EXPLORING THE CIRCULARITY OF FAST FASHION USING GOAL FRAMING THEORY

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Thesis Prepared for the Degree of

MASTER OF SCIENCE

UNIVERSITY OF NORTH TEXAS

August 2022

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Wilbourne, Kathy. *Exploring the Circularity of Fast Fashion Using Goal Framing Theory*. Master of Science (Merchandising), August 2022, 64 pp., 9 tables, 2 figures, 1 appendix, references, 49 titles.

The COVID-19 pandemic has challenged fast fashion to circular products to prevent excessive overstock in responding to consumers' shift toward less consumption. These shifts are worth studying as consumers are willing to partake in pro-environmental behaviors, leading to a circular business model for fast fashion. This study explores how sustainable knowledge and consumer goals toward circularity can influence behavior toward circular consumption based on the goal framing theory. An online survey employing the Prolific survey platform was conducted with 300 fast-fashion consumer panels. The quantitative approach (ANOVA, cluster, factor, multiple regressions analyses) supported that consumers' framed-goals toward circularity significantly influence their intention to purchase fast fashion products. Fast-fashion consumers have prioritized reliable communication and pro-environmental goals to respectfully purchase circular products and 5Rs behaviors. They perceived circular economy and environmental knowledge as deciding factors in their pursuits of circularity. It corresponds to the benefits of lucrative circular business applications for fast fashion.

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CHAPTER 1

INTRODUCTION

Over the past twenty years, fast fashion has grown in popularity due to the number of clothing seasons increasing and apparel shopping becoming less of a necessary activity and more of a form of entertainment (Knošková & Garasovâ, 2019). Fast fashion products are identified by their short product life cycle, quick supply chain, low prices, and quick response to consumer demand (Knošková & Garasovâ, 2019). As a result of cheaper apparel, clothing consumption increased and positively affected the economy (Knošková & Garasovâ, 2019).

The core business goal of fast fashion has been how brands can translate designs seen on catwalks into products available in their stores or websites at the most accessible price (Bick, Halsey, & Ekenga, 2018). The globalization of apparel production allowed brands to move their sources of materials, textile manufacturers, and garment factories to areas with cheap labor to reduce product costs (Bick et al., 2018). For instance, Zara outsources an estimated 13% of its production to China and Turkey from higher quality control locations in Europe (Kaikobad et al., 2015). Until recently, the economic meaning of fast fashion protected it from critique for its excessive waste, which resulted in the slow development of circular business models (McNeill & Moore, 2015). The economic benefit of fast fashion came at the expense of the people working in the garment factory and the planet as a whole (Knošková & Garasovâ, 2019).

The growing interest in sustainable fashion has come partially in response to the Rana Plaza collapse of 2013. Over one thousand workers were killed after being forced to work in hazardous conditions (Carlson & Bitsch, 2019). This also led to creation of the seventeen development goals by the United Nations that guide brands on their sustainability initiatives

(United Nations, 2015). Fast fashion brands like H&M have used these goals to influence their sustainability development. While H&M seeks cost-efficient production and manufacturing methods to continue providing affordable pricing, they are shifting its supply chain to pursue a more circular model (H&M, 2020). The brand is introducing changes such as reducing its lead times to appeal to sustainability standards and committing to one-hundred percent recycled and sustainable materials within the next ten years (H&M, 2020). Additionally, the brand has shifted its product quantities to stock more extensive styles that retain their fashionability longer while reducing the stock of pieces that focus on quick trends and fads (H&M, 2020). H&M has focused on reducing its product releases while brands such as Fashion Nova and Shein release hundreds, sometimes even thousands, of new products each day (H&M, 2020).

These initiatives are far from completion, as studies have shown a direct correlation between poor health in garment factory workers and their working conditions (Islam et al., 2014). The low prices of fast fashion have directly contributed to the excessive consumption of clothing across the globe. Americans continue to consume and discard excessive amounts of apparel due to these easily accessible fast fashion products. American consumers purchase more apparel than any other country, with each consumer discarding an estimated eighty pounds of textiles each year (Bick, Halsey, & Ekenga, 2018). This excessive consumption and disposal of apparel are quickly destroying environments, with this waste accounting for approximately five percent of all landfill waste (Bick et al., 2018).

The arguments on circular economy (Bocken et al., 2017, Niero & Klbar, 2019) offer provoking goals for the fashion industry. The circular economy includes decoupling economic development from resource consumption, selecting non-extractive technologies and renewable

materials, and returning valuable resources to productive users, thereby reducing net material consumption and potentially lowering the system's overall impact (Babbitt et al., 2018). Achieving an utterly circular model in the fast fashion industry may not be possible due to consistent product releases. However, the progress made should not be ignored as these initiatives can leave lasting impressions and serve as a guide or influence for other brands. Additionally, the push toward sustainable production methods can encourage consumers to partake in sustainable consumption behaviors.

The COVID-19 pandemic changed consumerism and sustainable considerations in consumer purchasing decisions and fashion business operations. Approximately 65% of consumers have begun to prioritize high-quality, long-lasting items, and 60% have stated that environmental impacts are a deciding factor in their consumption behavior (McKinsey & Company, 2021). Furthermore, 43% of fashion brands have reduced product development lead times to avoid excessive overstock in pursuit of the consumer shift towards a 'less is more' attitude (McKinsey & Company, 2021). However, these attitudes do not always apply to all industries. In a recent survey, most participants were unaware of the topic of sustainability or how it pertained to the apparel industry (Diddi et al., 2019). In the same study, participants stated they purchased more apparel items than necessary but did not associate their excessive clothing consumption with sustainability (Diddi et al., 2019).

Consumers unaware of sustainability topics may not have negative attitudes towards fast fashion consumption, especially if society as a whole and their social circles encourage this consumption. If consumers are unwilling to pay for slow fashion items, they can still reduce their consumption of fast fashion to become more sustainable. However, many consumers do

not consider this possibility (Diddi et al., 2019). This lack of understanding of the connection between sustainability and the apparel industry could encourage consumers to purchase fast fashion products. Despite this disconnect, these more recent attitude shifts are worth studying as they can influence sustainable consumption behaviors and develop a sustainable business model for the fast fashion industry.

Goals can govern knowledge and attitude (Lindenberg & Steg, 2007). Goal framing theory focuses on how people evaluate various aspects of a situation while considering alternatives (Lindenberg & Steg, 2007). When goals are activated, they will influence how individuals perceive a moment or situation, perceive any alternatives, and act in response (Lindenberg & Steg, 2007). The goal states that these background factors can positively or negatively affect pro-environmental behaviors (Thogersen, 2005). Indeed, goal framing theory highlights influential factors on pro-environmental consumer behavior, and multiple motivators account for behavior. By applying the goal framing theory, framed goals and sustainable knowledge can explicate consumers' behavioral context of circularity.

Purpose of the Study

The study aims to examine how consumers' framed goals toward circularity and sustainability knowledge affect the behavior intention to sustainable consumption (e.g., buying custom-made, eco-friendly, quality/timeless designs, and fair/ethical products) and 5Rs (e.g., Recycle, Reuse, Repair, Resell, and Rent) for fast fashion products. The study also compares how consumer identity groups differ in their framed-goals, knowledge perceptions, and behavior intention to sustainable consumption of fast fashion. While it may not be possible for fast fashion to achieve an utterly circular model, the initiatives leave a lasting influence on

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consumers, encouraging them to partake in circular utilization in their daily consumption. It also motivates how circularity can be a viable business strategy in the fast fashion industry.

Assumptions

I operated under the assumption that participants would respond truthfully to the questionnaire and the sample set would consist of consumers who have previously purchased fast fashion products.

Operational Definitions

- *Behavioral intention to circular consumption* is operationalized as five Rs intention and purchasing intention to circular fashion products.

- *Circular product design* focuses on the consumer goals towards design features that allow products to have extended lifespans and ensures resources are used efficiently.

- *Five Rs intention (recycle, reuse, repair, resell, and rent)*: Consumer intention to recycle, reuse, repair, resell, or rent fast fashion apparel.

- *Goal framing* is operationalized as a pro-environmental, reliable communication, circular product design, and product quality.

- *Product quality* focuses on consumer goals towards materials used in production that allow products to have long life cycles and to be recycled into new products.

- *Pro-environmental* focuses on consumer goals towards pro-environmental behaviors and features.

- *Purchasing intention to circular fashion products*: - Purchasing intention to products that are pro-environmental, use reliable communication, circular design, with high quality and

timeless designs.

- *Reliable communication* focuses on consumer goals towards transparency and availability of product details and information.

- *Sustainability knowledge* is operationalized as social responsibility, circular economics, and environment knowledge.

CHAPTER 2

REVIEW OF LITERATURE

This chapter introduces goal framing theory, sustainable knowledge,goal faming,

behavioral intention, and consumer identity groups along with the research model.

Goal Framing Theory

Comprehending pro-environmental behaviors requires a multi-dimensional view that

incorporates internal and external elements. A helpful model can account for motivations,

attitudes, and values; contextual or situational factors; social influences; and personal

capabilities and habits (Stern, 2000). For example, Bagozzi and his colleagues (2002) developed

an integrative consumer action model by viewing consumer actions as a set of social practices

influenced by social norms and lifestyle choices and by the institutions and structures of

society.

Goal framing theory highlights influential factors on pro-environmental consumer

behavior, and multiple motivators account for behavior. For example, Owino (2020) suggested

that the hedonic goal frame focuses on the need for immediate satisfaction, the gain goal frame

focuses on improving and protecting an individual's resources, and the normative goal frame

focuses on ensuring the appropriate action in a given situation. Goal framing, however, claims

that there are multiple activated goals within any period, and the compatibility of an

individual's background strengthens the goal (Owino, 2020). Furthermore, the goal states that

these background factors can positively or negatively affect pro-environmental behaviors. For

example, background factors such as the availability and affordability of circular fashion

products can influence pro-environmental behavior.

Goal framing theory focuses on aspects that individuals attend to and how people evaluate various aspects of a situation while considering alternatives (Lindenberg & Steg, 2007). When goals are activated, they will influence how individuals perceive a moment or situation, perceive any alternatives, and act in response (Lindenberg & Steg, 2007). Goals have the ability to govern both knowledge and attitude (Lindenberg & Steg, 2007). Preview studies have supported the idea that behavior can result from multiple motives (Lindenberg & Steg, 2007). By applying the goal framing theory, goals toward circularity and sustainable knowledge can explicate consumers' behavioral context of circularity.

Sustainable Knowledge

Consumer awareness of sustainable topics creates an initial concern, while knowledge can create a feeling of responsibility for behavior (Owino, 2020). Sustainable knowledge positively influences pro-environmental purchasing decisions (Owino, 2020; Eze et al., 2013). However, many consumers do not consider this possibility (Diddi et al., 2019), which results in buying more fast fashion products. The logic behind the triple bottom perspective demonstrates the balanced approach of economic, environmental, and social aspects coherently to achieve sustainability. Using the Triple Bottom Line perspective (Elkingtonm, 2018), the knowledge applicability can expand to the fast fashion model by focusing on the impact on the environment, its relationship to their community, and its economic contribution.

Social Responsibility Knowledge

Social responsibility is defined and measured through five categories: labor rights and decent work, health and safety, human rights, governance, and community infrastructure

(Pelletier et al., 2018). The first category, labor rights and decent work can include social issues such as worker wages and ensuring workers have the right to strike. For example, the ready-made garment industry in Bangladesh employs approximately 3.6 million garment factory workers, of which eighty percent are women (Naved et al., 2018). Studies have shown that these garment factory workers, particularly women, face acts of violence when at work (Naved et al., 2018).

The second category, health and safety, is in reference to workers' wellbeing and preventing injuries and fatalities through labor practices. Levi and H&M are two brands that have improved upon this category of social sustainability by banning the process of sandblasting in their products. This process is usually performed on denim items to create intentional tears and distressed styles and uses aluminum oxide, aluminum silicate, silicon carbide, copper slag, and garnet to create abrasions (Clark, 2010). However, this denim distressing process has been linked to the increase of silicosis among garment factory workers as they are not provided with essential protective gear (Clark, 2010). Many companies have switched to using lasers as an alternative their reduced health risks and their ability to engrave, fade, and further customize garments through a process with less financial costs (Nayak, & Padhye, 2016).

Human rights, the third category of social sustainability, addresses issues in the ready-made garment industry, such as gender inequality. Gender equality is a persistent issue in addressing and ensuring the human rights of workers in the ready-made garment industry. Studies in countries such as Turkey have shown that women workers in the garment industry face harassment, discrimination, and judgment from their male supervisors (Can, 2017).

The fourth category, governance, is in reference to legal systems and corruption in governing bodies. This can be seen with the Cotton Campaign against Uzbekistan cotton. The government was found to be requiring forced and child labor among its citizens during periods of cotton harvest (Tashkent, 2020). Despite brands such as Nike, GAP, and H&M joining the boycott and campaign that started in 2013, Uzbekistan was found to use 100,000 individuals through forced labor in 2019 (Tashkent, 2020).

The fifth category, community infrastructure, focuses on improved sanitization and drinking water, and the resilience of factories in the ready-made garment industry. The failure to address this social sustainability category can be seen in the 2013 Rana Plaza collapse. Workers reported cracks in the building and a lack of maintenance but were ultimately forced to reenter the building shortly before its collapse (Bolle, 2013). The lack of safe infrastructure directly caused the death of over 1,100 garment factory workers.

Circular Economic Knowledge

Circular economic sustainability focuses on business practices that affect economic systems (Fung, 2021). It can be defined as "aiming towards both justice and efficiency with respect to human-nature relationships over the long-term and inherently uncertain future" (Baumgärtner & Quass, 2010, p. 2057). While economic growth can support future generations, sustainability defines the need to balance this long-term development with the planet's limited natural resources (Fung, 2021). By reusing and recycling resources during production, brands can experience financial gain as they can purchase fewer resources. Currently, apparel product development processes predominately use an open-ended system in which natural resources are acquired, transformed into products, and disposed of when no longer of use. This system

contradicts the idea of sustainability as the constant use and disposal of limited natural resources does not guarantee the long-term existence of the planet or its people.

To make this model more sustainable, resources need to be reused in the production process, such as reusing water in the wash cycles of denim production. This creates a closed-loop system, referred to as the circular economy, proposed by Stahel and Reday-Mulvey in 1981. The fashion industry has traditionally run on a linear model where resources are taken, used in production, and disposed of. The concept of a circular economy challenges this idea and seeks to reuse resources during and after production by recycling garments into new fibers that can be manufactured into new products (Sandvik & Stubbs, 2019). Circular economies allow resources to remain in use for the maximum amount of time possible through the recycling of waste and byproducts, reducing the demand for raw materials (Nasir, et al., 2017).

Environmental Knowledge

The apparel industry continuously grows in response to excessive consumption by consumers across the world. The sportswear market alone is expected to grow 630 million USD between 2020 and 2024 (Fung, 2021). This growth can be problematic as the sportswear market currently accounts for an estimated eight percent of global greenhouse gas emissions (Weekendbee, 2020). These emissions only account for the sportswear market, and not all fashion and fast fashion markets. This mass growth can negatively impact the environment as consumers continuously purchase and discard mass amounts of textile products. The planet is faced with a crisis of the continuous decline of limited natural resources as the human population's demand for new products increases.

The negative consequences of this excessive consumption are due to both consumers

and product manufacturers. The rapid increase of the planet's population has led to an increased demand for natural resources and agriculture productivity as the demand for plant-based fibers, and animal fibers have continued to grow over recent years. This pressure on the agricultural industry negatively impacts the environment as overgrowing and grazing can lead to the decline of carbon soil and soil erosion (Fung, 2021). For example, the International Cotton Advisory Committee reported an increase in cotton consumption of eleven percent, equivalent to 25.4 million tons, over the previous year (Fung, 2021). Additionally, in 2015 the International Wool Textile Organization reported that 1.163 billion sheep were needed to produce 1.16 million kilograms of clean wood to satisfy consumer demand (Fung, 2021). These negative environmental impacts continue throughout the stages of the supply chain process. Manufacturing processes and garment finishing stages are known for chemical usage, water waste, and various other negative environmental impacts.

Goal Framing toward Circularity

In a recent survey on the COVID-19 pandemic, 43 % of surveyed fashion brands have reduced product development lead times to avoid excessive overstock in pursuit of the consumer shift to a 'less is more' attitude (McKinsey & Company, 2021). These consumers' attitude shifts are worth studying as they can influence pro-environmental behaviors and thus adopt circular fashion. Fast fashion brands such as H&M have shifted their product quantities to stock more extensive styles that retain their fashionability longer while reducing the inventory that focuses on quick trends and fads (H&M, 2020). In this report (McKinsey & Company, 2021), around 60% of consumers stated they perceive environmental impacts as a deciding factor in their consumption behavior, and 65% have begun to prioritize high-quality, long-lasting items.

Suppose consumers essentially advance their framed goals; they are assertive about their pro-environmental behaviors and actively participate in circular fashion consumption.

Pro-Environmental

The European Union (EU) launched the Circular Economy Action Plan in 2020 to support economic actors, consumers, citizens, and civil society organizations. For consumers, the circular economy will provide high-quality, functional, and safe products which are efficient and affordable, last longer, and are designed for reuse, repair, and high-quality recycling. In addition, a whole new range of sustainable services, product-as-service models, and digital solutions are expected to bring about a better quality of life, innovative jobs, and upgraded knowledge and skills.

Reliable Communication

Through the mobilization and digitalization of product information, such as through digital passports, tagging, and watermarks, consumers are expected to be able to receive both trustworthy and relevant information on their products upon purchase (EU, 2020). This information should include key details such as expected lifespan, product care, and repairability (EU,2020). Furthermore, brands should commit to protecting their consumers from greenwashing (EU, 2020). This can be done by setting minimum requirements for using sustainability labels or logos and developing an industry-wide reporting and certification system (EU, 2020).

Circular Product Design

Circular product design is necessary to ensure products are given extended lifespans and

resources are used efficiently through product longevity. Empowering manufacturers and

utilizing recycled products allows resources to be reused (EU, 2020). Higher value designs and

materials give products longer lifespans and, upon disposal, enable the product to be

reintroduced to the production cycle (EU, 2020). Marketing these products as a service

encourages producers to maintain ownership of these products and encourages brands to take

responsibility for the product's overall performance (EU, 2020).

Product Quality

It is currently estimated that less than one percent of all textiles are recycled into new

textiles (EU, 2020). One key component of this issue is the number of textiles being produced

with poor-quality materials that cannot be recycled. Improving a product's durability,

reusability, upgradeability, and reparability extends its lifespan for the initial consumer, and

ensures it can be recycled into something new (EU, 2020). Therefore, brands should codesign to

guarantee their products are circularity compatible and encourage consumers to seek more

sustainable textiles of higher quality and easy to reuse and repair (EU, 2020).

<div align="center">Behavioral Intention to Circular Consumption</div>

Purchase Circular Products

The idea of a circularity encourages sustainability movement that efficiently uses natural

resources and creates little to no negative environmental impact (United Nations, 2015).

Circularity often refers to social sustainability as the reduced pollution would improve the

working conditions and health of those working in supply chain facilities. Pro-environmental

behaviors of circular fashion are ensuring apparel items are manufactured by demand or

custom made, made in timeless designs and are high in quality, created with environmentally friendly processes and ethical production methods, should be passed to secondhand shops or within an individual's social circle when no longer needed to avoid buying new items (Alexander, 2019). However, many consumers are unaware that this idea is a form of circular consumption (Diddi et al., 2019). Furthermore, implementing bespoke goods can reduce this waste. Brands such as Louis Vuitton and Levi's have introduced customization of their products that allow consumers to create a personalized touch to their purchases through features such as monograms and patches. It creates an improved relationship between the product and the consumer, reducing the consumer's need and their likeliness of disposing of the product (Dissanayake, 2019). While the relationship between a consumer and a product often starts at the time of purchase, the relationship begins during customization as consumers play a role in the product's final design (Dissanayake, 2019).

In order to pursue eco-friendly production, brands must continuously implement and improve upon sustainable approaches, process cleaner products, improve efficiency, and reduce the overall risk to the planet (Akter et al., 2020). Production cycles should include clean manufacturing technologies such as organic materials, sustainable distribution/transportation, waste management, and green design (Akter et al., 2020). In addition, clean manufacturing implementations include efficient energy consumption as renewable energy sources reduce carbon emissions and increase energy efficiency (Akter et al., 2020). Fair and ethical goods ensure that human and animal rights are met during the production process. While ethically produced items cost more to create, this is no justification for the continued tolerance of fast fashion. The cost of these fast fashion items is a direct result of their production methods that

do not respect the rights of individuals or animals and have little to no concern for

environmental impact (Alexander, 2019).

Five Rs (Recycle, Reuse, Repair, Resell, and Rent)

Sustainable consumption can be categorized into six main types. The first category,

recycling, is not discarding unwanted apparel items but instead recycling them. While this can

often be done through donation centers, many brands have begun incentive programs to

encourage consumers to donate these items in their stores (Diddi et al., 2019). As a result,

recycling has become common in many industries. Unfortunately, while it allows manufacturers

to use these recycled products to create new items instead of using new resources, it often

encourages consumers to purchase additional apparel items that do not encourage reduced

consumption (Diddi et al., 2019).

The second category, resell, has become increasingly popular with younger generations.

Depop, a platform used to buy and resell apparel products, saw a 300% increase in 2020

(McKinsey & Company, 2021). While younger generations were quick to adopt this strategy,

many consumers from older generations have concerns such as potential hygiene issues and

other negative connotations (McKinsey & Company, 2021). Many of these concerns and

attitudes hinder the widespread acceptance of the third category, rent, as consumers are

unsure of sharing apparel items with unknown individuals (McKinsey & Company, 2021).

However, despite these concerns, brands such as Mulberry have maintained a 'leather library'

for their consumers to rent, resell, or repair products within their stores (McKinsey & Company,

2021). Apparel renting has become increasingly popular through platforms such as Rent the

Runway that offers a series of subscriptions that allows consumers to rent apparel products for

a fraction of the retail cost (Lockwood, 2019). It will enable consumers to continuously modify their wardrobes or use pieces for formal events, vacations, and other short-term needs.

This fourth category, repair, allows consumers to have product experts repair damages to their item without facing the need to replace it with a new one. As previously mentioned, Mulberry has implemented this repair service into their stores in order to assist consumers in prolonging the life of their items. Mulberry also offers a buyback program in exchange of store credits for unwanted items. This exchange allows consumers to update their wardrobe while prolonging the life of their previous item as it can be repaired and sold once more at a discounted price. This extra inventory can also allow brands to reduce the number of new items they produce to stock their stores. Mulberry is an industry example of how brands can incorporate multiple methods into their business model by using rent, resell, and repair to reduce their leather goods production.

The fifth category, reuse, is perhaps the most simplistic way to consume apparel products sustainably. While reusing apparel products may appear to be a simple task, the increase of social media has introduced the fear of being seen wearing the same outfits twice (Erin, n.d.). When consumers are less likely to reuse a product, they may feel less inclined to care for or repair to product to ensure future uses (Erin, n.d.). Overcoming this fear of repeating outfits and finding new ways to style apparel products can prolong a product's lifecycle and serve as a form of sustainable consumption.

Consumer Identity Groups

The robust sustainability knowledge and framaed goals toward circularity do not always translate into a rise in sustainable consumption (McNeill & Moore, 2015). While some

consumers may feel the need to reduce their negative impact on the world, others are concerned with their social image, maintaining their appearance, and keeping up with the latest trends (McNeill & Moore, 2015). Previous research (Chang & Watchravesringkan, 2018) has defined three types of consumer groups that partake in sustainable apparel consumption. Previous research has indicated that one consumer identity group, social consumers, are those that are concerned about environmental and social topics, but place high values in the opinions of their friends and family (McNeill & Moore, 2015). A second identified group, the self consumers, have a high interest in current fashion trends and styles. These consumers have little to no concern of sustainability topics as they value fast fashion due to its ability to produce current trends at an affordable price (McNeill & Moore, 2015). A third identified group, the sacrifice consumer, is the consumer that is highly focused on sustainability concerns. This consumer avoids fast fashion and is sometimes skeptical of sustainability initiatives as they may view these improvements as green-washing (McNeill & Moore, 2015).

Research Model

The research model showcases the proposed multi-dimensional relationships between consumer framed goals, sustainability knowledge, circular consumption behavior, and consumer identity groups. Goal framing consist of four attributes listed pro-environment, reliable communication, circular design, and product quality. Sustainability knowledge is categorized into three attributes noted as corporate social responsibility (CSR), circular economy, and environmental. Circular consumption behaviors consist of two attributes stated as purchasing circular fashion, and 5R behaviors recycle, reuse, repair, resell and rent.
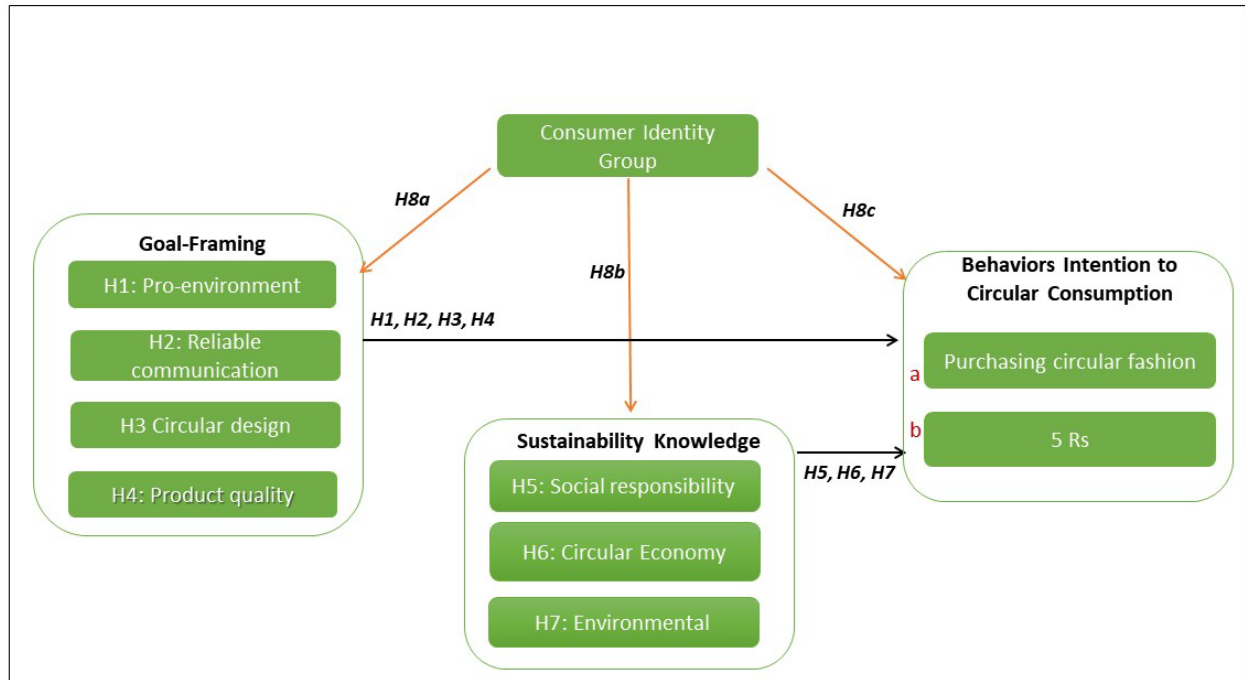
Figure 1: Goal framing model for fast fashion circularity

Problem Statement and Hypotheses

The purpose of the study is to examine how consumer framed goals toward circularity and sustainability knowledge may affect consumer intention to circular consumption behaviors. The study also seeks to analyze the differences between consumer identity groups and their framed goals, sustainable knowledge, and behavioral intention for circular consumption of fast fashion. As stated below, the relationships between framed goals, consumer identity groups, sustainability knowledge, and behavior intention to circular consumption were hypothesized.

- H1: Pro-environmental goal positively affects behavior intention to circular consumption
    - H1a: Pro-environmental goal positively affects behavior intention to purchase circular fashion
    - H1b: Pro-environmental goal positively affects behavior intention to 5R consumption

- H2: Reliable communication goal positively affects behavior intention to circular consumption

    - H2a: Reliable communication goal positively affects behavior intention to purchase circular fashion

    - H2b: Reliable communication goal positively affects behavior intention to 5R consumption

- H3: Circular design goal positively affects behavior intention to circular consumption

    - H3a: Circular design goal positively affects behavior intention to purchase circular fashion

    - H3b: Circular design goal positively affects behavior intention to 5R consumption

- H4: Product quality goal positively affects behavior intention to circular consumption

    - H4a: Product quality goal positively affects behavior intention to purchase circular fashion

    - H4b: Product quality goal positively affects behavior intention to 5R consumption

- H5: Social responsibility knowledge positively affects behavior intention to circular consumption

    - H5a: Social responsibility knowledge positively affects behavior intention to purchase circular fashion

    - H5b: Social responsibility knowledge positively affects behavior intention to 5R consumption

- H6: Circular economic knowledge positively affects behavior intention to circular consumption

    - H6a: Circular economic knowledge positively affects behavior intention to purchase circular fashion

    - H6b: Circular economic knowledge positively affects behavior intention to 5R consumption

- H7: Environmental knowledge positively affects behavior intention to circular consumption

- H7a: Environmental knowledge positively affects behavior intention to purchase circular fashion

  - H7b: Environmental knowledge positively affects behavior intention to 5R consumption

- H8: There are significant differences among the different consumer identity groups in goal framing, sustainable knowledge perceptions, and behavior intent to circular consumption

  - H8a: Influential circular, social, and perplexing self groups have significant mean differences in goal-framing

  - H8b: Influential circular, social, and perplexing self groups have significant mean differences in sustainable knowledge perceptions

  - H8c: Influential circular, social, and perplexing self groups have significant mean differences in behavior intention to circular consumption

CHAPTER 3

METHODOLOGY

This chapter describes the methodology with further details on sample characteristics

and the data collection procedures. The description is followed by the problem statement,

hypotheses, instrument development, preliminary test, questionnaire translation, and

assumptions.

Sample and Data Collection

The Institutional Review Board (IRB) gave approval for the protection of human subjects

prior to data collection and analyses. Data was collected using Qualtrics survey software and

Prolific panels to gather participants. The questionnaire included a cover page asking

participants to participate in the study. Participants were informed that their participation was

voluntary and anonymous, and they would face no penalties or credit for not participating. Past

purchase experience in fast fashion was screened by identifying their purchased brand names in

the previous six months. Respondents' demographic information was also measured for

descriptive purposes of the sample population.

A preliminary survey was conducted using 45 graduate students (merchandising major)

from a southwestern public university in the United States to ensure face validity, internal

consistency and reliability in measuring goal-framing and behavior intention toward circularity.

Students were provided a link to the survey on the Qualtrics platform and were able to respond

anonymously. The scales were proven to be internally consistent (Cronbach's alpha ranged

from .49-.99), discriminate among constructs, and support the face validity of indicators of the

theoretical variables. In addition, slight modifications were made after the pretest to improve readability.

A total of 300 surveys were employed with 299 usable responses analyzed. The majority of this population were Caucasian (*n* = 211, 70.57%) had completed a bachelor's degree (*n* = 135, 45.30%) and had a monthly income of less than $500 per month (*n* = 89, 29.77%) or $1,001-$2,000 per month (*n* = 89, 29.77%). The majority of the sample had reported shopping for fast fashion brands H&M (*n* = 120), Shein (*n* = 81), Forever 21 (*n* = 72), and Zara (*n* = 51). Due to a technical error, only 230 participants responded to questions regarding age and gender. The majority of these respondents were female (*n* = 150, 65.22%) and ages 26-42 (*n* = 124, 53.91%) and 18-25 (*n* = 78, 33.91%).

Instrument Development

Existing scales derived from previous literature were used to create a self-administered questionnaire. A 33-item scale of sustainable knowledge was adapted from previous literature based on a triple-bottom line perspective: 11 items of social responsibility knowledge (Chang & Watchravesringkan, 2018), 11 items of circular economy knowledge (Belleasu, Summers, Xu, & Pinel, 2007), and 11 items of environmental knowledge (Steven, 1985). Since there were not any specific measurements that existed for circularity attitude and behavioral intention, the following scales were modified for to measure goal-framing and behavior intention toward circularity: 18-items of goal-framing toward circularity (EU, 2020) and 7-items of behavior intention to circular consumption (EU, 2020). Additionally, 10-items of consumer identity (McNeill & Moore, 2015) were adapted. Minor changes were made to accommodate the study context.

The questions utilized a combination of multiple-choice questions and a 5-point Likert scale. The Likert scale ranged from *strongly disagree* (1) to *strongly agree* (5) as the lower and upper anchors, respectively. This sale was selected because of the advantages of allowing intercultural questioning without systematic errors (Lee & Turban, 2001). The Likert scale was used to measure the research variables, while multiple choice responses were used to collect demographic information such as age, gender, income, education, and race.

Table 1: Research Constructs

Construct	Scale	Source
Social responsibiliy knowledge	11 items	Chang & Watchravesringkan, 2018
Circular economy knowledge	11 items	Belleasu, Summers, Xu & Pinel, 2007
Environmental knowledge	11 items	Steven, 185
Goal-framing toward circularity	18 items	EU, 2020
Behavior intention to circular consumption	7 items	EU, 2020
Consumer identity	10 items	McNeill & Moore, 2015

Content Validity and Construct Reliability

In the preliminary tests, scales were proven to be internally consistent with Cronbach's alpha ranging from .49-.99. The scales were shown to distinguish constructs and are suitable indicators for the proposed constructs. The reliability test was also conducted with the main survey to test the variables' internal validity and construct reliability. Within sustainability knowledge, external validity (EV) ranged from Cronbach's alpha .494-.960. Goal framing towards circularity ranged from Cronbach's alpha .738-.942 for EV. Behavior intention to circular consumption EV ranged from Cronbach's alpha .713-.784. Finally, within the consumer identity groups EV ranged from Cronbach's alpha .832-.956.

Underlying Assumption and Limitation of Methodology

It is assumed that the information provided by questionnaire participants is accurate. It is possible that participants may have responded inaccurately. The participants may have less interest or intention to participate in circular behaviors as indicated due to external obstacles such as financial resources, knowledge, or product availability. It is assumed that participants answered survey questions to their best and with honesty.

CHAPTER 4

RESULTS

This section begins with demographic information, followed by data analysis. Analysis

for this research included factor analysis, multiple regression, cluster analysis, and ANOVA.

Hypotheses testing is included in this chapter.

Sample Characteristics

The sample included 299 usable responses. However, due to a technological error only

230 participants recorded their age and gender. Of these 230 responses, the majority were ages

26-42 (n = 124, 53.91%) and 18-25 (n = 78, 33.91%) and female (n = 150, 65.22%). When

including all 299 responses, the majority of the population were Caucasian (n = 211, 70.57%)

had completed a bachelor's degree (n = 135, 45.30%) and had a monthly income of less than

$500 per month ($n$ = 89, 29.77%) or $1,001-$2,000 per month (n = 89, 29.77%).Furthermore,

the majority of the sample had reported shopping for fast fashion brands H&M (n = 120), Shein

(n = 81), Forever 21 (n = 72), and Zara (n = 51).

Table 2: Sample Data Demographics

Demographics		Subsamples		Total	
		n	%	n	%
Gender	Male	71	30.87	230	99.93
	Female	150	65.22		
	Other	6	2.61		
	I prefer not to say	3	1.30		
Age	18-25	78	33.91		
	26-41	124	53.91		
	42-57	21	9.13		
	58 or older	7	3.04		

(table continues)

Demographics		Subsamples		Total	
		n	%	n	%
Ethnicity	Caucasian	211	70.75	230	99.84
	African-American	17	5.69		
	Latino or Hispanic	34	11.37		
	Asian	28	9.36		
	Native American	0	0.0		
	Other	5	1.67		
	I prefer not to say	3	1.0		
Education	Some High School	2	0.67	298	99.99
	High School	89	29.87		
	Bachelor's degree	135	45.30		
	Master's degree	42	14.09		
	Ph.D or higher	8	2.68		
	Trade school	13	4.36		
	I prefer not to say	9	3.02		
Monthly Income	Less than $500	89	29.77	290	97.0
	$501-$1,000	78	26.09		
	$1,001-$2,000	89	29.77		
	$2,001-$3,000	29	9.70		
	I prefer not to say	5	1.67		

Statistical Analysis

Several statistical analyses were used, including frequency distribution, descriptive statistics, factor analyses, multiple regression analyses, cluster analysis, and ANOVA using Statistical Package for Social Sciences (SPSS) version 28.0. In particularly, the multi-item scales were subjected to a series of principle component factor analyses with varimax or quartimax rotations to identify the underlying dimensions of variables. Reliability measures the consistency of variables developed from scales used as predictor components (Patten, 2009). Cronbach's alpha is an index of the reliability of the "underlying construct," which determines

the internal consistency (Santos, 1999). In summary, the scales were internally consistent, able to discriminate among constructs, and are adequate indicators of the theoretical variables.

Multiple regression analysis was conducted using the enter method to test the hypothesized relationships of H1 through H7. The Variance Inflation Factor (VIF) was calculated to check redundancy among the variables to detect multi-collinearity. All variance factor (VIF), a common cutoff threshold of a value, is lower than 1.1, indicating that multi-collinearity was not affected.

The study examined intra-group homogeneity and intergroup heterogeneity using K-Means cluster analysis (Weaver et al., 2018) to segment the consumer groups according to consumers' attitudinal identity regarding sustainability. ANOVA was used to analyze the means differences among the clusters regarding sustainable knowledge, goal-framing toward circularity, and behavioral intention toward circular consumption to test H8a, H8b, and H8c.

Underlying Dimensions of Research Variables: Factor Analysis

A series of principal component factor analyses with varimax rotations revealed the three underlying dimensions of sustainable knowledge as social responsibility, circular economy, and environmental knowledge. The goal-framing toward circularity is identified as four factors: pro-environment goal, reliable communication, circular product design, and product quality. Behavior intention to circular consumption was composed of two dimensions of purchasing circular fashion products and five Rs behaviors. Lastly, consumer identity revealed three factors: fashion-conscious, family /friends attached, and socially networked groups.

Sustainability Knowledge

Factor analysis was conducted by using 33 items of sustainability knowledge. The factor analysis distinguished three dimensions organized as social responsibility, circular economy, and environmental knowledge, with a 60.723% total explained variance. In addition, Cronbach's alphas were acknowledged as .93, .86, and .66, respectively, which proposed the internal consistency of items within each factor.

Social Responsibility Knowledge had a standard deviation ranging from .668-.784 and a mean ranging from 3.69-4.29. Circular Economic Knowledge had a standard deviation ranging from .732-.873 and a mean ranging from 3.70-3.99. Thirdly, Environmental Knowledge had a standard deviation of .618-.682 and a mean ranging from 3.94-4.12. Participants had the most knowledge of environmental sustainability topics. As previously discussed, H&M and other fast fashion brands have implemented sustainability initiatives into their business models many of which address environmental concerns. This may contribute to the emphasis on environmental sustainability that participants experienced.

Table 3: Factor Analysis for Sustainability Knowledge

			FL	EV (α)
Social Resposibility Knowledge	CSR 1	Maintaining or improving the health of workers	.884	28.47 % (.931)
	CSR 2	Fair wages	.837	
	CSR 3	Equality in the labor force	.830	
	CSR 4	Safety for workers	.816	
	CSR 5	Ensuring worker wellness	.809	
	CSR 6	Fair labor practices	.792	
	CSR 7	Human Rights	.499	
	CEK 1	Use fewer resources	.749	

(table continues)

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			FL	EV (α)
Circular Economic Knowledge	CEK 2	Implement used clothing collection	.707	
	CEK 3	Regenerate natural system	.698	21.86 % (.859)
	CEK 4	Align clothing design and recycling processes	.693	
	CEK 5	Design products that can constantly be used	.683	
	CEK 6	Reduce plastic microfibers	.671	
	CEK 7	Make clothing care more accessible	.574	
	CEK 8	Increase clothing utilization	.547	
Environmental Knowledge	ENK 1	Air pollution occurs during common dye processes	.777	10.40 % (.660)
	ENK 2	Chemicals during the manufacturing of synthetics fibers	.745	
	ENK 3	Dyeing and finishing processes use lots of water	.714	

FL (Factor Loadings) EV(Explained variance) α (Cronbach's α)

Goal-Framing toward Circularity

The goal-framing was identified as four dimensions: pro-environmental, reliable communication, circular product design, and product quality goals, with a 79.99% total explained variance. Cronbach's alphas were ranged from .94 to .74, which proposed the internal consistency of items within each factor.

Table 4: Factor Analysis for Goal-Framing Toward Circularity

			FL	EV (α)
Pro-environ-mental Goal	PEG 1	Fast fashion brand offers rental services	.879	28.81% (.942)
	PEG 2	Fast fashion brand offers trade-in services for credit/discount	.819	
	PEG 3	Fast fashion brand impiments efficient energy use	.769	
	PEG 4	Fast fashion brand offers repair or alteration services	.767	
	PEG 5	Fast fashion products can be recycled in the future	.695	
	PEG 6	Fast fashion products are made from recycled materials	.686	
	PEG 7	Fast fashion brand offers lifespan/repair info with vintagage/secondhand	.673	

(table continues)

			FL	EV (α)
Reliable Communi-cation Goal	REC 1	Fast Fashion brand has banned destruction of unsold goods	.870	25.71% (.929)
	REC 2	Fast Fashion brand has reduced its carbon footprint	.832	
	REC 3	Fast Fashion brand has committed to no greenwashing	.823	
	REC 4	Fast Fashion brand uses third party sustainability certifications	.787	
	REC 5	Fast Fashion discloses any potentially harmful chemicals used	.624	
Product Design Goal	PDG 1	Fast Fashion product can be custom made to fit	.916	13.53% (.775)
	PDG 2	Fast Fashion product can be tailored to fit perfectly	.860	
	PDG 3	Fast Fashion product can be redesigned or upgraded	.552	
Product Quality Goal	PQG 1	Fast Fashion product is high quality/timless designs	.854	11.88 % (.738)
	PQG 2	Fast Fashion product is durable and can be repaired and reused	.810	

FL (Factor Loadings) EV(Explained variance) α (Cronbach's α)

Behavior Intention to Circular Consumption

It was identified as 5 Rs (recycle, reuse, repair, resell, and rent) and purchasing circular

fashion products with a 61.04 % total explained variance. Cronbach's alphas were .70 and .58,

which showed the internal consistency of items within each factor.

Table 5: Factor Analysis for Behavior Intention to Circular Consumption

			FL	EV (α)
5 Rs	5R 1	Repair, redesign or upcycle apparel products	.819	34.14% (.704)
	5R 2	Purchase secondhand or vintage products	.791	
	5R 3	Rent, borrow, or trade apparel	.740	
Purchase circular products	PCP 2	Purchase fair and ethical products	.802	26.90% (.582)
	PCP 3	Purchase apparel that is high quality/timeless design	.752	
	PCP 5	Purchase custom made apparel/products/accessories	.608	

FL (Factor Loadings) EV(Explained variance) α (Cronbach's α)

Consumer Identity

It was identified as social-media oriented, sacrifice, self-consumer factors with a 72.26 %

total explained variance. Cronbach's alphas were ..84, .83, and .96, which showed the internal consistency of items within each factor.

The first factor, social media-oriented identity, showed high intent to partake in circular purchasing fashion and utilize the 5Rs model. On the other hand, the third factor, self-identity, showed a likeliness to partake in 5R behaviors but did not show high intent to purchase circular fashion. This further supports the possibility that trend-focused self consumers are interested in 5R behaviors, such as repair and refurbishment, as it is a current trend. Social media consumers are highly likable to purchase circular fashion and partake in 5R behaviors, while Self consumers have a significantly reduced interest in circularly.

While three consumer identity types occurred in the study, these consumer identities were not directly matched to the consumer identities proposed by McNeill and Moore in 2015. The factor analysis outcomes showed that consumer identity of self and social aligned with this previous research. The self-consumers were focused on current trends and styles and identified as fashion-conscious consumers. Social consumers strongly value their friends and family's opinions of them and would avoid certain behaviors if this were to affect their perceptions of them negatively. There was no sacrifice identity in this analysis. This is due to sacrificing consumers not purchasing fast fashion products and avoiding consumption. All participants in the study had purchased at least one fast fashion item within the past six months. The novel identity was social-media-oriented consumers. They greatly valued their online social media presence by valuing interactions on their posts and the opinions of their social media followers. These individuals indicated they would avoid certain behaviors if they affected how those on social media viewed them.

Table 6: Factor Analysis of Consumer Identity

			FL	EV (α)
Social-media Oriented Identity	CIDEN 1	People interacting with social media posts is important	.887	25.73% (.837)
	CIDEN 2	Avoid certain behaviors if it affects friends' opinions	.837	
	CIDEN 3	I care about what people on social media think	.699	
Social Identity	CIDEN 4	I care about my friends' opinions of me	.911	24.66 % (.832)
	CIDEN 5	I care about my family's opinion of me	.852	
	CIDEN 6	Avoid behaviors if they affect my family's opinion of me	.690	
Self Identity	CIDEN 7	I care product is custom made to fit	.916	21.87 % (.956)
	CIDEN 8	I care products can be tailored to fit perfectly	.860	
	CIDEN 9	I care product can be redesigned or upgraded	.552	

FL (Factor Loadings) EV(Explained variance) α (Cronbach's α)

Hypothesis Testing: Multiple Regression Analysis

A series of multiple regression analyses were conducted adopting the enter method that established each independent variable's contribution to the regression models to test the hypothesized relationships of H1 through H7. As a result, four hypotheses (H1b, H2a, H6a, and H7a) from fourteen were supported, while the rest of the hypotheses were rejected (Table 7).

H1a supported that if consumers frame their attitudinal goal toward pro-environmental movement (β = .138, $p < .05$), they are more intent to six Rs behaviors [F = 2.826, $p < .05$, R^2 = .142]. Consumers' goal framing toward transparent/reliable communication (β = .42, p < .01) positively impact their purchasing circular fashion product [F = 3.302, $p < .05$, R^2 = .173]. Thus, H2a was supported. H6a and H7a were supported if consumers' circular economy knowledge (β = .435, p < .01) and environmental knowledge (β = .33, p < .05) would enhanced, they intent to buy circular products from fast fashion brands [F = 5.127, $p < .01$, R^2 = .283].

Most fast-fashion brands still release hundreds, sometimes even thousands, of new products each day. Moreover, consumers are aware that excessive consumption causes irreversible damage to the environment and supply chain workers through production methods and landfill waste. Regrettably, fast fashion consumers are far behind in implementing their knowledge into goal-framing and circular behaviors. Nevertheless, the results provide marketing insights emphasizing how circularity movements of fast-fashion brands communicate with their target customer with transparent and reliable information about circular economy and environmental knowledge promotions.

Table 7: The Results of Multiple Regression Analysis for Hypotheses

		Purchasing Circular Products	6%s
Goal Framing Attitude	H1: Proenvironmental	n/s	**.138*** H1b supported
	H2: Transparent Communication	**.416**** H2a supported	n/s
	H3: Circular Product Design	n/s	n/s
	H4: Product Quality	n/s	n/s
	R^2	.248	.220
	Adjusted R^2	.173	.142
	F	**3.302***	**2.826***
Sustainability Knowledge	H5: CSR	n/s	n/s
	H6: Circular Economy	**.435**** H6a supported	n/s
	H7: Environmental	**.333*** H7a supported	n/s
	R^2	.283	.139
	Adjusted R^2	.283	.072
	F	**5.127****	2.092

**p < .05; ****p < .001; n/s = not significant.

Consumer Identity Groups: Cluster Analysis and ANOVA

The study employed K-Means cluster analysis to classify fast-fashion consumers by their consumer identity regarding circular fashion attitude. K-Means cluster analysis is appropriate for determining the number of clusters based on selected variables in exploratory research where the correct number of clusters is unknown (Fredline, 2012). The number of clusters in this study was determined based on three identity factors (social media orientation, sacrifice, and self-identity) for engaging in their circular fashion. The three cluster solution was the most significantly differentiated based on an assessment of cluster size, determination of three-factor scores comparison, and ANOVA test among the clusters (Figure 2).

ANOVA

| | Cluster | | Error | | | | | Distances between Final Cluster Centers | | |
	Mean Square	df	Mean Square	df	F	Sig.	Cluster	1	2	3
Social Media	12.928	2	.418	297	30.919	.000	1		2.062	1.976
Sacrifiece	10.586	2	.532	297	19.885	.000	2	2.062		2.270
Self	6.635	2	.725	297	9.149	.001	3	1.976	2.270	
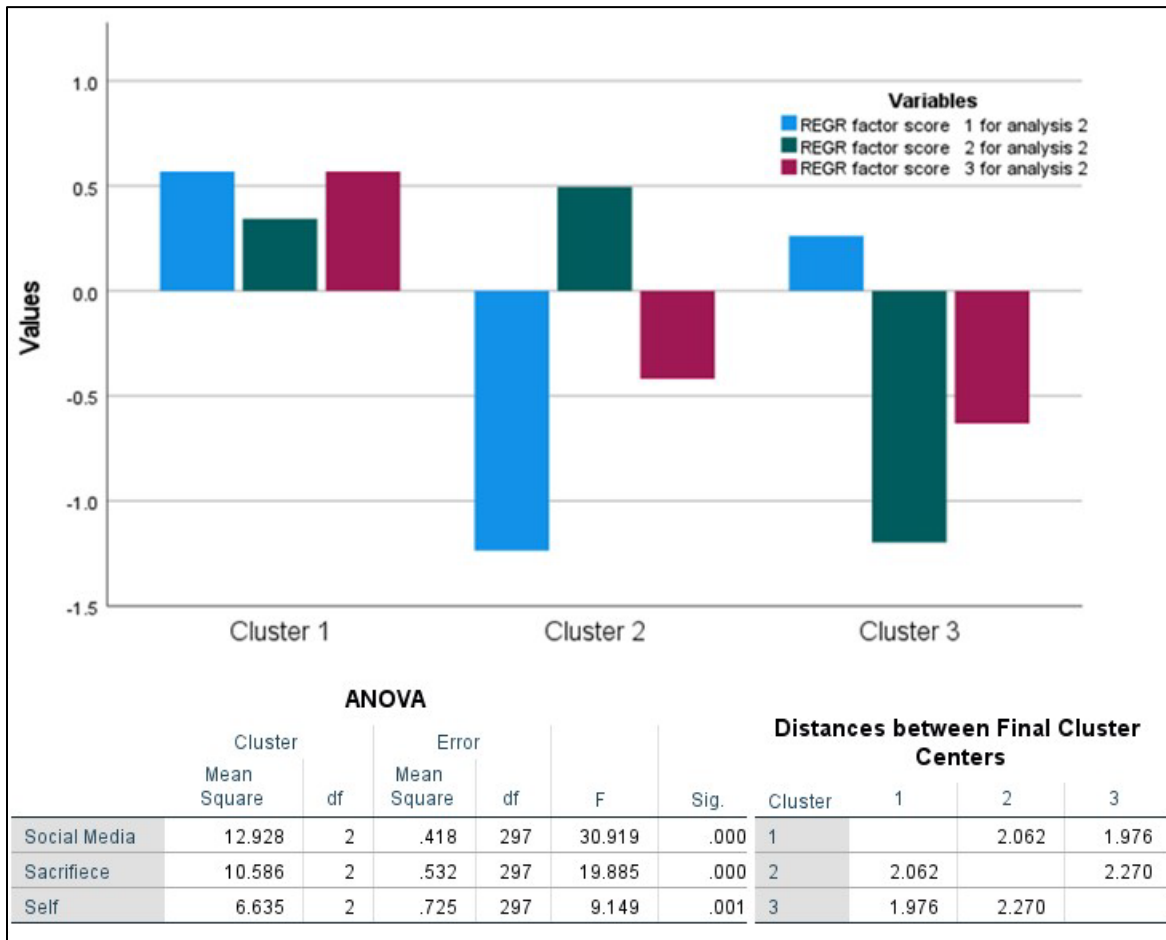
Figure 2: Clusters' comparison of three factors' standardized regression score

Identifying Consumer Groups

One-way ANOVA was conducted to identify the differences among the three clusters regarding their identity relating to circular fashion. This study used the Turkey HSD procedure for the posthoc analysis; this procedure is considered the appropriate analysis when the size of the clusters is unequal (Field, 2009). As shown in Table 8, 47.7 % (*n* = 142) of the respondents were classified into Cluster 1, whose members showed a high or above-average score in all three factors: fashion-conscious, family/friend attached, and socially-networked identity. In addition, the group's score was positive in all identity factors compared to other groups. Therefore, the cluster was labeled an "influential circular fashion group." Cluster 2 accounted for one-quarter of the sample (25 %, *n* = 75) that displayed negative identity for fashion-conscious and socially-networked factors but had a positive score only on family/friends attached identity. This cluster was labeled the "social group." Cluster 3 (27.3 %, *n* = 82), whose members had a very negative identity regarding the social factor compared to other clusters and mixed (positive in social media but negative in self) identity factors. Therefore, Cluster 3 was labeled as the "perplexing self" group.

Table 8: Mean Difference of Circular Economy Knowledge among Three Clusters

						95% Confidence Interval for Mean			
		N	Mean	Std. Deviation	Std. Error	Lower Bound	Upper Bound	Minimum	Maximum
Circular Economy Knowledge	1	142	4.3274	.55688	.12152	4.0739	4.5809	3.00	5.25
	2	75	4.3864	.58485	.17634	3.9935	4.7793	3.38	5.00
	3	82	3.6875	.58509	.16890	3.3158	4.0592	3.00	5.00
	Total	299	4.1676	.63277	.09539	3.9752	4.3600	3.00	5.25

Descriptives

		Sum of Squares	df	Mean Square	F	Sig.
Circular Economy Knowledge	Between Groups	3.829	2	1.914	5.862	.006
	Within Groups	13.388	297	.327		
	Total	17.217	299			

ANOVA

(table continues)

Descriptives								
		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
Attitude toward Product qualitiy goal	1	142	4.8333	1.01653	.22183	4.3706	5.2961	3.00	6.00
	2	75	4.4091	1.06813	.32205	3.6915	5.1267	3.50	6.00
	3	82	3.5833	1.06244	.30670	2.9083	4.2584	1.00	5.00
	Total	299	4.3864	1.14559	.17270	4.0381	4.7347	1.00	6.00

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
Attitude toward Product quality goal	Between Groups	11.939	2	5.970	5.501	.008
	Within Groups	44.492	297	1.085		
	Total	56.432	299			

Differences in Sustainability Knowledge Perception

One-way ANOVA analysis examined differences in sustainability knowledge among three consumer groups. A significant difference was only in circular economic knowledge perception upon ANOVA test (F = 5.862, sum of squares = 3.829, p < .01). In addition, the Tukey HSD multiple comparisons revealed a significant difference between Groups 1 and 2 versus Group 3. Cluster 1 (active circular group) and Cluster 2 (social group) had the highest means of M = 4.43 and 4.39, respectively. On the other hand, Cluster 3, the perplexing self group, had the lower means score of 3.69. Thus H8b is supported only from a circular economic knowledge perspective. Nevertheless, active circular and social groups are knowledgeable in circular economy information, which suggests the education of economic benefit from circularity would be driving forces to motivate fast-fashion consumers to advocate the circularity application in their business.

Differences in Goal-Framing

One-way ANOVA analysis examined substantial differences in goal-framing among three consumer groups. A significant difference is only in product quality upon ANOVA (F = 5.501,

sum of squares = 11.939, p < .01) test. In addition, the Tukey HSD multiple comparisons

revealed a significant difference between Groups 1 and 2 versus Groups 2 and 3. Cluster 1

(active circular group) had the highest means of 4.83, but Cluster 3 (perplexing self group) had a

lower score of 3.58. Cluster 2 (social group) is bewildered into two groups with a mean of 4.41.

Therefore H8a is supported only by the toward product quality goals. Furthermore, it implies an

excellent product positioning idea for the fast-fashion brand, emphasizing the quality of the

product focusing on durability and sufficient size and fit.

Differences in Behavior Intention to Circular Consumption

One-way ANOVA analysis examined substantial differences in behavior intention to

circular consumption among three consumer groups. A significant difference is only in the

purchase intention of circular fashion products upon ANOVA test (F = 3.572, sum of squares =

8.280, p < .05).

Table 9: Mean Difference of Behavior Intention to Purchase Circular Fashion Products among Three Clusters

Descriptives								
					95% Confidence Interval for Mean			
		N	Mean	Std. Deviation	Std. Error	Lower Bound	Upper Bound	Minimum	Maximum
Purchase Circular	1	142	4.6571	.82497	.18002	4.2816	5.0327	3.00	6.00
Fashion Product	2	75	4.0364	1.39662	.42110	3.0981	4.9746	1.80	6.00
	3	82	3.6500	1.14455	.33040	2.9228	4.3772	2.20	6.00
	Total	299	4.2273	1.13923	.17175	3.8809	4.5736	1.80	6.00

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
Purchase Circular	Between Groups	8.280	2	4.140	3.572	.037
Fashion Product	Within Groups	47.527	297	1.159		
	Total	55.807	299			

The Tukey HSD multiple comparisons revealed a significant difference between Groups 1 and 2

versus Groups 2 and 3. Cluster 1 (active circular group) had the highest means of 4.66, while

Cluster 3 (perplexing self group) had a lower score of 3.65. Cluster 2 (social group) is bewildered

into two groups with a mean of 4.03. Therefore, H8c is supported only by the purchase

intention of circular fashion products. There is an opportunity to target the active circular group

of a larger body of Gen Z consumers by enhancing product quality and communicating reliable

circular economic knowledge. It is crucial to explore the circularity model for the fast-fashion

brand and how they communicate transparent and reliable information about circular

economic knowledge.

CHAPTER 5

DISCUSSION AND IMPLICATIONS

Advocates for sustainability argue that the future of fashion is circular as textile waste grows with the potential to create irreversible damage to the planet and population. Textile waste equates to one dump truck of textiles disposed into landfills every second, with clothing waste estimated to weigh as much as the world's population by 2025 (Alexander, 2019). Industry professionals and academic scholars strive to improve the current linear fashion system to challenge the status quo and generate a change to circularity in business models and consumer behavior.

The study found that framing the goals of a pro-environmental and transparent/reliable communication is critical to motivating circularity in fast fashion consumption and buying. The study also found that circular economy and environmental knowledge motivate the purchase intention of circular fast fashion products and 5Rs behaviors. As consumers become more knowledgeable of circular and environmental sustainability, their intention to participate in these behaviors increases. Regretfully, only four hypotheses among 14 were supported, implying that fast fashion consumers are far behind in implementing their knowledge into goal-framing and circular behaviors. Nevertheless, the results provide marketing insights emphasizing how circularity movements of fast-fashion brands communicate with their target customer with transparent and reliable information about circular economy and environmental knowledge promotions.

Three consumer identity groups (active circular, social, perplexing self) occurred in the study, but fast fashion consumers have adjusted their identities from McNeill and Moore's

(2015) original perspective. Cluster 1, the active circular consumer group, had the highest mean for all four goal framing goals. They are highly associated with social-media consumers who heavily weighted their online social media presence by appreciating interactions on their posts and the opinions of their social media followers. This group indicated they would avoid certain behaviors if they affected how those on social media viewed them. They are also associated with a circular attitude, simultaneously illustrating their cheerful sacrifice for circularity. Cluster 2, the social consumer, had the second-highest means score for all goal framing except for circular product design. They greatly valued their friends and family's opinions and would avoid certain behaviors if this negatively affected their perceptions. Finally, Cluster 3, the perplexing self-consumer, had the second-highest mean for circular product design while having the lowest mean for the remaining pro-environmental, reliable communication, and product quality goals. While self-consumers were focused on current trends and styles and identified as fashion-conscious consumers in McNeil and Moore's study (2015), fast-fashion consumers are perplexed between circularity and fashion-conscious identity.

CHAPTER 6

LIMITATIONS AND FUTURE RESEARCH RECOMMENDATIONS

The study comprehensively analyzes goal-framed towards circularity and sustainable knowledge and their effects on behavioral intention toward circular consumption. The study also compared a series of consumer groups while identifying a novel consumer-type notated as the Social consumer. By validating several hypotheses, this study provides a platform for further research and analysis of these topics. However, there are some limitations to this research.

While this study examines sustainable knowledge, goal-framing, behavioral intention, and consumer identity, the findings may not be generalizable due to the sample size. The study employed approximately 299 usable survey responses and can only represent a portion of the population. Future research may require employing a larger sample size to test the variables. Further research may also study a more extensive age range of participants to analyze behaviors correlated to diverse generations potentially. Additional research may study only one generation, such as Generation Z or Millennials, to better understand these significant generational differences.

Secondly, the study is also limited to consumers that have purchased fast fashion within the past six months. This behavior may have been affected by COVID-19 concerns or restrictions. Government mandates requiring the closure of stores, lack of social events or outings, and supply chain difficulties may have reduced the likeliness of purchase of new apparel for many consumers. Further research could expand this requirement within the past twelve months to consider more consumers and account for the recent economic recovery.

Despite these limitations, the study provides a foundation for various directions for future

research.

APPENDIX

SURVEY QUESTIONNARE

Consent Form

TITLE OF RESEARCH STUDY: Integrative Theories for Exploring Drivers of Pro-Environmental Behaviors for Fast Fashion Consumption

RESEARCH TEAM: Kathy Wilbourne, graduate student, is conducting this research in pursuit of thesis. This research is being conducted under the supervision of Dr. HaeJung Kim, department of Merchandising, (940) 565-4109, haejung.kim@unt.edu. You are being asked to participate in a research study. Taking part in this study is voluntary. The investigators will explain the study to you and will any answer any questions you might have. It is your choice whether or not you take part in this study. If you agree to participate and then choose to withdraw from the study, that is your right, and your decision will not be held against you.

You are being asked to take part in a research study about sustainable consumption behaviors and sustainability knowledge. This research is being funded by a data collection fund provided by UNT. Your participation in this research study involves answering survey questions about sustainability topics and consumption behaviors. More details will be provided in the next section.

You might want to participate in this study if you want to contribute to knowledge of consumer sustainability and fast fashion consumption behaviors. However, you might not want to participate if you do not have the time to answer the survey questions. You may choose to participate in this research study if you are between the ages of 18-25 and identify as members of the Gen Z generation and have purchased apparel in the past six months.

This study has risks to confidentiality similar to everyday use of the Internet and minor emotional distress related to the questions asked. To minimize risks to confidentiality, data will be stored in password protected files and made accessible to members of the research team only. This study is not expected to be of direct benefit to you, but the findings of the study are expected to add to the body of knowledge in academic studies. The retail industry may utilize the results to better serve consumers in accordance with their experiences.

DETAILED INFORMATION ABOUT THIS RESEARCH STUDY: The following is more detailed information about this study, in addition to the information listed above.

PURPOSE OF THE STUDY: The purpose of this study is to examine how consumer knowledge of sustainability influences how individuals consume fast fashion.

TIME COMMITMENT: Participation in this study is expected to last approximately 20-30 minutes.

STUDY PROCEDURES: You will be asked to answer a series of online survey questions about your sustainability knowledge and consumption behaviors. The first section will contain a screening question to confirm you are age is 18-25. The next section will ask you about your sustainability knowledge, consumption behaviors, and social circle influence. The final section will ask your demographic information.

POSSIBLE BENEFITS: This study is not expected to be of direct benefit to you, but we hope to learn more about sustainable fast fashion consumption. The retail industry may use the results to better serve consumers. Additionally, the findings of the study are expected to add to the body of knowledge in academic studies.

POSSIBLE RISKS/DISCOMFORTS: This study has risks to confidentiality similar to everyday use of the internet and minor emotional distress related to the questions asked. However, if you do experience any discomfort, please inform the research team at (870) 283-1146 or Kathy.wilbourne@my.unt.edu.

If you experience excessive discomfort when completing the research activity, you may choose to stop participating at any time without penalty. The researchers will try to prevent any problem that could happen, but the study may involve risks to the participant which are currently unforeseeable. UNT does not provide medical services, or financial assistance for emotional distress or injuring that might happen for participating in this research. If you need to discuss your discomfort further, please contact a mental health provider, or you may contact the researcher who will refer you to the appropriate services. Remember that you have the right to withdraw any study procedures at any time without penalty, and may do so by informing the research team at Kathy Wilbourne at Kathy.wilbourne@my.unt.edu and Dr. Kim at

haejung.kim@unt.edu. If your need is urgent, helpful resources include the SAMHSA National Helpline at 1-800-662-4357.

Participating in research may involve a loss of privacy and the potential for a breach in confidentiality. Study data will be physically and electronically secured by the research team. As with any use of electronic means to store data, there is a risk of breach of data security.

COMPENSATION: Compensation for participation is not being provided by the University of North Texas researchers. Upon survey completion, you may be compensated in the amount previously agreed upon when you started the survey by your Prolific Panel Provider. Any compensation is directly provided by your Prolific Panel Provider. If you choose not to complete part or all of study procedures, or if you fail attention checks, you may not be compensated for participation. If you have questions or would like to discuss issues regarding your compensation, please contact your Prolific Panel Provider directly. You may also discuss this with the research team at Kathy.wilbourne@my.unt.edu and haejung.kim@unt.edu.

CONFIDENTIALITY: Confidentiality will be maintained to the degree possible given the technology and practices used by the online survey company, Qualtrics. Your participation in this online survey involves risks to confidentiality similar to a person's everyday use of the internet. For details, please see the following link regarding Qualtrics privacy policy: https://www.qualtrics.com/privacy-statement/

Efforts will be made by the research team to keep your personal information private and disclosure will be limited to people who have a need review this information. All paper and electronic data collected from this study will be stored in a secure location on the UNT campus and/or a secure UNT server for at least three (3) years past the end of this research. All research records will be saved in a password protected computer in the principal investigator's campus office. Research records will be labeled with a code and the master key linking names with codes will be maintained in a separate and secure location.

Your participation in this study is confidential.

The results of this study may be published and/or presented without naming you as a participant. The data collected about you for this study may be used for future research studies that are not described in this consent form. If that occurs, an IRB would first evaluate the use of any information that is identifiable to you, and confidentiality protection would be maintained.

While absolute confidentiality cannot be guaranteed, the research team will make every effort to protect the confidentiality of your records, as described here and to the extent permitted by law. In addition to the research team, the following entities may have access to your records, but only on a need-to-know basis: the U.S. Department of Health and Human Services, the FDA (federal regulating agencies), the reviewing IRB, and sponsors of the study.

CONTACT INFORMATION FOR QUESTIONS ABOUT THE STUDY: If you have any questions about the study you may contact Kathy Wilbourne at (870) 283-1146 or Kathy.wilbourne@my.unt.edu or Dr. HaeJung Kim at (940) 565-4109 or haejung.kim@unt.edu. Any questions you have regarding your rights as a research subject, or complaints about the research may be directed to the Office of Research Integrity and Compliance at 940-565-4643, or by email at untirb@unt.edu.

Please select one of the following

○ I have read the consent information, confirm that I am 18 years or older, and agree to take part in the research

○ I do not agree to take part in this research

Fast Fashion Brands

Which of the following brands have you shopped from in the past six months?

- ☐ Zara
- ☐ H&M
- ☐ Forever 21
- ☐ UNIQLO
- ☐ Shein
- ☐ TopShop
- ☐ Pretty Little Thing
- ☐ Hollister
- ☐ American Eagle Outfitters
- ☐ Urban Outfitters
- ☐ Missguided
- ☐ ASOS
- ☐ Nasty Gal
- ☐ Fashion Nova
- ☐ Victoria's Secret/Pink
- ☐ Abercrombie & Fitch
- ☐ [_____] Other

Sustainability Knowledge

For the following topics, please rate each statement on a five-point scale with one equating to strongly disagree and five equating to strongly agree

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I am familiar with the concept of environmental sustainability	◯	◯	◯	◯	◯
I am confident in my knowledge of environmental sustainability concepts in relation to the clothing industry	◯	◯	◯	◯	◯
Within my social circle I am the expert on environmental sustainability concepts	◯	◯	◯	◯	◯
I do not know much about environmental sustainability	◯	◯	◯	◯	◯

For the following topics, please rate each statement on a five-point scale with one equating to strongly disagree and five equating to strongly agree

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Chemical pollutants are produced during the manufacturing of synthetic fibers such as polyester	○	○	○	○	○
Chemical pollutants are not produced during the processing of natural fibers such as cotton	○	○	○	○	○
Federal and local standards for cleaner air and water have not yet been mandated for textile companies	○	○	○	○	○
Air pollution can occur during common dye processes	○	○	○	○	○
Dyeing and finishing processes use substantial amounts of water	○	○	○	○	○
Fibers such as wool cannot be commercially recycled	○	○	○	○	○
Disposable diapers have significantly contributed to the amount of textile products discarded in landfills	○	○	○	○	○
Special finishes on fabrics can create problems when recycling	○	○	○	○	○
Phosphate-containing detergents can create water pollution	○	○	○	○	○

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Natural fibers are usually biodegradable	○	○	○	○	○
The use larger quantities of natural fibers will significantly decrease energy consumption	○	○	○	○	○

For the following topics, please rate each statement on a five-point scale with one equating to strongly disagree and five equating to strongly agree

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I am familiar with the concept of the circular economy	○	○	○	●	○
I am confident in my circular economy concepts in relation to the clothing industry	○	○	○	●	○
Within my social circle I am the expert in circular economy concepts	○	○	●	○	○
I do not know much about the circular economy	○	●	○	○	○

For the following topics, please rate each statement on how much each topics relates to the circular economy. Use a five-point scale with one equating to strongly disagree and five equating to strongly agree

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Design out waste	○	○	○	○	○
Increase clothing utilization	○	○	○	○	○
Increased clothing durability	○	○	○	○	○
Make clothing care more accessible	○	○	○	○	○
Reduce plastic microfibers	○	○	○	○	○
Align clothing design and recycling processes	○	○	○	○	○
Use fewer resources	○	○	○	○	○
Implement used clothing collection	○	○	○	○	○
Reflect the true cost of materials and production into pricing	○	○	○	○	○
Design products that can constantly be used	○	○	○	○	○
Regenerate natural system	○	○	○	○	○

For the following topics, please rate each statement on a five-point scale with one equating to strongly disagree and five equating to strongly agree

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I am familiar with the concept of social sustainability	O	O	O	O	O
I am confident in my knowledge of social sustainability concepts in relation to the clothing indsutry	O	O	O	O	O
Within my social circle I am the expert on social sustainability concepts	O	O	O	O	O
I do not know much about social sustainability	O	O	O	O	O

For the following topics, please rate each statement on how much each topics relates to social sustainability. Use a five-point scale with one equating to strongly disagree and five equating to strongly agree

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Reducing risk of injury in production facilities	O	O	O	O	O
Employee empowerment	O	O	O	O	O
Infrastructure	O	O	O	O	O
Fair labor practices	O	O	O	O	O
Maintaining or improving the health of workers	O	O	O	O	O
Equality in the labor force	O	O	O	O	O
Fair wages	O	O	O	O	O
Human rights	O	O	O	O	O
Governance and policy updates	O	O	O	O	O
Ensuring worker wellness	O	O	O	O	O
Safety for workers	O	O	O	O	O

Consumer Identity

Respond to each of the following statements through the scale ranging from strongly disagree to strongly agree

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I care about my family's opinion of me	○	○	○	○	○
I care about my friends/ opinions of me	○	○	○	○	◎
I care about what people on social media think about me	○	○	○	○	◎
Having people interact with my posts on social media through likes or comments is important to me	○	○	○	◎	○
I would avoid certain behaviors if it affect my friends' opinions of me	○	○	◎	○	○
I would avoid certain behaviors if it affected my social media follower's opinions of me	○	◎	○	○	○

Please consider the brands you stated you have shopped at within the past six months when answer the following question. Measured using a five point scale with one equating to never and five equating to always, when shopping for apparel how often do you purchase each type of clothing?

	Never	Rarely	Neutral	Sometimes	Often
Current Trends - defined as items worn or in style for very short periods of time	◯	◯	◯	◯	◯
Current Styles - defined as those worn by many individuals but will not be in style indefinitely	◯	◯	◯	◯	◯
Classic Styles - defined as staple pieces that remain in style indefinitely	◯	◯	◯	◯	◯

For the following topics please rate each statement from strongly disagree to strongly agree

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I am a very fashion-conscious person	◯	◯	◯	◯	◯
I don't mind being out of style	◯	◯	◯	◯	◯
What others are wearing does not affect the clothing I purchase	◯	◯	◯	◯	◯

Seven

Please consider the brands you stated you have shopped at within the past six months when answer the following question. When purchasing new apparel items, how important are the following topics?

	Not Important At All	Not Very Important	Neutral	Somewhat Important	Very Important
Product can be customized (ex: Louis Vuitton offering monograms on their bags and wallets)	○	○	○	○	○
Products can be tailored to fit perfectly	○	○	○	○	○
Product is custom made to fit	○	○	○	○	○
Product is durable and can be repaired and reused	○	○	○	○	○
Product can be redesigned or upgraded	○	○	○	○	○
Product is made from recycled materials	○	○	○	○	○
Product can be recycled in the future	○	○	○	○	○
Brand offers repair or alteration services	○	○	○	○	○
You receive information on the products such as lifespan and repair ability when purchasing vintage or second hand apparel	○	○	○	○	○
Brand offers rental services where consumers can also rent apparel	○	○	○	○	○
Brand offers trade in services that allow you to trade in apparel	○	○	○	○	○

you to trade in apparel for an incentive such as store credit or discount	○	○	○	○	○
Items are high quality, timeless in design, and can be worn or used more than once	○	○	○	○	○
Disclosure of potential chemicals used in its product	○	○	○	○	○
Created with efficient energy use	○	○	○	○	○
Brand has reduced their carbon and environmental footprints	○	○	○	○	○
Brand has banned the destruction of unsold goods	○	○	○	○	○
Brand has committed to not using green washing	○	○	○	○	○
Brand uses third party sustainability certifications that are unbiased	○	○	○	○	○

Please consider the brands you stated you have shopped at within the past six months when answer the following question. Please indicate how likely you are to participate in the following activities

	Very Unlikely	Unlikely	Neutral	Likely	Very Likely
Purchase custom made apparel or accessories	○	○	○	○	○
Use environmentally friendly products to take care of and clean your products	○	○	○	○	○
Purchase clothing that is high quality and timeless in design	○	○	○	○	○

Please consider the brands you stated you have shopped at within the past six months when answering the following questions. Please indicate how likely you are to participate in the following activities

	Very unlikely	Unlikely	Neutral	Likely	Very Likely
Purchase custom made apparel or accessories	○	○	○	○	○
Use environmentally friendly products to take care of and clean your products	○	○	○	○	○
Purchase clothing that is high quality and timeless in design	○	○	○	○	○
Purchase clothing that is fair and ethical (traditionally produced, artisan crafted, protects animal rights)	○	○	○	○	○
Repair, redesign, or upcycle apparel products	○	○	○	○	○
Rent, borrow, or trade apparel products	○	○	○	○	○
Purchase secondhand or vintage apparel products	○	○	○	○	○

Demographics

Please understand that the following questions are not screening questions. They are only being used to understand the demographics of our survey particpants

What is your gender?

○ Male

○ Female

○ Other

○ Prefer not to say

What is your age?

○ 18-25

○ 26-41

○ 42-57

○ 58 or older

Please identify your ethnicity

○ Caucasian

○ African-American

○ Latino or Hispanic

○ Asian

○ Native American

○ Native Hawaiian or Pacific Islander

○ Other

○ I prefer not to say

Please indicate the highest level of education you have completed

○ Some high school

○ High school

○ Bachelor's degree

○ Master's degree

○ PhD or higher

○ Trade school

○ I prefer not to say

Please indicate your monthly income

○ Less than $500

○ $501-$1,000

○ $1,001-$2,000

○ $2,001-$3,000

○ More than $3,000

○ I prefer not to say

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