The College of New Jersey

Self-Reporting Production Measures of Clothing Waste in Fashion Industry

A Policy to Address the Social Costs and Sustainability Campaigns of the Global Fashion Industry

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Executive Summary:

The objective of this policy is to investigate clothing waste in The United States by addressing the production and disposal cycles of retail companies, as well as to evaluate the integrity and accuracy of common “sustainability” label campaigns that retailers use. The intention is to create a policy that would guide transparency between consumers and clothing retail companies to better equip a sustainability guide through self-reporting production measures. Some of the factors to report would include their percentage of overall production, total number of factories, total sales, use of natural resources and new materials, and remaining inventory after a given production cycle. Secondary motives include raising awareness and interaction with consumers about environmental awareness in clothing and discovering refined methods to decrease clothing waste.

After careful analysis by collecting a production measures chart from notably sustainable clothing firms and a consumer survey on shopping preferences and knowledge of environmental harms in the clothing industry, some results follow that firms and consumers could have a stronger relationship in identifying authentic measures to endorse sustainable clothing that lowers the overall social costs.

Government institutions can also deepen their interaction with clothing firms by appointing specific departments within environmental protection, in order to promote new technology to strengthen supply chain methods of production.

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Policy Proposal

Considering excessive clothing production leads to exacerbating climate change through increased loads of waste in landfills and incinerators, the following policy intends to resolve this externality and to develop transparency in monitoring clothing firms' production designs.

Since clothing manufacturing occurs overseas and is more profitable for retailers to dispose of unsold inventory, the policy's first step to addressing the problem would be to instate mandatory reporting of select companies who meet a certain threshold of clothing production and sales in the United States. Some of the factors to report would include their percentage of overall production, total number of factories, total sales, use of natural resources and new materials, and remaining inventory after a given production cycle.

After collecting select leading US clothing companies' gross profit margin, more data will be collected to consider their overall production procedures, such as considering American Eagle Outfitter's gross profit margin of 29, compared to Ralph Lauren's gross profit margin of 62.1 (Finbox). The policy could focus on United States clothing manufacturing, and then extend to all manufacturers who sell and distribute clothing in the United States.

In relation to mandatory reporting, the second part of the policy would endorse competition and transparency of these retailers' production measures to consumers, whom could choose sustainable brands and consider the effect of cost for environmentally friendly clothing. The policy could serve as an incentive for companies to promote sustainable measures and technology, in order to engage their costumer platform.

The study for this policy will also present a deeper investigation of the history of policy making for the clothing industry and some of the reasons why fast fashion has been successful. There will also be data collection and an overall analysis of the statistics companies make

available right now. A survey of consumers' knowledge of environmental harms in fashion will also present how consumers might be more willing to choose "sustainable brands" for a higher cost, as presented in other purchases.

The policy-making environment will include policymakers focused on landfill waste and creating more efficient, environmentally safe options. Working with retail brands and second-hand stores will also be required in order to gauge their own inventory, surplus, current business models and activity, as well as their production cycle of how often they market new seasons and clothing. As listed on the committees in the U.S. Congress, members participating in small businesses and entrepreneurship and environment and public works could be especially active with this policy as it relates to businesses in retail and their production and distribution effects on the environment.

This policy would affect all states, as it relates to national concern on waste management and clothing necessity. Involved stakeholders include all business retail corporations, perhaps over a certain margin of waste and surplus clothing, as well as second-hand clothing stores; including charities, private companies, and for-profit and nonprofit organizations that handle redistribution of second-hand clothing.

Problem Statement

Clothing retail companies and their violations of social costs and environmental harms due to the high demand for fast, new trends and the competitive nature of the fashion industry has become a large contributor to the US climate change crisis. This situation falls under a negative externality, by permitting clothing companies to overproduce through multiple cycles within a season, their process of handling cheap materials, poor labor conditions, and handling unsold, usable inventory, and most often burning or disposing these clothes to landfills.

In the nature of a private goods policy, in which includes competitive and non-renewable purchased goods such as clothing, the first step to this policy would require mandatory self-reporting initially from US companies that offer their percentage of overall production, total number of factories, total sales, use of natural resources and new materials, and remaining inventory after a given production cycle. Since many clothing industries have the majority of their manufacturing overseas, mandatory correspondence would need to come from the corporate level with American business headquarters, or under agreement to self-report in order to sell these goods to American consumers,

The social cost of clothing companies' actions is a contribution to climate change. Requiring retailers to self-report their production costs, due to their effects on the natural and physical environment is necessary, because social costs, such as harm of carbon emissions, result from unused clothing through harmful gases, overusing water, and polluting waterways through dyes. There is also a social cost to the net materials that are created, even just beginning with several yards of fabric wasted and not properly used to conserve.

Another externality from these companies pertains to how they discard clothing into landfills instead of recycling or repurposing. Excessive clothing production contributes to wasted materials that are burned or added to landfills. Over time, these materials can decompose into methane, increasing the level of air pollution and harm to the environment.

Many retail corporations produce this clothing in a fast fashion network, creating as many as 52 seasons in a year that constantly update their inventory to lower prices, but with low quality and poor production conditions. Increasing production and variety of clothing is an incentive to bring in more costumers more regularly, considering the life expectancy of some of this clothing needs improvement. Usually, in a large factory setting with a high production rate, these companies want to market new styles cheaply rather than customizing old materials. Storage or donating these goods to second hand or marked down retailers, such as TJ Maxx, diminish their branding and mark down the value of the attire. Donating surplus clothing is a deterrent for some luxury retail brands, because it diminishes the exclusivity of their item and decreases the value of their price, so it is not as competitive.

If firms had to change these practices, some costs would be enabling a better predictor of how many sales would be made. Reports say there is a general $400 billion waste in disposed, usable clothing (Reichart, Drew), in which could in turn be invested into new methods to reuse this material. Many companies could also reconsider how they allocate their resources and outsource to various subcontractors and factor in the best, efficient process to source their clothing in a limited area. Most clothing disposal occurs after the presence in retail, so brining the unsold inventory back to manufacturing could be a consideration for reuse. Companies

focusing efforts on the clothing disposal problem is the most efficient way of incorporating sustainable measures to their brands and social costs.

The key decision makers in this process include Congress members participating in committees specializing in small businesses and entrepreneurship as well as environment and public works. They could be especially active with this policy as it relates to businesses in retail and their production and distribution effects on the environment. Members of Congress can help engage companies with clients in their process of distributing information on the products' background. Since this is a national environmental issue, other institutions involved would be clothing companies based in The United States whose clothing make up a certain percentage of their revenue.

In respect to Kingdon's three steams of policymaking (problem, policy, politics), utilizing research, connections with industries, and sampling can often conflict with bureaucratic processing. However, through this policy, there is a direct first step in organizing the reports from the industries involved. This project could be a part of a committee, or rather have its own division formed. It correlates with a bureaucratic agenda, because it recognizes the first steps to organizing an agenda and focusing on an aspect of the issue before dissolving it all at once.

Principle stakeholders within the industry include clothing companies who need to represent their production data but are not in a position to solely reject the policy. Since many top retail companies that market in The United States but are from overseas companies, such as H&M, Uniqlo, and Zara, the self-reporting process would also be required in order to sell their items in The United States. Other stakeholders include consumers who decide on purchasing power of where to shop for clothing and who may opt for more sustainable options. The self-reporting

process will ultimately benefit the consumers in gaining a perspective on the social costs of producing clothes.

The process of making these decisions for this policy begins with addressing which businesses are required to report their excess clothing. Companies included in the research would need to have a certain percentage over 40% of their production and revenue to be allocated from clothing. They would also need to make above three billion dollars in revenue each year, to account for its large impact on the economy and the environment.

Some businesses included in the initial research for the mandatory self-reporting policy include five American companies, American Eagle Outfitters, The Gap, PVH (Calvin Klein, Tommy Hilfiger among notable brands), Ralph Lauren, and Abercrombie & Fitch. These organizations represent some initial findings on the overall gross profit margin and how some companies anticipate their total sales based upon their production.

By initially depicting the revenue and the gross profit margin, this policy process can explore the general profits of a company and how much of their supplies they sell, setting the bar of expectation of their production.

Company Name	Revenue (in billions)	Gross Profit Margin (in percentage)
American Eagle Outfitters	3.854	29
Gap	14.054	46.4
PVH (* includes Calvin Klein, Tommy Hilfiger)	8.113	54.6
Ralph Lauren	5.218	62.1
Abercrombie & Fitch	3.232	58.7

Figure 1: this graph has data collected from Finbox. Represents some primary research on the background of some notable American companies. GPM is the difference of revenue and cost of goods sold, divided by revenue. Further research will include production cost, number of unsold good, and any additional data necessary

As the study continues into the analysis, however, new companies will be introduced on the basis of their sustainability campaigns and high regard for their technological innovation as leaders in sustainability, most of which are European brands. The initial required self-reporting process will also highlight the efforts and successes of sustainable brands, as well as their typical demographic of buyer.

While there were no formal policies on companies reporting their pollution impacts due to overproduction of clothing and how much clothing was left over and how to dispose or repurpose this clothing, some US policies only placed regulations on the type of material and accurate labeling for clothing.

Clothing policy has taken a limited role of interest in the U.S. government, considering it is a widely privatized market, under the jurisdiction and trade with US retailers and foreign companies. Some of the following examples represent concerns that the US government often consider when it comes to the clothing market.

The Federal Trade Commission incorporates seals of approval for environmental production and proper labeling measures for recycled and reusable materials, as well as degradable materials. Most policies have strict regulations on labeling the percentage of the materials, such as “100% cotton,” as well as displaying where the clothing item was made. Other policies in action included a look at the entire supply chain process of efficiency in how many of a product to consider, in relation to its environmental footprint.

While the proposed policy intends to improve labeling, federal legislation has considered offering more leniency on labeling, as represented in a reconsideration of the 2002 Textile and Wool Acts. While this act intended to address all textiles and their percentages used in the production, the US claims that these figures cannot be completely accurate, and thus causes no damage to the consumer in the long run.

The US government is also concerned with basic labeling, such as accounting for country of origin, and caring for the product. However, there is discussion of repealing the Care Labeling Act in 2020, as they state that some of these procedures may be unnecessary and also halt new technology.

The US government has the intentions to cater to large businesses, distributors, and their production cycles rather than the diligence and transparency of the process of supplying these products. Most of their concerns with authorizing stricter change with clothing involves specifying Made in USA claims as well as developing stronger copyright and intellectual property rights for fashion designers.

Other policies in the world tend to focus upon the final stages of production, such as waste management. One study from The Netherlands demonstrates that keeping sustainable materials management as a policy with supply chain measures during the entire process tend to be most effective in developing an efficient process that protects the environment and creates reliable inventory. Maintaining materials throughout the entire process of cultivation and production requires communication between the government and industries, because production of supply chain requires a cohesive plan or strategy; including grants for research, permits, and taxes to facilitate pollution levels.

The supply chain system proves to help reuse textiles by using substitute materials, instead of incarceration or landfills. By recognizing supply chain policies, this proposed policy on self-reporting production costs and revenue can help improve communication and offer strategies on how companies can best manufacture their clothing. Below is a figure from the study that helps represent the intersection of policy measures in environmental clothing and reusable materials.

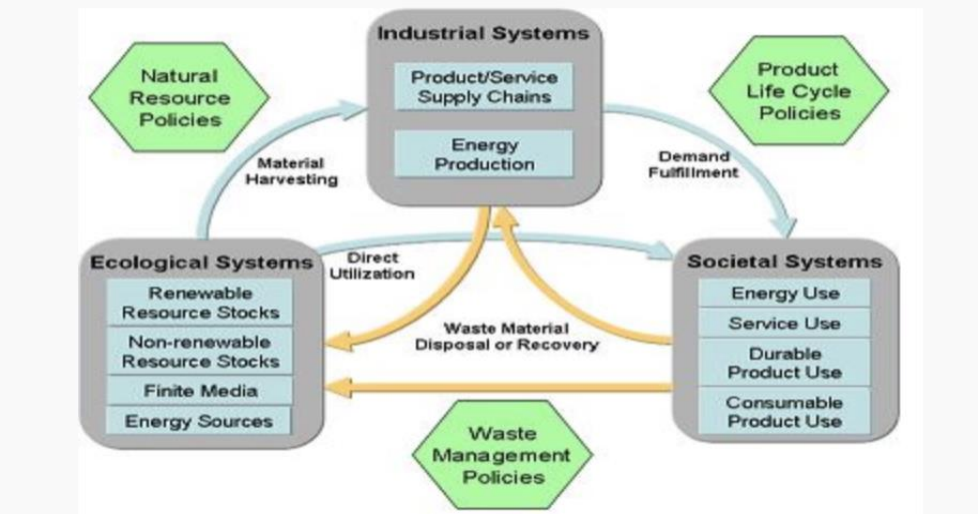

Figure 2: Systems View of Material Flow Cycles and Policy Frameworks. Graphic accessed from OECD

Another global clothing policy example includes France's recent ban on abundantly throwing away or burning clothing. Considering France is home to fashion couture, clothing waste has been an especially difficult issue in terms of marking down prices and maintaining the cultural identity and importance of fashion. Many luxury clothing companies also do not want to mark down their items, because that discredits their brand and their overall image to consumers; if shoppers can buy the same article of clothing at a reduced price, it damages the reputation and markup of that item.

Social values in the cultural presence in clothing continue to include the competition for companies to produce constant, trendy clothing to appeal to shoppers and to stay relevant in the industry. Companies may not want to change, because it is more profitable for companies to waste clothes, even if that results in destroying their inventory.

While the clothing industry transcends across the globe and requires the labor force, factory space, textile development, and manufacturing overseas, the United States is one of the largest markets for these clothing sales, as well as the location for company headquarters. Starting work on clothing waste could set a trend in a close knit, competitive market in which could utilize new, better technology and environmental standards. The US can only begin to enforce this policy in the US but could also relate to overseas distributors who want to sell clothing in the US.

Retailers may not consider sustainable options or think that this would be appealing to the consumer. In order to make environmental issues matter in fashion, the consumers would need to be selective with the companies they trust in their overall eco-friendly production and systems. This would be an incentive for companies to be more competitive with each other and offer best practices in sustainable clothing production options.

Literature Review

By identifying literature based on the nature of the fashion industry, its social costs, as well as considering alternate strategies for policy consisting of technology and alternate waste use, developing a policy based around companies self-reporting on their production process, percentage of clothing sold, and sustainability agendas would present new trends and strategies to build a smarter, sustainable fashion industry with improved transparency.

In a fragmented, fast-moving, global industry, fashion has become harder to regulate within its social costs and overall interaction with government intervention and collaboration. This research helps compare the intended policy under investigation as well as finding aspects of policy alternatives that can strengthen its goals of bringing a more cohesive strategy to connect the fashion industry with consumers and making smarter sustainable choices, such as new labeling requirements on clothing and stimulus exceptions to certain industries that implement innovative technology for sustainable fashion and disposal alternatives.

The nature of the fashion industry is necessary to examine within its status quo high production trends and competition, because it often goes unregulated by the government and manipulates consumer relations. The rising demand of faster production cycles, however, makes this industry susceptible to environmental harms. Jasmin's research in "UK Lawmakers to Investigate Impact of Fast Fashion on the Environment" examines the clothing industry in the UK, validating the concerns that critics and the government have about the fast fashion industry. The source also reflects upon the life cycle of clothing, from production, washing, and disposal.

Population growth and modern marketing strategies have only deepened the damage of high clothing production, due to its easy access in online shopping, social media influencers, as well choosing cheaper prices over the necessity for a product. Through another fast fashion

focus, Dana Thomas' article, "The High Price of Fast Fashion," reflects on the social costs of producing low quality and cheap clothing with a deeper comprehensive inquiry into the spending habits of consumers. Her study shows that Americans shop about five times more for clothing compared to 1980.

The main way that fast fashion companies cut costs is manufacturing in poorer countries, in which contributes to validating lower wages and working conditions. While it might be helping poor countries' economies stay afloat, it's not creating better jobs or working conditions for people in the long term, not to mention the extreme dangers of the working conditions, like flammability and improper training of machinery.

Some solutions to approaching fast fashion, and the fashion industry as a whole, could be instituting better labeling for consumers to become more mindful about what they are paying for. Labeling is related to the proposed policy, because it builds transparency of the production process and the life cycle of that clothing article for consumers. A strong market focus stresses that consumers are in charge of determining the spending habits, in how they take care of their clothes, which in turn will influence retailers, especially in an industry fast paced in competition and capturing the next trend. Regulations on how to take care of clothing in all stages of its lifespan is also an alternative policy and perspective that can help lower clothing's environmental harms.

While acknowledging that fast fashion and the current production and labor system don't benefit the ecosystem, addressing social costs and incentivizing their publicity would help to create sustainable entrepreneurship in order to ignite fashion retailers to start sustainable change in their business models. Some literature suggests highlighting standout companies in their individual environmental campaigns.

Ingrid Molderez and Bart Van Elst spotlight five small startup companies that influence smart, sustainable fashion through new technology and marketing, including Stanley & Stella, Orimpex, Pro Garments, Mayerline, and Van de Velde; some of which are further investigated in the analysis portion. The source's distinct intention is to create a sustainability policy for the fashion industry, which can adapt to the function of a certain company. In such a fast paced, trend-built industry, fashion also needs a moral leader in paving this enterprise.

The highlighted companies have some notable improvements in their models that include "eco-friendly materials" and safe working conditions, as well as locally sourced textiles. Most of these companies are from The Netherlands, Turkey, and Hong Kong (Molderez, Van Elst). Further research could include what motivates certain countries for sustainable measures in production.

These companies also undergo special certification programs that guarantee different environmental standards, such as percentage of organic cotton and Global Social Compliance. Groups, like Fair Wear Foundation, also deliver a list of effective companies' approaches for consumers to check.

Related to social costs, producers are dependent on consumers who shape the overall market opportunities and environmental concerns that could appeal to their given target audience. Simone Schiller-Merkens' research, "Will Green Remain the New Black? Dynamics in the Self-Categorization of Ethical Fashion Designers," collects evidence on how trending social costs shape the overall branding in select frames of self-categorization. While the fashion world always leaned on economic prospects and widespread commercialism, more companies and designers have recognized animal rights, recycling, and appealing to moral issues as a form of entrepreneurship. It has also been a challenge to create an ultimate angle to appeal to all

consumers (business-center, environmentally active, esthetics-minded). Through the policy formation of companies self-reporting their production, social costs have long term effects that shift a balance in the economic goals but are ultimately incentives for a larger customer base.

By highlighting specialized companies and leaders, the fashion industry not only has a newfound incentive to appeal to consumers through addressing social costs and moral standards of protecting the environment, but also to utilize new, proven methods that promote safe, sustainable measures. Highlighting companies and having their statistics publicly known, under the intention of the future policy, helps consumers become more engaged in supporting clothing that won't have damaging pollutant factors.

While the policy in development pertains to company self-reporting, alternative methods and strategies have been discovered, including new technology, better disposal options, and government intervention, in which could benefit consumer and producer relations and decrease environmental harms.

The current chain supply system only looks at one piece or moment of the material at a time, rather than looking at sustainability of the resource throughout the entire system. By combining aspects of the whole chain of production, more profound changes in being efficient with resources can occur to help the environment as a whole in the production process. A Dutch study from The Ministry of Housing, Spatial Planning, and the Environment ("Getting Ahead") specifically pinpoints the intervention of industry and government relations to lay out policy initiatives in building a more sustainable clothing production system.

The government can take initiative in engaging multiple organizations together to create unique solutions to reuse items through their specialized backgrounds. Government-industry intervention is a large priority in The Netherlands and they contribute an entire section to this

partnership, marking particular roles, such as government's responsibilities to grants, credit facilities, freedom to experiment and temporary exemption of past policies, whereas the industries can utilize new technology with redesigning, influencing consumer behavior, and combating waste.

New technology can offer creative sustainable solutions for the fashion retailers. Vicki Norberg-Bohm's study, "Creating Incentives for Environmentally Enhancing Technological Change," addresses negative externalities, like carbon emissions, and the government's role in introducing and monitoring new technology. Through a need to monitor to the extent of safety, especially in energy systems, governments can best help industries through a partnership. Government intervention through these following action items include supporting commercialization of new research, analyzing the private market niche and its size, strength, and risk of change, researching financial and technological capability (Norberg-Bohm).

Mandatory self-reporting of retail companies is a good first step for the government to take in their policy creation, confirmed by identifying literature based on the nature of the fashion industry, the social costs that consumers take influence their purchasing behavior, as well as considering alternate strategies for government intervention in the fashion industry.

The fashion industry collectively impacts the global economy with a fast-paced, competitive initiative to overproduce and lead to multiple social costs. Regarding the present production measures, more sustainable forms of distributing this clothing, through new funding for technology and companies reporting their total costs of production, can help build better relations with consumers' knowledge of practicing environmental balance in clothing and initiating clothing waste issues.

Analysis and Results

For the purpose of demonstrating some of the policy options presented, including companies' labeling of items for better consumer knowledge and relations on sustainability, as well as self-reporting production and clothing disposal options, the analysis and results portion will test the connection and communication of manufacturing knowledge and marketing between industry and consumers. The main points to test include labeling information and transparency of sustainability in relation to clothing, as well as how consumers can best interpret these measures to fit the needs of their own purchases.

Even though clothing firms may claim sustainable practices, consumers generally do not know what "sustainable" means in comparison to normal goods. The analysis shows that the promise of sustainability in the textile sector is mostly an empty promise, or at least an unverified promise that requires more defining terms and action.

The research to display the analysis and results of this policy process took a two-step process: (1) a chart that demonstrates available information from producers that could reflect factors for self-reporting, and (2) a consumer survey of multiple choice and short answer questions about clothing purchase behavior and environmental impacts.

The first step of this analysis process was to reach out to notable sustainable clothing companies and follow up about their certain protocols, certifications, and marketing. In order to see how the companies interacted with the public, the chart represents information on sustainability branding strategies, revenue, country of origin, and factory quantity and production. All the companies represented in the chart were included due to their previous high acclaim as sustainable retailers found in other research.

The consumer survey company production chart helps demonstrate this policy in action, because it brings attention to the lack of knowledge and publicity that basic clothing impact has on the environment. While companies might use sustainability as an umbrella term branding strategy for immediate eco-friendly procedures to manufacturing, consumers still don't consider clothing waste to the same extent of damage as plastics and food waste.

The second step of this analysis was to develop and distribute a survey from the general community, collected through social media accounts and community forum groups. The survey collected 71 responses, all with varying results. While all the results are included in a separate tab, some of the leading results will be discussed below, in which included the public's interest in clothing sustainability and understanding how companies handle unsold inventory.

Part 1: Clothing Companies and Production Research Chart

Through collected research, this chart represents some notable clothing companies who are described as stand out sustainability producers or run popular sustainability campaigns. Some companies were contacted, and they replied they were unable to supply further information. They mentioned the websites as the most valuable source for customers and researchers. Whether or not people use the website to learn about clothing companies, websites are the primary way clothing companies extend information to consumers about sustainability measures.

These companies are not based in the United States and the actual policy would reflect on US manufacturers first. This chart demonstrates the potential to combine both self-reports and competitive sustainability highlights, serving as an endorsement for companies to utilize new sustainable technology. While this policy would require action from US clothing industries, the companies listed below are based in European and Asian countries. Countries worldwide, especially in the Netherlands, are leaders in the sustainability fashion industry. Most clothing

production happens overseas for US clothing retailers, however, the US heavily imports clothing from international brands, as well as supply an active customer base. For example, 35% of the total revenue of Pro Garments, a Chinese company, comes from North America. Also, global marketing on social media platforms and online shopping only makes international brands more accessible to American consumers. Influencing clothing policy in the US would make a long-lasting impact for the global fashion industry.

	Stanley/Stella	ASOS	Mayerline	Pro Garments	Orimpex	H&M
Country of Origin/year	Belgium; 2012	London UK; 2000	Belgium; 1957	China; 2001, 2010 (Dutch management)	Netherlands-Turkey; 2007	Sweden; 1947
Branding focus	Casual wear, 'fashion-forward'	Women's Wear Special focus on social media (22.2 million followers on all social media platforms)	Women's wear and fitness wear	Workwear, swimwear, children's wear	Women's Wear	Young adult wear, traditionally fast fashion approach and style, largely based on social media campaigns
Revenue (near 2019)	40 million euros	US $3 Billion	US $4 Million	US $5 Million – US $10 Million	US $5 Million	24.3 Billion
Total production (Annual Production Per Piece) and Total number of workers and factories	10 million clothing sales in 2018, 76 employees	4,755; 896 manufacturing sites/ factories across 24 countries, with 173 suppliers	15 factories, 80% production with consistent suppliers	600 million (annual production per piece); 3 million (annual production capacity); 450 employees	30 total employees	n/a
Sustainability strategy	Sustainable production; 100% cotton, sustainable materials, like recycled polyester. Full, accessible reports Global Organic Textile Standard Certified (GOTS)	Smarter use of pattern cutting materials, circular fashion and reusing pieces; Ethical trade; cutting back on materials, like cashmere, mohair, silk, feathers bone, horn, shell & teeth.	Improving certification programs with Fair Wear Foundation	Source and produce all fabrics, materials, labels. Sales all based on inquiry, ODM/OEM	Production based on all-natural cotton and bamboo. Special focus on farming relations. Global Organic Textile Standard Certified (GOTS) Organic Content Standard Certified (OCS)	Updated Conscious movement in 2009, with organic cotton and recycled polyester ("Sustainable materials"

Figure One: Chart of Available Production Information from Notably Sustainable Clothing Companies

The following information on the chart was chosen to represent qualities that consumers should consider if companies were required to self-report their production and overall impact on the environment. Revenue and customer growth represent a company's primary concern with overall economic success and outreach. Understanding branding, number of factories, country of origin, and overall self-advertised sustainability procedures are the next steps to tracking clothing and its total journey of production. This chart collects what consumers don't necessarily consider when it comes to purchasing clothing.

While this data supplies some necessary considerations for all consumers to understand the companies better, it doesn't represent all the factors required for authentic sustainability knowledge. Most of the chart information was found through third party software business statistics pages. Other important factors that producers don't make readily available include gross profit margin, the process of disposing clothing, as well as the methods to cut out patterns and use of textiles.

It is also worth noting how companies choose to say "sustainability." It is important to recognize that sustainable clothing is not always inherently better practice for the environment; rather, it becomes a marketing strategy to entice more consumers, under no pretense that these practices are helping. Using 100% natural cotton, opposed to polyester and synthetic fabrics does not diminish the strain on the environment, rather increase water production to convert this cotton to. Using sources, such as bamboo, also does not improve the general sustainability, it is just another resource that requires the same manufacturing.

Circular fashion, a term often used in ASOS campaigns, appears to be more user-friendly and direct with its environmental benefits. Circular fashion pertains to the reuse of unsold inventory. Some strategies include repurposing the fabric to create a new accessory or item that

can be resold or marked down. This is a direct application to reusing unsold items. This will be a strategy for further research.

Other features from this chart also include the social media performance of ASOS and H&M and how social media has become a new strategy to gain consumers, no matter the location or language. Since these two companies present a fast fashion approach, compared to the more niche mentality of the other companies, they are able to have a larger market and influence in promoting sustainability.

In order to address some additional costs for this policy, self-reporting and reconfiguring brand management wouldn't come at an additional price as to what already exists. Costs might become more present after the outcomes of self-reporting, by observing changes for true sustainable measures in clothing.

This chart can continue to develop, by recognizing key figures, such as overall production and percentage of sales. This knowledge is not publicly announced, or easily accessible to consumers, concluding that it needs to be a process in the policy for these companies and more to do business with US consumers. Finding methods to motivate consumers to recognize these sources can also be introduced through new brand management on social media.

Part 2: Consumer Survey

After collecting some statistics on the clothing companies through a chart format, it was important to examine the extent of how consumers may gather this information for their own purchasing behavior.

The survey presented to consumers featured 19 questions, with a variety of style formats, including multiple choice, click all that apply, selecting a point from a range of 1-5, as well as short answer. All the questions were voluntary and allowed participants to answer what they felt most comfortable with. This survey was conducted through Google Forms and was distributed through personal social media accounts on Instagram and Facebook, as well as community, neighborhood, town groups on Facebook.

While there is a copy of all the responses that specifically list out each participant by their age group and gender with their corresponding answer, some notable responses and charts from the survey will be discussed below.

Quantity and Frequency of Shopping (Figures 1 and 2)

The following pie charts from Figure 1 and Figure 2 represent the quantity and frequency of the consumers' shopping habits. This data builds a realistic setpoint to their expectations and exposure with these companies. It's important to recognize, however, that clothing retailers also have an influence away from the stores, through social media and online shopping.

These results prove that consumers don't act in a uniform way when it comes to shopping for clothes. For some consumers, clothing is a necessity for practical, durable use, where other consumers see it as a hobby and form of expression. Both types of consumers could have the potential to readdress their purchasing habits and use environmentally friendly substitutes. It's also a matter of how often they purchase clothing and the quantity of their own wardrobe that impacts their individual carbon footprints.

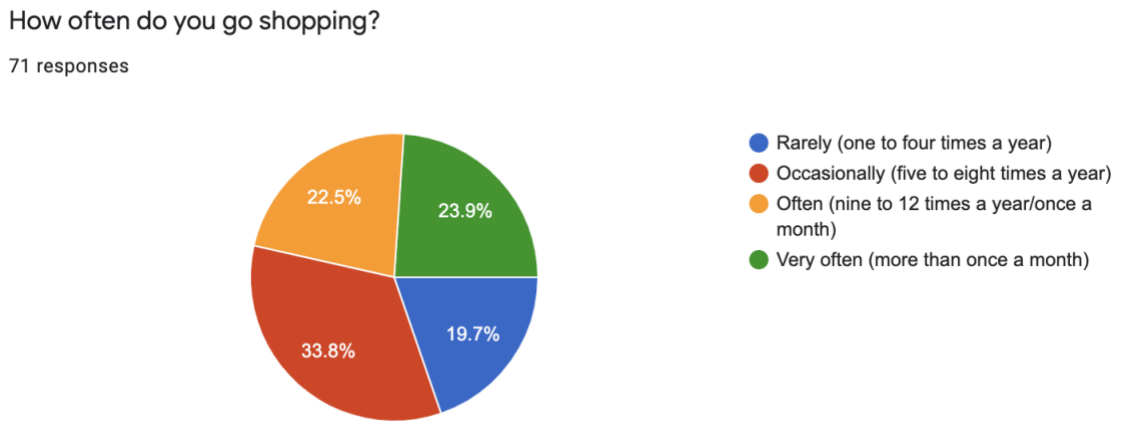

Figure 1: Shopping Frequency

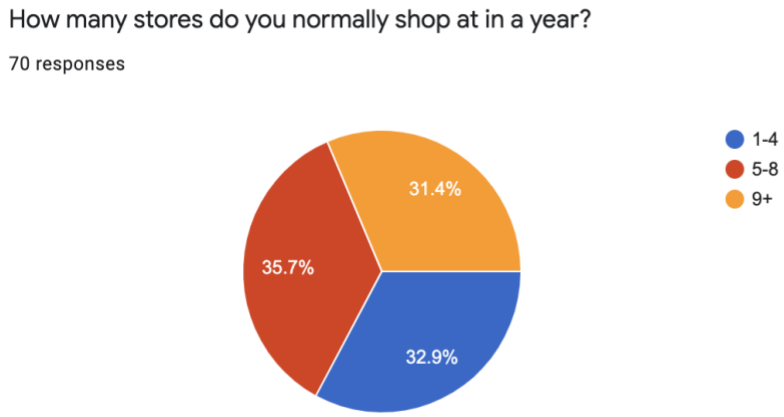

Figure 2: Quantity of stores

Store Loyalty (Figure 3)

Most people from the survey build a relationship to routinely go to the same store for a specialty product, such as sneakers or jeans, proving loyalty to the effective quality of a product. This survey also relates to the importance of how age corresponds with the responses and qualities they look for in clothing. While there are no continuous patterns to make an exact correlation, participants ages 18-24 tend to consider styles, trends, and fits, while ages 36-55 considered fit, sales, and overall longevity. It's also worth noting that out of the 71 responses,

only 9 participants were male. Their purchases of loyalty are usually based on a one time buy and liking it, as well as lasting a long while.

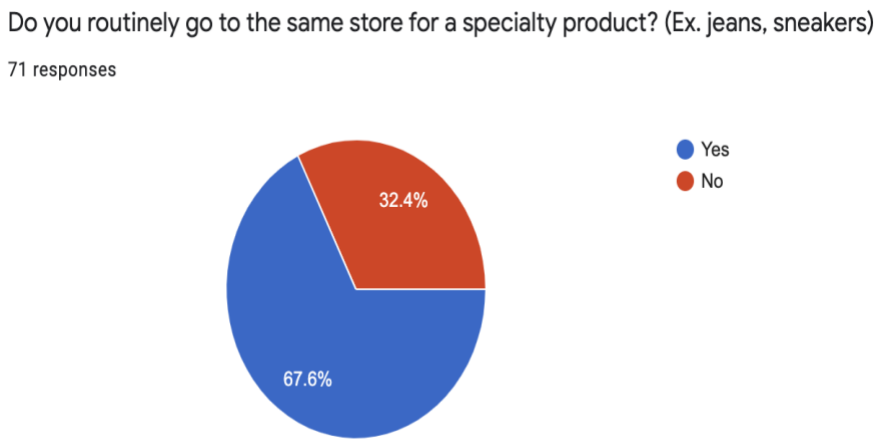

Figure 3: Store Loyalty

Corresponding responses to Figure 3:

How did you decide that you were loyal to this certain product?
"Years of experience with choices and quality and brand reputation" - Female, Age 36-55
"stuff that lasts a long time usually" – Male, Age 18-24
"wearability, durability, washability, garment still looks good." – Female, Age 36-55

Range of Interest on Production Information, Environmental Purchases (Figures 4 and 5)

Consumers often presented an interest in becoming well-informed on the production processes of their clothing and would like to know this information, as seen in Figure 4. But according to Figure 5, many consumers currently don't highly consider environmental impacts of their purchases. Some consumers responded that they tend to change their purchasing habits due to environmental harms for products, such as coffee, cleaning supplies, and cosmetics. Consumers are still recognizing the exact relationship between the environment and clothing.

Some participants make a point to use products that are environmentally safe, such as cruelty free products of shampoo and makeup, reusing rags at home, excess plastic bags. This insight and intention to substitute regular goods for environmentally friendlier options opens the

possibility of recognizing and changing clothes shopping habits, such as where they shop, how frequently, and the quality of their purchases.

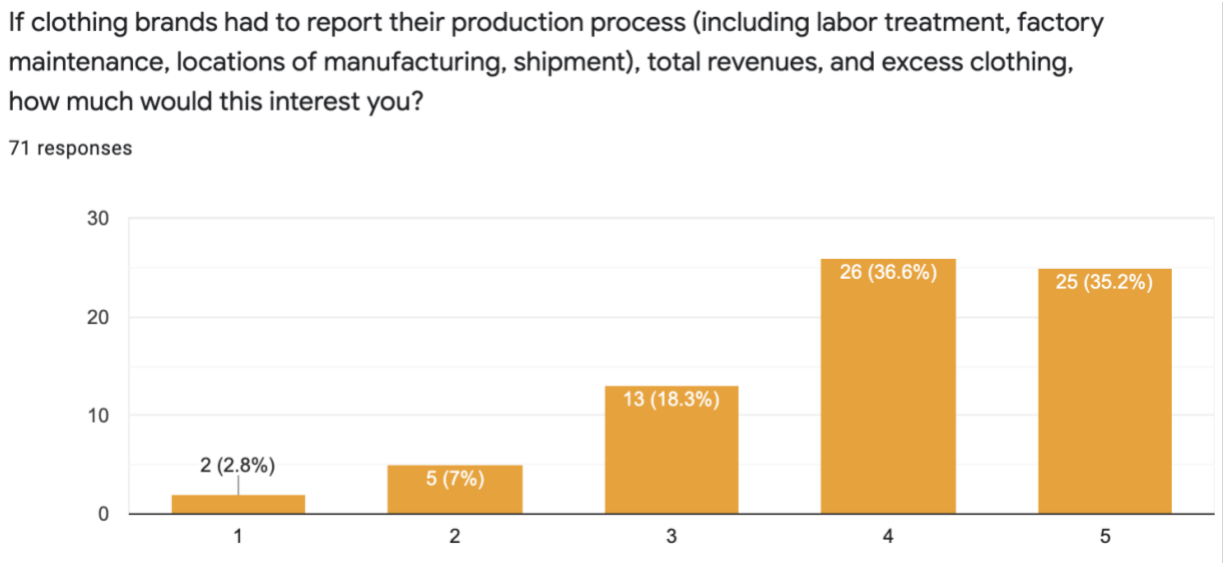

Figure 4: Range of consumer interest in production reporting (1- little to no interest; 5- high interest)

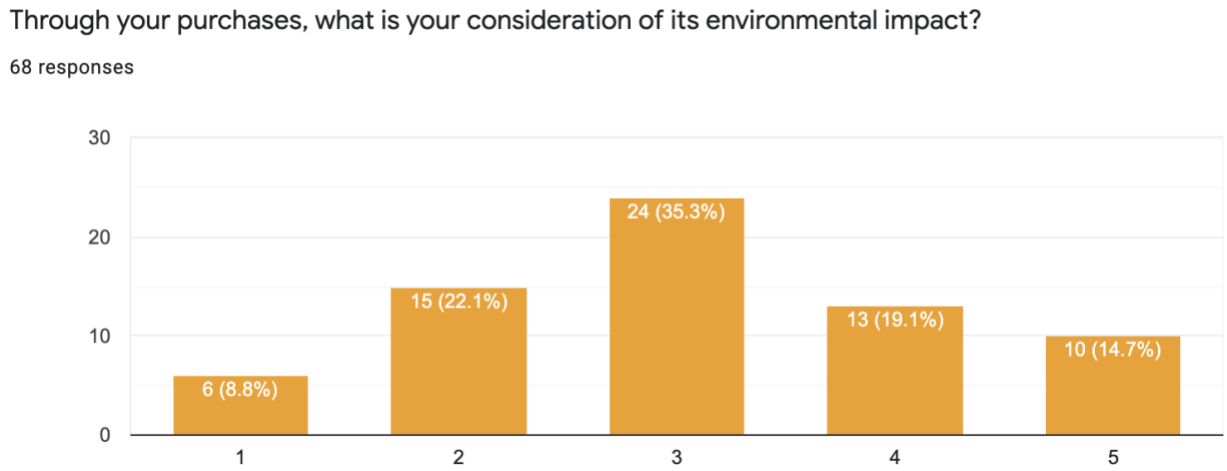

Figure 5: Range of consumer interest in environmental impact consideration (1- little to no interest; 5- high interest)

Short Answer Responses (Figure 6)

Some of the respondents explain in more detail about their purchasing habits and how more information from companies would influence their relationship with these products.

These two questions gained some longer, varied responses that demonstrated the respondents' actual relationship with environmental issues, shopping habits, and recognizing the moral reasonings and choosing other options instead, whether for convenience or suspicion.

In general, are there products that have a larger environmental impact that you recognize and care more about? Explain.	**Through the understanding of each company's production process, how would this impact your spending purposes and habits?**	"Would not affect my habits" – Female, Age 18-24
"I am not aware of any differences in environmental impact among fabrics" – Female, Age 77 or older	"I would consider it, but price fit and quality would be more important" – Female, Age 36-55	"I would avoid companies that did not use fair and safe labor" – Female, Age 36-55
"I realize the cost & impact of safety fashion and even when I do purchase it, it's on my mind" – Female, Age 36-55	"I try not to buy clothing made in China now. I would also avoid exploitative labor practices and give preference to clothing lines that dispose of excess thoughtfully" – Female, Age 77 or older	"I'd assume it to be like how Whole Foods rates their meats 1-5 in how well the animal was treated before/during processing. I would feel better about spending more for my purchase" – Female, Age 36-55
"I know most companies frame themselves as eco-friendly and greenwash/cycle in their CSR approach. I'm a bit skeptical on what companies say they do" – Female, Age 18-24	"It probably wouldn't unless the company's production process is proven to be harmful" – Male, Age 18-24	"I try to be responsible in my purchases, much of my clothing is made in USA or fair trade. Transparency in the production process would make it harder for me to make purchases that are not sustainable/responsible" – Female, Age 36-55

Figure 6: Consumer Short Answer Responses

Analysis and Results Conclusion

While recognizing the importance of transparency, the phrase and phase of 'sustainable clothing' provides information that companies aren't creating accessible, authentic sustainable

options to energize their consumers. 100% natural cotton isn't necessarily better, it requires more water. Dying processes are still harmful, as well as new methods to using bamboo and other alternate forms. They all require the same procedure.

Some respondents were skeptical that companies mainly throw clothes away or sell to discount retailers, or even shipping to other countries. Many are choosing alternative shopping forms, such as thrift stores or upcycling and reusing their own old clothing. Most respondents were concerned with these practices, but they shrugged it off as an inevitable burden and harm to the environment.

In the reality of presenting this knowledge on the actual product of the self-reporting policy, the chart was helpful in recognizing a direct comparison between different companies and how it can be made in a user-friendly for brief guidance.

Understanding companies' marketing and outreach is critical to developing a policy based on labeling requirements and companies' self-reporting. As observed in the survey from 71 consumers, this information from retailers is not always accessible, despite the public's general interest and lack of knowledge of understanding the social and environmental costs of clothing. Considering consumers' decision making also relies on habits they have created and addressing some possible shifts necessary to fit with an environmental agenda.

The results of this policy would benefit consumers to have better access and awareness of the common harms of clothing production. Since many consumers have already switched to more environmentally made products, such as hygiene products and food, it can motivate them to seek out clothing brand substitutions that are wiser for the planet as well.

Policy Recommendations

Through the recent analysis of gathering reports of retailers' environmental protection strategies and production processes, as well as developing a survey to observe consumers' interaction with the fashion industry, some conclusions follow that consumers are not familiar with the actual environmental harms of clothing waste, as well as the overall lifeline of clothing, from production to disposal. Even though clothing retailers may claim to have sustainable practices, this process doesn't translate to the consumers, resulting in an unverified promise. In order to make recommendations for the clothing process, the several available options include (1) sticking to the current policy or lack of, (2) a mandatory reporting and labeling policy for companies to build transparency and better customer relations, and (3) looking to advance technology for the purposes of reusing clothing at every stage of production as well as making new sustainable technology a competitive incentive for companies.

If there was no change to the current regulation and clothing industry, then retailers would most likely continue their current trends of briefly promoting sustainability in terms of glossy marketing and campaigns. Little change would occur in consumers' decisions to change their spending and shopping habits, because this information is not widely available or verified to them.

Some benefits to this policy choice would lean on its present existence and no need to change, as well as the inherent, environmental awareness based on consumer choices without any influence. Due to external environmental shifts in purchases involving substitutes for paper, plastic, as well as hygiene products, the analysis revealed that some consumers are already considering safer, environmentally friendly substitute products. This trend could naturally

become a consideration for clothing over time with the additional influence of thrift shopping, second-hand borrowing, as well as clothing rental businesses.

To allow a problem to evolve in a natural, continuous state, the policymakers normally grant the decision making to the private industries and the consumers. This finding could determine that no additional government intervention is necessary, as government has taken a limited role to interacting with the fashion industry.

A downfall of this policy choice falls under the unethical “greenwashing” of the US fashion retailers and their marketing strategies. Sustainability has often been advertising, rather emptily, to consumers, which can continue to mislead purchasing behavior and not create systematic change to environmental justice in the fashion industry. Broad environmentally friendly clothing campaigns leave consumers either blindsided or suspicious of the actual effectiveness and process.

Waiting for consumers to catch on to a possibly inherent shift to environmentally friendly clothing might also not be a luxury that the United States can afford to take, considering the social costs and heavy pollution of these clothing items in every stage of its production. Considering the government has taken a limited interest and initiative in clothing policy in recent history, this mindset could cause long term damage and require more intense regulation if not handled moderately now.

The original policy plan, developing a mandatory self-reporting process, required distributors and producers from all US clothing sales to self-report their overall production costs, inventory, revenue, and percentage of clothing sold, in addition to social costs of their labor force treatment and quality of factories.

A benefit to this policy change would be the general public's access to more transparent information presented on the companies' production habits. The consumer survey especially presented insight that consumers might not know the clothing cycle's true environmental impact, the materials and production process, as well as how clothing is disposed.

Mandatory self-reporting is also a good first step to guide fashion industries to reflect on their own practices in a public setting, as well as provide a reliable and consumer-friendly relationship to creating better definitions of "sustainability." The self-reporting process utilizes publicity and garnering attention towards making environmentally efficient clothing as an option, and as a pathway that can continue the conversation and advance future policy.

Another benefit is to have the self-reporting policy implemented and enforced by a governmental actor, preferably under an environmental agency. Having a neutral, direct position can have a positive advantage to creating a focused task on being diplomatic and working together with these clothing companies, rather than in a position of criticism and judgement.

Some drawbacks of this policy would fall on its potential design and enforcement. The policy would require a uniform design to presenting this production information, similar to a nutrition facts label for food or how fast food restaurants present the calorie intake for each of their products.

Self-reporting can still present some biases, in relation to the politics stream involved, and how clothing companies choose to present this information. The company report graph presented some information that the companies choose to share a bit more openly, such as number of factories and total revenue. Finding total percentage of clothing sold and the disposal of the clothing, however, is not accessible information. The actors involved would need to form

stronger, neutral access to talk with these companies to do proper research and uniform design, in relation to the type of clothing company.

This policy also assumes that all consumers would be interested in this knowledge and would take immediate action after the new regulation of reports. Even if not all consumers take action and shop accordingly or decrease their purchases, they would be faced to acknowledge the statistics, similar to a soft law, by growing in the first stage of exposure and acceptance.

An alternative policy introduced during research relates to adopting a technology standard for US clothing manufacturers. A specific and effective sustainable approach to clothing improvement includes regulating the waste from cutting out patterns for assembling clothing.

Some benefits to introducing new technology include the fashion industry's inherent interest in advancing their factories and competition with other brands. Some forms of technology could include addressing remnant fabric that doesn't only create a waste of materials that has no way of being reused, but also costs the company in requiring more fabric than what's needed. Some companies, such as ASOS, are using new equipment with laser cutting machinery that maximizes the total use of the fabric. Other strategies consist of reusing materials from unsold items, considered "circular fashion."

This technology could be implemented for every clothing manufacturer in The United States, and then eventually a policy for all clothing sold in the United States.

New technology continues to be a large incentive for companies to stay trend-forward, competitive, and economically and environmentally efficient, especially for the fashion industry. It is a strategy to combine an environmentally friendly mindset with economic efficiency in the industry.

Some drawbacks to considering new technology would be the overall cost and manufacturing of the actual equipment needed. New technology would have the highest upfront cost out of all the policy ideas but could be a more permanent solution in the long term.

As a large clothing importer, the United States doesn't have a large percentage of clothes they manufacture, so investing in these machines might not be the most financially secure, or effective in creating a long-term change in clothing pollution.

The best policy option would be a combination of the second and third options, because the analysis proves the importance of gaining these reports to reflect on competitive brands to create better, moral options to appeal to their consumers, as well as truthful marketing and advancement in creating authentic sustainable goods. New technology can be a natural step to the aftermath of collecting these reports and seeing new forms of sustainability to improve upon.

While the status quo policy leads consumers to possible third-party enlightenment of discovering substitute clothing options, such as reusing materials and purchasing second-hand goods, the US government could create a better process in getting involved in clothing waste in environmental issues.

Traditionally, there are few policies regarding clothing in legislation, considering it usually is to the discernment of private companies. However, these companies haven't been able to compensate for their clothing waste, as well as the social costs and lack of available information. Self-reporting would overall create more transparency and access to understanding new technology for companies, acting as a mentorship program to participate and gather reports on each company's production.

By addressing a lack of outreach with the community about production externalities and defining sustainability, as well as the funding for research in reporting and selecting the

companies to participate in self-reporting, governments and firms can advise each other on a foundation of transparency for consumers to decrease clothing waste and its social costs. This process could engage companies to discover competitive, innovative ways improve technology. which could ultimately be more profitable and competitive for their label. The collaboration also promotes strategies to decrease environmental harms in clothing and its overall social costs.

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