while participants in the State of Mississippi must be 21 or older to participate.

APPENDIX C: Informed Consent Form

IRB #: 20190819611EX

Participant Study Title: **An Evaluation of Sustainability in Consumption: The Behaviors Behind Purchase, Care and Disposal of Apparel**

Authorized Study Personnel
Principal Investigator: Ana La Rosa
Secondary Investigator: Jennifer Johnson Jorgensen, PhD Office (402) 472-5462

Key Information:
If you agree to participate in this study, the project will involve:
• Males or Females 19 years of age or older
• Procedures will include answering an online survey via Amazon's Mechanical Turk
• 1 visit is required
• This visit will take 15 minutes to complete in total
• There are no risks associated with this study
• You will be paid $0.10 for your participation
• You will be provided a copy of this consent form

Invitation
You are invited to take part in this research study. The information in this form is meant to help you decide whether or not to participate. If you have any questions, please ask.

Why are you being asked to be in this research study?
You are being asked to be in this study because you are 19 years of age or older and actively purchase clothing in-store or online.

What is the reason for doing this research study?
This research will help understand how consumers shop for apparel, take care of it, and dispose of it.

What will be done during this research study?
You will be asked to complete 1 survey through Amazon's Mechanical Turk using an internet-based questionnaire. This survey will take 15 minutes to complete and you may complete it from your home computer.

How will my [data/samples/images] be used?
Your data will be sent to researchers from the University of Nebraska-Lincoln for analysis. No personal information will be identifiable among the data collected.

What are the possible risks of being in this research study?
There are no known risks to you from being in this research study.

What are the possible benefits to you?
You are not expected to get any benefit from being in this study.

What are the possible benefits to other people?
The benefits to society may include better understanding of how to become more sustainable within the apparel industry.

What will being in this research study cost you?
There is no cost to you to be in this research study.

Will you be compensated for being in this research study?
You will receive $0.10 for the survey completed for your participation in this study.

What should you do if you have a problem during this research study?
Your welfare is the major concern of every member of the research team. If you have a problem as a direct result of being in this study, you should immediately contact one of the people listed at the beginning of this consent form.

How will information about you be protected?
Reasonable steps will be taken to protect your privacy and the confidentiality of your study data. The topic of this study is not sensitive in nature and a breach of participant confidentiality is not possible. The data will be stored electronically through a secure server and will only be seen by the research team during the study and for 3 years after the study is complete.

The only persons who will have access to your research records are the study personnel, the Institutional Review Board (IRB), and any other person, agency, or sponsor as required by law. The information from this study may be published in scientific journals or presented at scientific meetings but the data will be reported as group or summarized data and your identity will be kept strictly confidential.

What are your rights as a research subject?
You may ask any questions concerning this research and have those questions answered before agreeing to participate in or during the study.

For study related questions, please contact the investigator(s) listed at the beginning of this form.

For questions concerning your rights or complaints about the research contact the Institutional Review Board (IRB):
• Phone: 1(402)472-6965
• Email: irb@unl.edu

What will happen if you decide not to be in this research study or decide to stop participating once you start?
You can decide not to be in this research study, or you can stop being in this research

study
("withdraw') at any time before, during, or after the research begins for any reason. Deciding not to be in this research study or deciding to withdraw will not affect your relationship with the investigator or with the University of Nebraska-Lincoln.

You will not lose any benefits to which you are entitled.

Documentation of informed consent
You are voluntarily making a decision whether or not to participate in this research study. By clicking on the Next button below, your consent to participate is implied. You should print a copy of this page for your records.

APPENDIX D: IRB Approval Letter

Nebraska
Lincoln

Official Approval Letter for IRB project #19611 - New Project Form
August 26, 2019

Ana La Rosa
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HECO 205 UNL NE 685830802

IRB Number: 20190819611EX
Project ID: 19611
Project Title: An Evaluation of Sustainability in Consumption: The Behaviors Behind Purchase, Care and Disposal of Apparel

Dear Ana:

This letter is to officially notify you of the certification of exemption of your project for the Protection of Human Subjects. Your proposal is in compliance with this institution's Federal Wide Assurance 00002258 and the DHHS Regulations for the Protection of Human Subjects at 45 CFR 46 2018 Requirements and has been classified as exempt. Exempt categories are listed within HRPP Policy #4.001: Exempt Research available at: http://research.unl.edu/researchcompliance/policies-procedures/.

o Date of Final Exemption: 8/26/2019
o Review conducted using exempt category 2a at 45 CFR 46.104
o Funding (Grant congruency, OSP Project/Form ID and Funding Sponsor Award Number, if applicable): Investigators funds

You are authorized to implement this study as of the Date of Final Approval: 08/26/2019.

We wish to remind you that the principal investigator is responsible for reporting to this Board any of the following events within 48 hours of the event:
* Any serious event (including on-site and off-site adverse events, injuries, side effects, deaths, or other problems) which in the opinion of the local investigator was unanticipated, involved risk to subjects or others, and was possibly related to the research procedures;
* Any serious accidental or unintentional change to the IRB-approved protocol that involves risk or has the potential to recur;
* Any protocol violation or protocol deviation
* An incarceration of a research participant in a protocol that was not approved to include prisoners
* Any knowledge of adverse audits or enforcement actions required by Sponsors
* Any publication in the literature, safety monitoring report, interim result or other finding that indicates an unexpected change to the risk/benefit ratio of the research;
* Any breach in confidentiality or compromise in data privacy related to the subject or others; or
* Any complaint of a subject that indicates an unanticipated risk or that cannot be resolved by the research staff.

This project should be conducted in full accordance with all applicable sections of the IRB Guidelines and you should notify the IRB immediately of any proposed changes that may affect the exempt status of your research project. You should report any unanticipated problems involving risks to the participants or others to the Board.

If you have any questions, please contact the IRB office at 402-472-6965.

Sincerely,

Jenn Klein
for the IRB

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