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Sustainable Initiatives in Textile Industry and Societal Expectations.

The Impacts to Industrial Sustainability of Garment Production Network caused by Covid 19 Disruption.

Master's thesis in Globalization and Sustainable Development
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Abstract

The disruption of the global supply chain during covid19 has provided the industries with both: an opportunity to reconsider the corporate sustainability and improve the system; or to overcome the crisis at the cost of environmental and social sustainability. While the textile industry is responsible for a vast amount of CO2 emissions, water usage, and postconsumer waste, it is crucial to investigate which path the companies chose and what was their reasoning and motivation.

The covid 19 also has increased the level of awareness within consumers, and thus this research investigates the criteria and priorities of garment customers who are specifically interested in sustainable clothes procurement. To find the numerical evidence for the tendencies identified in the interviews with interested customers, three questionnaires were conducted targeting three different groups of customers. The identified trends include alternative approaches from sustainability-oriented customers toward sustainable garment procurement due to a numerous obstacles faced during sustainable garment procurement.

From the comparison between the customer demands and sustainability initiatives of the garment comparisons, it is evident that the companies do not correspond to the sustainability demands of the sustainability-seeking customers. However, it is also evident from the findings in the annual reports that the sustainability awareness levels are rising within the industry because a number of greenwashing cases were identified.

Preface

I want to start by expressing my gratitude to my supervisor Heidi Rapp Nilsen for her assistance and insightful remarks throughout the project.

I also express my gratitude to my internship supervisor, Farid Yaker, and Sustainable Public Procurement Team (UNEP) for inspiration, knowledge, and skills that I was able to learn during the internship.

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List of Abbreviations

FY	Fiscal year
GPNs	Global Production Networks
GHG	Greenhouse gas
KPIs	Key Production Indicators
NPOs	Non-Profit organizations

OECD	Organization for Economic Cooperation and Development
SDGs	Sustainable Development Goals
SMEs	Small and medium-sized enterprises

1 Introduction

1.1 Implications of the textile industry on environmental and social aspects of sustainability

The textile industry is one of the sectors which are responsible for the climate change. In this study, both textile and apparel industries are combined and referred as textile, clothing, apparel or garment industry because this study looks not only into the sustainability of the apparel companies, but also to the sustainability of their supply chains. The global carbon emissions produced by the fashion sector range from 2 to 8% (UNEP, 2018). According to Ellen MacArthur Foundation report (2017), if it stays on its current course, by 2050, the sector may consume more than 26% of the carbon budget, which is set to keep global warming below 2°C. To put it in perspective, 2% of carbon budget is already used by textile industry in 2015. If everything continues as it is, the expansion in the material volume of fabrics would result in an increase in non-renewable fossil fuel supplies of up to 300 million tonnes annually by 2050, which is more than triple compared to the current amount of 98 tones in 2015 (Ellen MacArthur Foundation, 2017). Despite this high price for textile in a form of greenhouse gas emissions, the equivalent of one trash truck's worth of textiles is burnt or landfilled every second (UNEP, 2018). According to Ellen MacArthur Foundation report (2017), 73% of fabrics end up in a landfill or incinerated.

Moreover, the industry is currently a big burden in terms of water pollution and usage of water recourses. Around 20 % of wastewater worldwide comes from fabric dyeing and treatment (Kant, 2012). In addition to being the second-largest global polluter of water, the manufacturing of a typical pair of jeans requires 3,781 liters of water from the cultivation of the cotton to the transportation of the finished product to the shop. (UNEP, 2018). Additionally, textiles are thought to be responsible for 9% of the yearly microplastic losses to the ocean, which is a half a million tons of plastic microfibers, the equivalent of 50 billion plastic bottles (UNEP, 2018).

What is even more worrisome is that these issues associated with the industry are only expected to increase in the near future. So far, global per-capita textile production, for instance, has increased from 5.9 kg to 13 kg per year over the period 1975–2018 (Peters, 2019). In other words, the number of clothes people buy in average has been increasing in the last decades. Specifically, world consumption of textile has increased to 62 million tonnes of apparel per year and is estimated to rise up to 102 million tonnes by 2030 (Global Fashion Agenda and The Boston Consulting Group, 2017).

All of these issues are exacerbated by a recent trend in the garment industry – fast fashion. According to Anguelov (2015), fast fashion business strategy focuses on providing consumers with regular novelty in the form of inexpensive, trend-driven items. In order to sell products quickly, fast fashion relies on impulsive purchase and repeating consumption. The sustained growth of this business model, its superior performance to more conventional fashion retail, and the entry of new players into the market, such as online retailers who can provide greater agility and quicker delivery of new products more frequently, are all evidence of its enormous success (Anguelov, 2015). Thereby, fast fashion has resulted in shorter average amount of time a garment was worn, specifically, 36% shorter than it was in 2005 (Ellen MacArthur Foundation, 2017). In other words, the material flow through the system has risen as a result of fast fashion and globalized supply chain. In comparison to before the year 2000, fashion brands are currently generating roughly twice as much apparel (Niinimäki, 2020). According to Bick et al. (2018), millions of tons of textile waste have been generated as a result of rising consumption patterns, and much of it has ended up in landfills and other uncontrolled environments. This is especially relevant to developing countries, where a large amount of this waste finds its way into markets for used clothing. These countries frequently lack the assistance and funding required to create and implement workplace and environmental legislation that protect human health (Bick et al., 2018).

The issues associated with fast fashion are not only becoming worse, but also, they are distributed very unequally. Due to globalization, the supply chain of textile industry has grown enormously, and often, every step is located in different countries or continents (Anguelov, 2015). This is the reason why it became more complicated to track the production process or to use the arbitrage between local legislations to cut the prices. According to Arslan (2019), exploitation can thrive because of distance between the headquarter and the production site. Fashion retailers often put pressure on suppliers to cut their budget to lower the cost of final

products. The primary tactic used is threatening the suppliers to discontinue doing business. Given that they make up a sizable amount of expenses, employee wages and safety measures are the main target for cost-cutting. Additionally, because of their remote location in the supply chain, shops are far from potential violations (Arslan, 2019). As a result, the environmental implications have been unevenly distributed, with less developed countries suffering the brunt of the costs for wealthier nations (Carbon Trust, 2011) because they not only manufacture most of the textile and apparel (Textile Exchange, 2021), but also deal with most of the waste coming in a form of donations (Greenpeace, 2022). For instance, China dominates the industry exporting \$109.9 billion USD worth of textiles and \$158.4 billion worth of garments per year (Lu, 2018). While China's market share in the export of clothes has declined recently, its textile exports have surged as a result of growing demand from nations like Bangladesh, Cambodia, Vietnam, Pakistan, and Indonesia (Textile Exchange, 2021). This is why it is very important for the big companies to set sustainability standards for their suppliers and ensure that their whole supply chain is making progress towards sustainability.

One of the biggest environmental issues of textile industry is hazardous waste. According to Khattab et. Al. (2019), all life species are negatively impacted by the use of synthetic dyes. The textile dyeing water effluent is particularly hazardous due to the presence of naphthol, vat dyestuffs, nitrates, acetic acid, soaping chemicals, enzyme substrates, chromium-based compounds, heavy metals, and other dyeing auxiliaries. Other dangerous chemicals include non-biodegradable color fixing agents based on formaldehyde, stain removers based on chlorine, softeners based on hydrocarbons, and others. The presence of colloidal particles, coupled with synthetic coloring agents and frothy oil, increases turbidity, giving the water a foul look and rotten odor. Additionally, the turbidity will prevent photosynthesis, which is affecting marine life, by preventing the diffusion of sunlight needed for the process. The soil pores may become clogged by this waste, decreasing soil fertility (Khattab et. Al. 2019). This is why large enterprises in more developed countries should take the leadership and encourage their suppliers to deal with the hazardous waste according to environmental standards, instead of polluting the natural environment.

However, the implications of the textile industry do not end in environmental aspect of sustainability. According to Arslan (2019), there are three social issues: financial, physiological, and psychological exploitation are the three types of exploitation that exist. First, there is a pattern of noncompliance with the ILO's minimum wage rates. As a result, workers struggle to

afford even their most basic necessities. Wages are frequently late, adding to the misery. Families are therefore unable to pay their payments on time and are subject to financial penalties. Another issue is underpayment, and it is clear that there is deceit involved, as employees often do not receive pay slips, so the questions about underpayment become less likely. Bosses are also guilty of withholding funds from some employees on the excuse that they would be reimbursed when the employee quits the company. However, these withheld wages are frequently not paid to leaving employees.

Second, a common instance of physiological abuse includes disregard for safety and health regulations. The severity of the problem is demonstrated by tragic fires in textile industries in Karachi and Lahore. The proper firefighting equipment is scarce in workplaces, and testing and maintenance processes are at best irregular. Additionally, emergency plans are seldom in place. The medical system reflects this worrisome reality. Many places of business have first aid kits available, but their contents are frequently insufficient (Arslan, 2019). Tounsadi's (2020) research also demonstrates negative impact of the regular exposure to chemicals used in textile production on employees' health. The research focus was on a study of a textile plant in the Sidi Brahim industrial district of Fez City, evaluates the occupational hazards associated with otolaryngology, dermatitis, and ophthalmological symptoms among textile workers in the research region. The usage of hazardous chemicals, working circumstances, and the examined symptoms all demonstrated connection and tendencies. According to the epidemiological study, the facility where the textiles are produced exposes its employees to harmful and dangerous substances every day, endangering their lives (Tounsadi et. al. 2020).

Lastly, Arslan (2019) study shows the prevalence of psychological exploitation, which further demonstrates how low employee welfare is on the priority list. In this way, female employees particularly suffer, as discrimination towards them often starts during recruiting when they are subjected to invasive queries regarding pregnancy and are also required to complete diagnostics. Additionally, inequity often supersedes over talent, and men are promoted to managerial positions and given simpler work. There is often no promotions for older employees and any employee whose performance declines because of physical decline is abruptly fired. Retirement benefits that are common in other societies are conspicuously absent (Arslan, 2019) in the developing countries which produce garments the most (Textile Exchange, 2021). Anyone trying to form a union is physically chased out of the firm, so the collective voice is

seldom ever heard. No termination benefits are provided in this case due to pressure from management (Arslan, 2019).

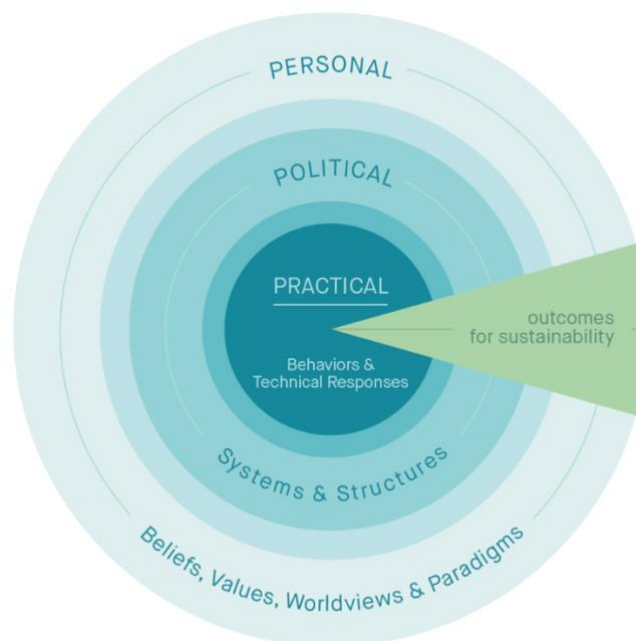
1.2 Shifting interests of young customers

Despite all of the environmental and social issues associated with the textile industry, it is evident that there are more and more customers who prioritize more sustainable items. According to the data from Simon and Kucher Global Sustainability Study (2021), in the last five years, 63% of customers have changed in a modest to large way to be more sustainable (including consumers who have also changed in a small way, 85% of consumers have grown "greener" in their purchasing). This change, nevertheless, varies among generations. While 32% of Millennials have drastically shifted their behavior toward becoming more sustainable, 41% of Baby Boomers and 38% of Gen. X have not or have only made minimal adjustments. Moreover, a significant portion of customers—34%—have self-reported that they are inclined to pay more for sustainable goods and services. In comparison to Gen. X (31%) and Baby Boomers (26%), a higher percentage of Gen. Z (39%) and Millennials (42%) are ready to pay for sustainability. The study also highlights the variances in how sustainability influences purchasing decisions across generations is because when a sustainable option is offered, 33% of Millennials choose it, although older generations are less inclined to select it (24–29%). Overall, sustainability is ranked as one of the top five value drivers by 50% of customers, a statistic that highlights both its growing relative importance during the purchase decision and its role as a crucial differentiator. However, when it comes to making sustainable choices, consumers adopt defaults or proxies due to a lack of in-depth knowledge in sustainability. Consumers, for instance, utilize a product's longevity or durability as a stand-in for sustainability in the consumer goods, automobile, and construction/home industries (Simon and Kucher, 2021). Thus, it is important to investigate the sustainability criteria and priorities for clothing of the customers who are interested in buying more sustainably. It is crucial to identify the gaps between their understanding of sustainable procurement and what is considered as sustainable in the sustainability field and to investigate the motivation behind their purchasing behavior.

Another question for the customers is related to their perception on responsibility for sustainability of the textile industry. The three spheres of transformation from O'Brien and Sygna (2013) became an inspiration to investigate the perception of customers in regard to the sense of responsibility and influence on sustainability of the garment industry. According to

O'Brien and Sygna (2013), there are three interconnected areas of change: practical (behaviors and technical solutions); political (systems and structures); and personal (beliefs, values, worldviews, and paradigms). The last, according to the authors, has the biggest impact on long-term outcomes, followed by the political and personal domains (see Figure 1). Thus, based on the theory of O'Brien and Sygna (2013), this work explores how the customers perceive the personal sphere (the beliefs of consumers and corporate decision-makers), political sphere (legislations and other public incentives) and the practical sphere represented by textile companies and their actions in this research. In other words, this research aims to investigate who should be the driver for sustainability change in perspective of consumers: businesses, governments or customers themselves.

Figure 1: The three spheres of transformation



Source: O'Brien and Sygna (2013), after Sharma (2007)

1.3 Covid19 disruption outcomes: positive and negative predictions

Along with shifting interests of consumers, many companies are also slowly start to mention sustainability in their advertisements, product labels or annual reports. For instance, 58% of companies use greenwashing practices (Google, 2022). When the pandemic of covid began in 2019, different theories emerged and it was not clear if this crisis becomes a threat or an

opportunity for a sustainable shift in different industries (Leal Filho et al, 2020). In some sectors, such as tourism, the pandemic has contributed to expanding global consciousness and the sustainability of travel and tourism (Galvani et al. 2020) while the sustainable energy sector also experienced growth because of sustainable policies introduced by some governments to confront the societal changes in transportation caused by the pandemic (Kanda and Kivimaa, 2020). It is also evident that covid 19 has contributed to the expansion of consciousness regarding sustainability (Galvani et al. 2020). Thus, it is important to investigate whether industrial sustainability has improved or hinged during the pandemic, specifically, in the textile industry because the disruption of the supply chains could be taken as an opportunity to restructure the business model in terms of transportation, materials, sources, and employee conditions (Leal Filho et al. 2020, Kanda and Kivimaa 2020, Ioannides and Gyimothy 2020). And, if some companies took a step to improve the factors mentioned above, it would be crucial to identify their motivations and other differentiating points which resulted in a successful change.

There are many benefits for companies to operate more sustainably as according to the studies, sustainable businesses perform better during economic recessions. In comparison to average firms, the top 100 sustainable global corporations saw much significantly greater sales growth, return on assets, profit before taxes, and cash flows from operations between 2006 and 2010 (Ameer and Othman, 2012). Moreover, companies dedicated to sustainability principles performed "above average" on the financial markets during the 2008 crisis, adding an average of \$650 million to each company's market value (Schneider, 2010). However, according to Nikolaou (2019), businesses frequently choose the path of least resistance when addressing sustainability concerns, concentrating on win-win scenarios. Thus, sustainability actions that do not yield notable short-term economic rewards are often disregarded or rejected (Nikolaou et al., 2019). This might become one of the reasons why 58% of companies globally are prone to use greenwashing nowadays (Google, 2022), which is an act of emphasizing seemingly sustainable actions and concealing environmentally or socially detrimental practices at the same time (Freitas Netto et al., 2020). Nevertheless, long-lasting benefits require strong sustainability (Nikolaou et al., 2019).

On the other hand, the covid19 pandemic may cause the crisis rebound effect, wherein society's recovery efforts would only concentrate on economic and social sustainability (Sarkis, 2020), This might make environmental sustainability initiatives more difficult to implement.

According to the author, previous crises often delayed economic expansion, which led to some environmental benefits, such as lower greenhouse gas emissions. Eventually, though, the ultimate economic recovery resulted in considerably higher pollution emissions. In recovery, the focus is likely to shift jobs and the economy, overlooking or eliminating any trace of environmental concerns. Several countries have previously suggested an economic growth strategy that includes scaling down or eliminating some environmental laws (Sarkis 2020).

Moreover, According to Epstein and Buhovac (2017), the main focus for most businesses remains in making financial profits and satisfying the shareholders. That is why many companies might change to less sustainable methods to achieve these goals. In this difficult moment of the pandemic. In other words, companies might become less sustainable in terms of social and environmental issues in favor of cost-efficiency. According to Bain (2020), there are cases of significant negative implications for social aspect of sustainability in the garment industry caused by covid 2019 pandemic, such as lower wages, reductions of work places and worsening working conditions caused by falling profits due to the pandemic. This is why it is important to investigate which path textile businesses have chosen: a long and hard way towards sustainable production or seemingly easier way to implement a few isolated sustainability actions and greenwashing.

1.4 Research objectives and main research questions

Based on the environmental and social issues discussed in this chapter, it is important to investigate sustainability criteria of customers who aim to buy sustainable garments and sustainability initiatives of companies who claim to be sustainable. This research is motivated by personal customer experience and work in an internship. As a customer who is interested in buying more sustainable garments, the issue of vague or conflicting definitions of sustainability was experienced in a firsthand, because clear definitions for sustainable garments are absent in legislations currently. This unclarity can lead to a definitional arbitrage within the customers which can be used by textile companies to greenwash their customers consciously or unconsciously by advertising their products under sustainable labels. The consequences can be horrifying, because the number of consumers interested in more sustainable products is rising worldwide and 63% of global customers have changed their purchasing behavior to a certain degree ranging from small to significant aiming to live more sustainably (Simon and Kucher, 2021). Thus, it is important to investigate the sustainability definitions of customers for

garment purchases because it is a huge purchasing power that can change the course of humanity, but it can also lead to detrimental consequences if the customers fall into the trap of greenwashing or embrace sustainability misconceptions for their purchasing decisions.

Furthermore, the issues faced by the customers interested in sustainable garments are also the reasons why other people remain indifferent to the sustainable alternatives for garments. Therefore, I was inspired to chose it as my research topic to not only find clear definitions for sustainable garments, but also to investigate purchasing criteria, priorities, actions taken and issues been faced by other customers who are interested in more sustainable clothing options. It is also important to compare the identified criteria of the customers to the definitions and criteria suggested by the sustainability field.

Finally, it was decided to analyze annual reports of three mass market textile enterprises to identify how they correspond to the demands of customers who are interested to procure more sustainably because it was identified during the internship in Sustainable Public procurement team (UNEP) that there is little research on corporate sustainability, especially in sustainable procurement area. That became the motivation to find more about the sustainability initiatives of the textile industry and if they correspond to the demands of the customers and sustainability definitions suggested by the sustainability science field.

- 1. What are the drivers of purchasing behavior of the customers interested in sustainable garments: priorities, criteria, expectations, definitions, and misconceptions?*
- 2. What are the issues faced by the customers interested in sustainable garments and are these issues also the reasons why other people remain indifferent to the sustainable alternatives for garments?*
- 3. Supply chain sustainability after Covid19 disruption: a step back, a breakthrough or just greenwashing?*

2 Theoretical Framework

In this chapter, the main theoretical framework is described, starting from Globalization and Sustainable Development. It is important to understand what Globalization is because current textile industry is highly globalized and often involves actors located in different parts of the world. Furthermore, it is crucial to investigate the sustainability theories in sustainable development discourse because it provides the definitions for what is sustainable in garment industry. Building on the sustainability discourse, the concepts of Circular Economy and Circular Business Models follow. Next, Global Production Networks are discussed to give a perspective into the production process of garments through interactions with different actors, including shareholders, governments, customers and businesses partners. The chapter ends with the concepts of Greenwashing to provide a tool to differentiate greenwashing from sustainability initiatives. The combination of these theories is important as it provides definitions for evaluation of customers' criteria/priorities for sustainable garment procurement and companies which claim to be sustainable.

2.1 Globalization and Sustainable Development

Globalization is what allows the companies, including textile industry, to distribute their supply chain across various parts of the world yet remain interconnected. Most of the academic research on globalization focuses on its objective dynamics, such as global financial transactions, the impact of new digital technologies, greater global mobility in terms of commodities and people movements, and global cultural flows (Steger & Wahlrab, 2016). According to Friedman (2007), technical advancements such as the internet and inexpensive and rapid transportation are causing the world to become 'flat.' Practically everyone became a part of what Friedman (2007) refers to as globalization during the tough period of pandemics because of increased usage of online communication tools for work, social life and almost all other imaginable aspects of life. Globalization allows firms to reduce the production costs and therefore increase the profits. However, it is evident that distance often results in tragic compromises in environmental and social sustainability because the consumers and the headquarters do not see the negative implication directly (Arslan, 2019). Thus, it is important

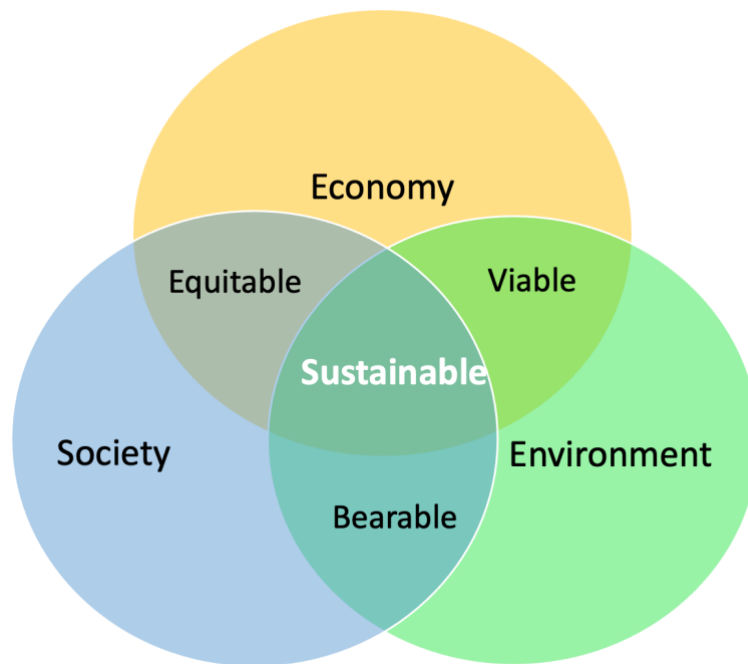
to investigate why companies opt to locate their supply chain globally (see section 2.3) and how it can become more sustainable.

Detrimental consequences of globalization and neo-liberalization in for environmental and social wellbeing became the inspiration for the key criterion for sustainable development (McMichael, 2017), which is described as "development that fulfills current demands without jeopardizing future generations' ability to satisfy their own needs" (Brundtland, 1987). This definition has its own history. When the International Union for Conservation of Nature (IUCN), in partnership with the United Nations Environmental Programme (UNEP) and the World Wildlife Fund (WWF), launched their World Conservation Strategy in 1980, it was the first time the phrase "sustainable development" was used (IUCN, UNEP, WWF 1980). The necessity for economic growth that encompasses both social and economic dimensions drove this early vision of sustainable development. It was critical to address conservation while realizing resource constraints and ecological carrying capacity. That is why, in 1987, the World Conservation Strategy was succeeded by 'Caring for the Earth'. This new approach was based on the notion of alternative development and promoted people and ecology-oriented development (IUCN, UNEP, WWF 1991).

Alternative development focuses on reframing development goals prescribed by the previous strategy 'Caring for the Earth' as well as identifying and promoting alternative methodologies (Brun et al., 2014) Writing and working with alternative actors, utilizing alternative approaches, and generating alternative development goals are all examples of alternative development. Instead of viewing alternative as a binary opposition to mainstream, the authors think that alternative approaches should be oriented on a moral and political aim that challenges the status quo (Brun et al., 2014). Fairness is one of the most important aspects of alternative development. People have a right to participate in the development of information and decision-making about the social and physical environment in which they live, and distributive justice, or the distribution of "goods" and "bads," is a fundamental problem, as is procedural justice. The research process, which demands constant reflection and debate among research colleagues, is likewise subject to procedural fairness. The main elements of alternative development within the wider notion of justice are social practice, participation, and empowerment, with an emphasis on postcolonial and other marginal countries. Individual experiences as well as how people and local groups mobilize to impact change are used to define agencies (Brun et al., 2014).

Barbier's (1987) work looks to be the antecedent of the commonly used circles diagram, and it provides a framework for encouraging the maximizing of three systems' aims, and it was this researcher who first counted the 'three-pillar' concept (Barbier, 1987 in Purvis et al., 2018). However, many scholars presently refer to a system that differs slightly from Barbier's, in that one system gives three unique but linked systems, whilst the other system provides three distinct but interrelated views or schools of thought (Brown et al., 1987 in Purvis and Robinson, 2018). Later on, formulations such as Elkington's '3Ps' or Caradonna's '3Es' (environment, economics, equity) became popular, which encapsulate broad principles and blur the borders between systems/perspectives divisions.

Figure 2: The Tripple bottom line of sustainability



Source: Elkington (1997)

Based on Elkington's (1997) concept, the author of which has coined the term "Tripple bottom line of sustainability", a Venn diagram with the triple bottom line is a visualization that can help to understand the interactions between different aspects of sustainability. The intersection of the circles in the Venn diagram's center illustrates how sustainable development encompasses development that is both socially, ecologically, and economically acceptable. There are a lot of other less desired alternatives out there. "Bearable" space represents the

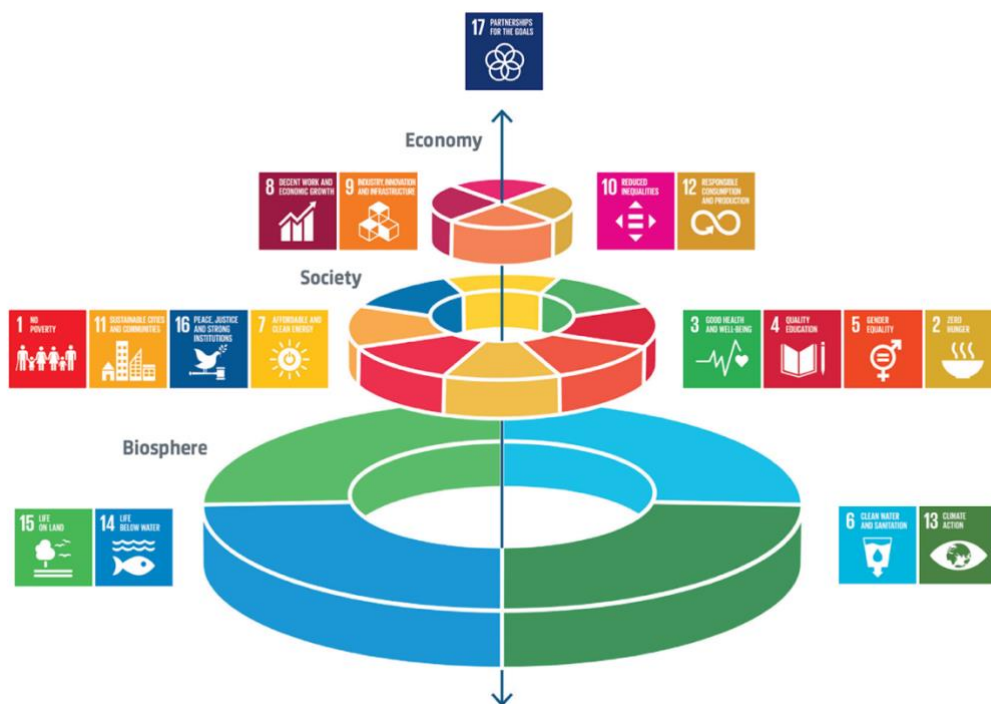
businesses that don't harm natural environmental people, but this compromises the project's capacity to be financially successful. This situation is common for social business model, for instance. While "equitable" projects are financially successful and contribute to society in a way that garners approval, it is also excessively costly to the environment. Finally, the projects that are "viable" are commercially successful and do not have a significant environmental impact, but there is still detrimental impact to the society. Currently, there are not many companies which can be characterized as sustainable, meeting all three parameters because textile industry often compromises both environmental and social aspects of sustainability. It is evident that 59% of companies are greenwashing their customers (Changing Markets Foundation, 2022). That is why the sustainability model presented by Elkington (1997) will be used to analyze the actions of companies and customers in this research, whether they incorporate both environmental and social sustainability in their approach.

Just sustainability is the next definition of sustainability that combines social justice with the triple bottom line paradigm. This paradigm was a response to something that many viewed as the social unfairness of Brundtland's original sustainability model, which resulted in a large number of disadvantaged individuals achieving sustainability while just a few affluent people did (Smith, 2007). As a result, just sustainabilities shift from a venn diagram to a nested venn diagram, which depicts interconnected economic and social systems in a limited natural environment where all people, regardless of social status, geographical location, or time, have equal potential for achieving sustainability (Smith, 2007). This notion gave rise to the well-known wedding cake model, which was created by academics at the Stockholm Resilience Center and depicts the concept of just sustainability in the form of SDGs. Nevertheless, sustainability injustice is still present across the supply chain of fast fashion companies (Bick et al., 2018).

A so-called Wedding cake, devised by Stockholm Resilience Centre (2016) and influenced by Brown et al. (Brown et al., 1987) is one of the most unique conceptions of sustainability and it is built based on the concept of SDGs. The Wedding cake depicts not only the interdependence of the economic, social, and environmental sectors, but also how the lack of a good environmental foundation may negate economic and social gains. The total of 17 Sustainable Development Goals (SDGs) were set in 2015 by the United Nations General Assembly to connect all three pillars of sustainability and to highlight the importance of implementation in more economically developed countries because there are many ways to assess development.

When both, social and environmental factors are considered, most countries can be considered as developing countries (United Nations General Assembly, 2015). This is why it is important to continue the growth towards sustainability in all countries. However, SDGs are accused for being controversial, technocratic, and having an excessive emphasis on global indicators. This ought to serve as a reminder to decision-makers that there are no general solutions and that every country must determine its own path toward sustainable development. Nevertheless, SDGs and sustainability itself are very important concepts for this research because they provide a clear definition of what is sustainable: the inclusion on all three aspects (economy, society and environment).

Figure 3: The SDGs wedding cake



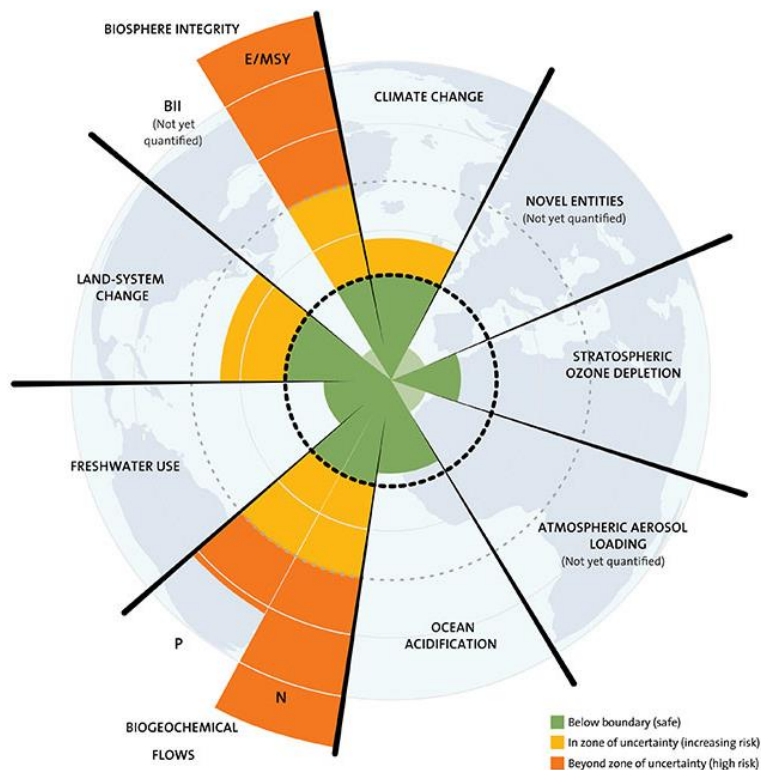
Source: Azote Images for Stockholm Resilience Centre, Stockholm University

Scholars use a variety of methods to try to determine the limitations of sustainability. 'Planetary boundary' (Rockström et al, 2009) is perhaps one of the most well-known and widely accepted sustainability limit hypotheses. The notion of planetary limits tries to estimate a safe operating environment for humans in terms of the Earth System's functioning. The researchers aimed to identify major Earth System processes and assess their limits, which should not be exceeded if humanity wants to prevent excessively rapid global environmental change (Rockström et al. 2009). Seven planetary boundaries were quantified: climate, stratosphere, and ocean systems;

biophysical features of Earth that contribute to the underlying resilience of its self-regulatory capacity (marine and terrestrial biodiversity, land systems); and two critical features associated with anthropogenic global change (aerosol loading and chemical pollution) (Rockström et al. 2009).

Three of these boundaries—climate change, biosphere integrity, biogeochemical fluxes, and land-system change—are assessed to have already been surpassed by mankind (Steffen et al., 2015). Rockström et al. (2009) mentions that new data may influence the planetary boundaries to change, and scientific uncertainty is a certainty. The need for environmental precaution is critical and that is why the conceptual framework for planetary boundaries itself advocates a very cautious approach, by placing the distinct limit number at the lower and more conservative limit of the uncertainty range (Rockström et al., 2009).

Figure 4: Planetary boundaries

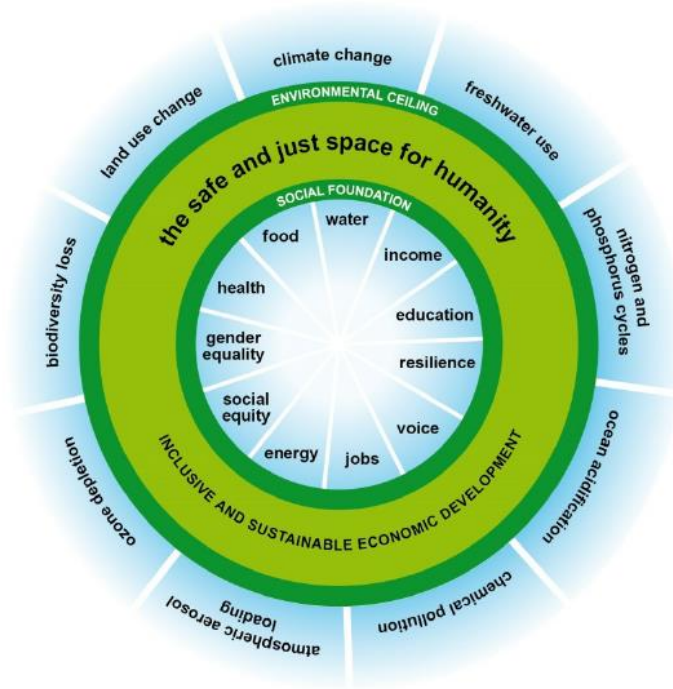


Source: Rockström et al. (2009) and Steffen et al. (2015)

Dearing et al. (2014) suggest that economic development should take place inside a safe regional environment based on the notion of planetary boundaries. Dearing et al. (2014) have

combined the planetary boundary framework (Rockström et al., 2009) with the social 'doughnut' framework (Raworth, 2012) to create a new framework and tool for identifying safe and just operating zones for sustainable development in a given location (see Figure 6). Dearing et al. (2014) provide readers with two instances of Chinese areas that are both located inside the same country but have drastically different sustainability challenges.

Figure 5: social 'doughnut'



Source: Dearing et al. (2014), *Safe and just operating spaces for regional social-ecological systems*

Based on the sustainability definitions discussed above, the garment industry should focus on making its products in a way that they don't violate environmental or social aspects of sustainability, support the targets identified with SDGs and limit the impacts of the business within the planetary boundaries. In order to count as "sustainable", the companies should establish a sustainable approach in all stages of production across the entire supply chain. Based on the Life Cycle Analysis from La Rosa and Grammatikos (2019) on cotton, the producers should use sustainable materials for their products, and thus, natural materials must be either organic or recycled. Natural materials have a big advantage as they can absorb CO₂ from the atmosphere while growing, and they do not release microplastics during the laundry process. However, just biodegradable materials are not sustainable enough if they were grown with

pesticides and other unsustainable farming practices. Some materials are highly water consuming, such as cotton, and thus they can't be considered sustainable even if grown in organic way, if grown in an area lacking fresh water supply (La Rosa and Grammatikos, 2019). Thus, it is crucial to consider not only the naturality of materials, but also the farming practices.

Another sustainable option for sustainable materials for garments is recycled materials. In regard to recycled materials, they do not have as much impact compared to newly grown natural materials (even those grown organically) because recycled materials are very energy and resource efficient as they don't require land or water for growth (Wendin, 2016). Moreover, despite the fact that synthetic material production heavily relies on the extraction of natural resources, such as petroleum, synthetics can be considered to be sustainable if made from recycled materials. Even though plastic materials are currently impossible to recycle infinitely, there is an estimated 92 million tons of textile waste, including synthetic materials, created annually from the fashion industry (Ellen MacArthur Foundation, 2017). Therefore, there are enough synthetic materials to recycle for new garments and there should be enough old synthetic materials to last for a long time. Moreover, if treated wisely, it is possible to avoid the release of microplastics in the domestic environment. There are many products that can help to prevent this issue, such as microplastic filters and washing bags for catching microplastics (Wang et al., 2020). That is why recycled synthetic materials also fit into the category of sustainable materials.

2.2 Circular economy

Sarkis (2020) argues that the covid19 crisis can become a valuable lesson for the supply chain management. According to Ellen MacArthur Foundation (2022), circular economy is a framework for systems-level solutions that may address issues including pollution, waste, biodiversity loss, and climate change. The three pillars of the circular economy are: reducing waste and pollution; reusing goods and resources; and restoring nature. The switch to renewable energy and materials is the foundation of the circular economy (Ellen MacArthur Foundation, 2022).

According to Sarkis (2020), in particular, circular economy and localization can promote the resilience of the supply chains since localized supply chains can avoid the risks of disruptions, such as covid 19. A circular economy allows the companies to utilize the local waste for creating new products with less energy and costs (Leal Filho et al., 2019). That is why a circular

economy can become a great solution for garment industries too so that the production becomes more localized and utilizes the old garments donated into the local recycling boxes.

According to Ellen MacArthur Foundation (2014), there are three principles for circular economy: 1. Preserve and improve natural capital by controlling finite stocks and balancing the flow of renewable resources; 2. Maximize the yield of resources, circulating products, components and materials in use at the highest level of utility at all times, both in the technical cycle and in the biological cycle; 3. Stimulate the system's effectiveness, revealing and excluding negative externalities from the beginning, thus generating positive impacts. It is important to investigate if textile companies follow these principles for the garment production.

Furthermore, there are five Circular business models proposed by Lacy et al (2015). First is called Circular supplies which is a business strategy that relies on providing completely recyclable, biodegradable, or renewable resources to support circular systems of production and consumption. The second business model is resource recovery in which waste materials are turned into new resources, makes use of technical advancements and capabilities to recover and reuse resource outputs. This avoids material leakage and optimizes economic value. The third is product life extension, It aids businesses in extending the lifespan of their goods and resources to make sure they stay to be profitable. Through processes like remanufacturing, mending, upgrading, or remarketing, material that would otherwise be discarded is retained or even upgraded. This model should be utilized especially by the textile industry because the sustainability issues present in the sector are originating or exacerbated by fast fashion (Anguelov, 2015), the textile products which are not meant to last for longer than one season (Ellen MacArthur Foundation, 2017).

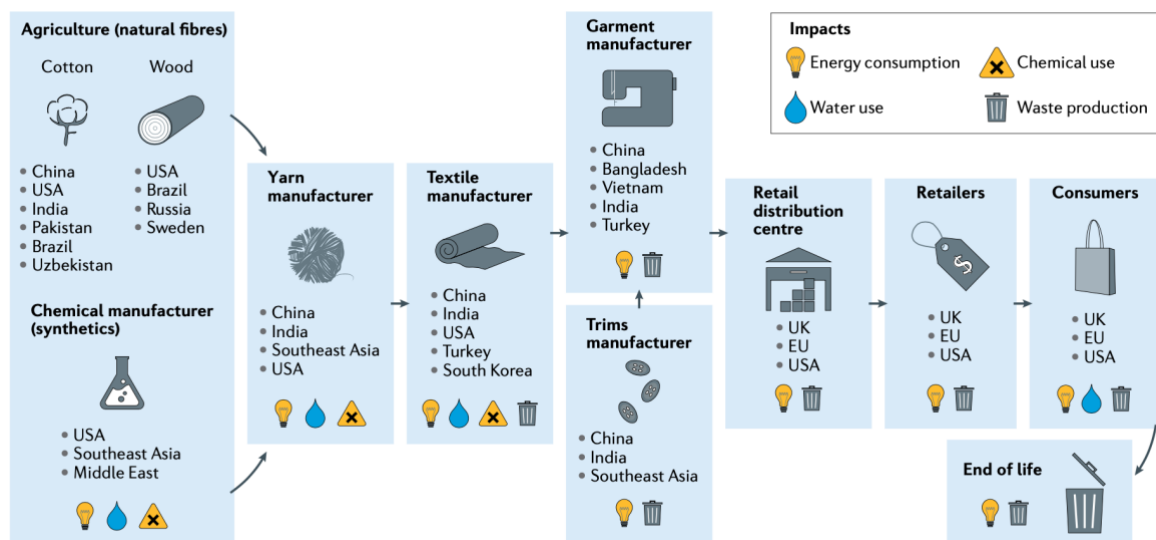
The next business model is called sharing platforms. The sharing of goods and resources with low ownership or usage rates is at the heart of the sharing platform business model. Businesses that follow this strategy may increase productivity and value generation while getting the most out of the goods they offer. According to Sarkis (2020), the companies which experience less demand from customers and resulting excess products should implement this model especially during the covid19 pandemic and in the post-pandemic world. Last, product as a service, which, as opposed to the traditional buy-to-own strategy, allows customers to use things through a lease or pay-for-use agreement. For businesses with significant operational expenses and the capacity to control the maintenance of that product and regain residual value at the end of its lifecycle, this approach is appealing. This model can be implemented in the textile industry for

the items that are expensive and difficult to maintain without special equipment, such as fur coats, shoes, bags, costumes, or fancy dresses etc. It is important to investigate if any of these circular business models are used by the mass market garment enterprises chosen for this research.

2.3 Global Production Networks

This work concentrates on industrial sustainability in a globalized world connected through Global Production Network (GPN). The global network of connected processes, activities, and transactions is known as the Global Production Network. It serves to produce, deliver, and distribute particular goods or services on an international scale (Coe et al, 2008). As shown in Figure 7, each component of the garment supply chain is located all across the globe.

Figure 6: Garment-manufacturing supply chain.

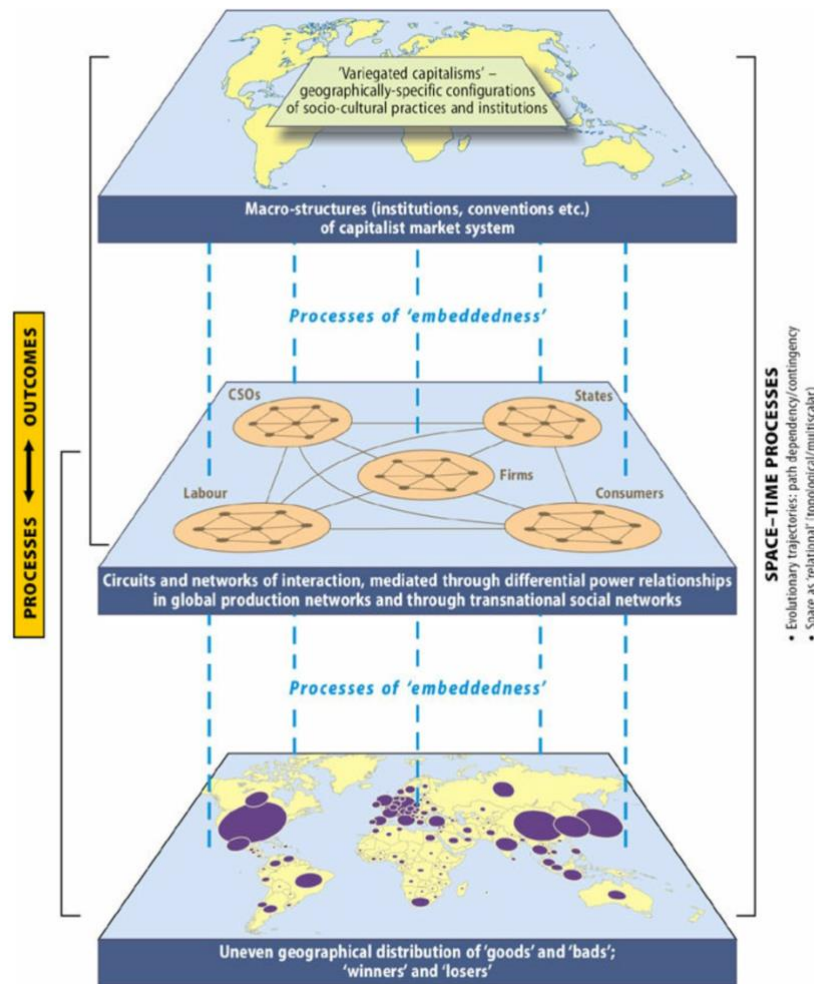


Source: Niinimäki et al. (2020), *The environmental price of fast fashion*, (fig. 2)

According to GPN theory in Dicken (2015), companies locate their branches in specific regions and countries due to certain rational reasons. The centre slice of the Figure 8, which represents networks, do not exist by itself. The networks are firmly rooted in the dominant geographic structures of the material world (the lower slice) while also being profoundly ingrained in the larger institutional macro-structures of the global economy (the upper slice). Geography and

history are important. The structures and trajectories of the past have a significant impact on the patterns and processes of the present and the future (Dicken, 2015).

Figure 7: A synoptic geographical perspective on globalization actors and processes



Source: Dicken (2004), Figure 2: Geographers and 'globalization': (yet) another missed boat?

According to Sarkis (2020), the companies can benefit from localization if they perceive covid19 pandemic as an opportunity and a lesson for their supply chain management. According to Lund and Steen (2020), offshoring and reshoring are examples of what MacKinnon (2012) terms decoupling and recoupling in the real world, and they add a significant evolutionary component to the dynamics of international production networks and territorial connections. In other words, reshoring implies the same process that Sarkis (2020) calls localization, when the companies relocate the remote parts of their supply chain back, nearby the rest of the supply chain. There is more and more evidence that some companies decided to reshore after disruption of covid19 pandemic into the supply chain. The new

evidence includes the case studies from Norway (Lund and Steen, 2020), Japan (Natsuki, 2022) and Commonwealth countries (Khorana et al., 2022). Thus, it is important to investigate if the textile companies took the covid19 crisis as an opportunity to relocate their supply chain components back to the home countries where they can use circular business models for a more sustainable production.

Dicken (2015) shows that, despite the claims of certain theories, the state undoubtedly continues to be one of the major factor in influencing the global economy. Often, the economic progress of many countries has historically depended heavily on their states and their relative power, as has the process of globalization itself (Dicken, 2015). There are three main factors that determine the power of the state: competitive investment, scarce resources and concentration of branches (Dicken, 2015). The author theorizes that states expect to yield material wealth from businesses in the form of taxes and increase the employment opportunities for its citizens. Conversely, the states must provide businesses with safe infrastructure and resources, such as labor, roads or raw materials in order to attract transnational corporations (TNCs) (Dicken, 2015). Moreover, according to Pike et al. (2018), there are different methods the states use to draft the development of their region in a desired way, either rapidly or slowly, for local people or for the economy. The range of tool includes tax reductions, subsidies and contracts form the state. All of these tools can serve as a facilitator for increasing the number of businesses desired in a specific region, and more and more governments use it to increase the ratio of companies with a more sustainable model in some sectors.

On the other hand, there are certain reasons why companies collaborate with different domestic/foreign firms. Cost-capability ratio is the ratio between development, production, distribution cost, and the product's quality/quantity (Yeung and Coe, 2015). In other words, cost capability ratio implies the ability to produce high-quality goods with lower costs if they are produced on a larger scale. This phenomena is also been discussed in a cluster theory. A cluster is a geographically close-knit collection of connected businesses and related organizations in a given industry, brought together by their similarities and complementary skills (Porter, 2000). According to Giuliani (2005), the absorptive capacity of a cluster goes beyond the sum of the capacities of the individual enterprises.

There is increasing evidence that scale economy can help to reduce costs and increase efficiency for the garment industry. The theory of economies of scale describes the link between the output rate of the business and the level to which a correctly chosen combination

of all productive services is used. This theory, in its broadest sense, is a fundamental component of the economic theory of social organization since it serves as the foundation for all discussions of market organization and the function (and location) of governmental control over the economy (Stigler, 1958). According to Datta and Christoffersen (2005), scale economies, which are indicated by changes in the average cost curve, technical change, which results in a downward shift in the unit cost curve, and the factor bias of technical change, which modifies the ideal level and combination of inputs, are all ways to reduce costs. In the garment industry, scale economies grew from 0.85 for the years 1953 through 1962 to 1.17 for the years 1993 through 2001. A faster rate of technological advancement in textiles than in apparel is shown by the fact that annual cost reductions from technical change in textiles have averaged 2.4% compared to 0.6% annually in apparel. Technical advancement has reduced labor costs and increased capital use in both industries (Datta and Christoffersen, 2005). Thus, garment industry should focus more on modern ways to reduce costs rather than compromising the wages or safety of workers or the wellbeing of the natural environment.

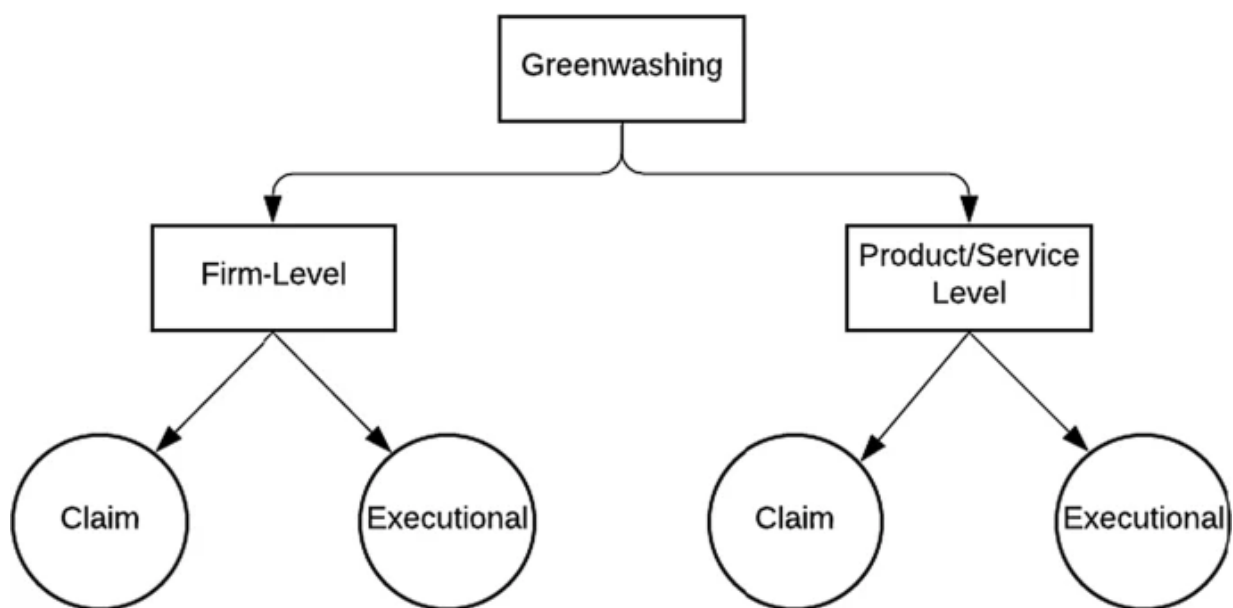
Another strategy that industries often utilize to lower the production costs is territorial asymmetry and regulatory arbitrage. Regulatory arbitrage is a business strategy where companies take advantage of more benevolent rules in one country to get around less benevolent regulations elsewhere (Dicken, 2015). Despite being frequently seen as immoral, this method is frequently legal since it exploits already-existing loopholes. This strategy often allows to lower production costs and to improve cost-capability ratio at the cost of regulatory differences across different countries which frequently results in unsustainable production practices such as environmental pollution or modern slavery.

According to Yeund and Coe (2015), the reason why companies are extremely eager to reduce production costs and increase the profits is lies in financial discipline. This term is referring to the fact that firms rely on capital investments and thus they must ensure the return of interest rates for the shareholders along with further investments of new shareholders at all costs. This process is called financial discipline, and it can be traced down to the 1980s. Financial discipline is one of the main reasons why companies are constantly seeking better opportunities in different countries and with different suppliers because it became significant for businesses to attract more and more investors and to satisfy the shareholders who invested already.

2.4 Greenwashing in textile industry

Greenwashing has become a big issue for sustainable development because it hides environmental and social issues caused by businesses, covering them with isolated and often minor contributions to sustainability. According to Freitas Netto (2020), despite a variety of different definitions for the term “green washing”, most scientists tend to agree that it means the phenomenon of two main behaviors happening simultaneously: disclosing unfavorable information about the company's environmental performance while also highlighting any positive environmental performance data. Following the results of a thorough analysis of the literature, the study has identified four main categories of greenwashing: “firm-level executional, firm-level claim, product-level executional, and product-level claim” (de Freitas Netto et al, 2020, p. 1).

Figure 8: Main greenwashing classification



Source: Freitas Netto et al (2020), Concepts and forms of greenwashing: a systematic review

To begin, Delmas and Burbano (2011) have identified two categories of greenwashing: firm-level (organization's environmental practices) and product or service-level (the environmental consequences of a product or service). Freitas Netto et al (2020) took the classification of greenwashing even further, dividing the categories mentioned above into false claims about organizational practices and product/service impacts; and executional firm-level and product-level greenwashing (see Figure 9). To specify, greenwashing claims, which been studied the

most, compared to other types of greenwashing, according to Freitas Netto et al (2020) analysis, refer to the use of textual arguments to falsely claim that a product or service has environmental advantages. According to Parguel et al. (2014), executional firm-level and product-level greenwashing often include backgrounds with images of endangered animal species, sustainable energy sources, including hydropower and wind energy, or natural settings, such as mountains, forests, and seas. The empirical findings revealed that although expert customers were not considerably impacted, the existence of executional aspects in advertising that evoke nature increased non-expert consumers' impressions about the sustainability level of the brands. While the authors above concentrate more on the environmental aspect of greenwashing, Lyon and Maxwell (2006), named this phenomenon of greenwashing “selective disclosure” and in their work, they referred to both social and environmental aspects of sustainability, which is why this work also considers both environmental and social aspects of greenwashing that can be found in the data-collection phase.

The reasons for greenwashing are rather simple: an increase in the profits for the company. According to a report from Simon Kucher and Partners (2021), 77% of global consumers think that SDGs are important, finding environmental and social sustainability equally important. Moreover, 85% of people have undergone changes in their lifestyle towards more sustainable in the last 5 years ranging from minor changes to total lifestyle changes. Importantly, there is a clear generation gap regarding purchasing behavior, with only 24% of baby boomers choosing more sustainable products while 29% of generation X and Z and 33% of millennials tend to buy sustainably. When it comes to willingness to pay more for sustainable items, the gap is even more dramatic with millennials leading again with 42% of customers who are ready to pay 31% higher prices. They are followed by 39% of generation Z who are ready to pay 32% more, and 31% of generation X (willing to pay 21% higher price) while baby boomers account for only 26% and would be willing to pay just 14% more. While these numbers are the total for all products categories, and there are no numbers specifically for the textile industry, this research is important as it sheds light on the textile industry specifically and identifies the customers' attitude regarding their sustainable purchases.

According to Grimmer and Bingham (2013), customers are more likely to spend more on items from companies they believe to be more socially responsible. Thus, the growing demand “drives firms to develop green marketing strategies to show consumers their good corporate image and social responsibility” (Zhang 2018, p. 740). Greenwashing also goes hand in hand

with corporate legitimacy theory. According to Seele and Gaiti (2015), the sociocultural context, in which an organization operates, serves as the foundation for cognitive legitimacy and thus, moral evaluations of the organization's actions and conduct are necessary for moral legitimacy. As a result, pragmatic legitimacy becomes the outcome of the organization's main stakeholders' self-interested calculations, and it is based on stakeholders' judgments of their own gain resulting from corporate operations and communication (Seele and Gaiti, 2015). And while sustainable development is often referred to as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (Brundtland, 1987, p. 15), this definition has nothing in common with greenwashing practices that most companies do nowadays to a certain degree. According to TerraChoice report (Ottman, 2010), a minimum of one of the "sins of greenwashing," such as the hidden trade-off or the usage of fake labels, was committed by 95% of items marketed as "green" in Canada and the United States. That is why it is crucial to differentiate greenwashing from genuine sustainability efforts that actually can make a difference and improve environmental and social aspects of sustainability.

Greenwashing is one of the most complicated issues for customers who are interested in purchasing more sustainable garments. That is why it is crucial to investigate the awareness of the problem. Also, it might be one of the biggest reasons why other people remain indifferent to sustainable alternatives in the garment industry. Thus, it is significant to look into this theory and prove or disprove it by going through the last annual reports of the textile companies.

3 Research Methodology

3.1 Research design

The selected methodological strategy in this study is described in detail in this chapter. The research design is characterized, along with a brief explanation of the research approach, which is a combination of qualitative interviews, three quantitative surveys, and text analysis of the annual reports of the textile companies. This section is followed by the reasoning for the chosen approach in relation to the goals of this study. The choice of the study sample is then described after the explanation of the methodology used in this research. After an explanation of data production and analysis, a section concerning problems in terms of methodology is included. The positionality of the researcher during the interview and analysis processes is also followed, along with ethical issues.

3.1.1 Approach

Qualitative approach

Winchester and Rofe (2016) suggest that the study of human experiences can benefit from the use of qualitative research methodologies. In order to attain representativeness, a quantitative method frequently places more emphasis on bigger samples. Therefore, this method would have been more suited for a demonstration of, perhaps, sustainable buying habits or influencing factors on purchasing choices. However, in terms of my research goals, I sought a detailed investigation of subjective views rather than representativeness. I wanted a thorough grasp of how different facets of a person's narrative related to one another. Moreover, I wanted to have open-ended questions where participants are not limited by any options and can tell their own unique opinions and issues they face when choosing which clothes are sustainable. A qualitative study may answer questions like "why" some people are buying more sustainable clothing items and "how" they choose their criteria, made priorities, and what they struggle with in the sustainable garment procurement process, whereas quantitative research results would have remained limited regarding my research questions (Braun & Clarke, 2013).

In-depth interviews

For my study, I decided to conduct in-depth interviews which accounted in six one-on-one interviews, each lasting around an hour and a half, sometimes even longer, up to two hours. Interviews, which include storytelling, are an excellent way to collect data for a study that examines individual choices, based on arbitrary viewpoints and experiences (George & Stratford, 2016). Moreover, in-depth interviews may capture intricate narratives, linkages, and many interpretations of an issue (Dunn, 2016).

The ability to ask open-ended or follow-up questions is one benefit of interviews. The latter enables clarification of the question asked and the responses provided, ensuring clear communication on both sides. As interviews provide the opportunity to ask for clarification, it helps to maximize the amount of information essential to the study. Additionally, it guarantees respect for the participants since the researcher may make sure that the thoughts and experiences of the participants are examined and presented as requested (Dunn, 2016).

According to Dunn (2016), structured, unstructured, and semi-structured interviews are the three basic categories into which interviewing methods are typically separated. To conduct this research, I used a semi-structured approach. While it was important to be flexible while asking questions, an interview guide provided some structure and direction for the interviews. It was crucial that I, as a researcher, was familiar with the subject, objectives, and questions when specific tales were recounted. On the one hand, my ability to adapt and my familiarity with the interview guide made it simpler for me to add a question from another section if it made sense in the given situation. On the other hand, I made an effort to ask rather open-ended questions in order to get as many facets and viewpoints on the subjects as I could, and this often required some flexibility and familiarity with the study subject. Consequently, deeper storytelling frequently resulted in the development of new questions which promoted greater data collection (Dunn, 2016).

I started by creating a list of the themes I wanted to research before proceeding with anything else. Then, I decided which of the major topics under investigation should be addressed in each of its numerous dimensions. After that, I tried to find the main points of the dimensions and utilize them to guide the creation of questions. According to (McGuirk and O'Neill, 2021), this

approach guarantees that each question has a purpose and is related to one or more parts of the investigation.

Thematic analysis and oral history

One of the most popular techniques used in qualitative research is thematic analysis, which falls under the category of pattern-based techniques (Braun & Clarke, 2013). This approach seemed to me to be the most suitable for my research, which sought to examine the patterns and meanings of many experiences and choices. The ability to record information about individual experiences and evolving perspectives through oral history led me to believe that a combination of theme analysis and this method would be acceptable (Tjora, 2012). As a result, I was able to get a more in-depth understanding and complete image of life stories and unique experiences (George & Stratford, 2016).

Quantitative approach and its reasoning

According to Guetterman et al. (2015), mixed method research utilizes the advantages of both, qualitative and quantitative methodologies, and it involves gathering, analyzing, and integrating the collected data. This type of research has advantages for the studies aiming to both, deepen the understanding and prove certain trends (Guetterman et al., 2015). This research incorporates both methods because during the interviews, some of the main trends were identified in terms of sustainable garment procurement, including sustainable priorities and criteria, expectations, misconceptions, sense of responsibility and various obstacles, resulting in personal approaches towards garment sustainability. Thus, it was decided to conduct quantitative research with questionnaires to collect quantitative data on the trends identified during the interviews. Therefore, three main questions were addressed to three different target groups.

First, the struggles identified from the interviews became the inspiration to ask the customers who are not interested in sustainable garments the reason why they are not concerned. The issues identified in the interviews were provided in a form of multiple options, but the participants also had an option to write their own answer.

Why are you not interested in sustainability?

1. It takes too much time to find
2. It is too expensive
3. There are no sustainable clothing shops in my location
4. It is hard to choose/understand what is actually sustainable
5. Other reasons

Second, it became clear from the interviews that sustainability criteria of customers often drastically differ from their purchasing behavior (personal approach towards garment sustainability) because of a number of issues confronted in sustainable garment procurement process. Thus, I decided to ask the customers who are interested in sustainability which criteria do they normally prioritize providing them with both sustainable options identified in the chapter 2 and sustainable approaches identified in the interviews.

Which criteria do you normally prioritize when you shop for sustainable garments?

1. Durability
2. Secondhand
3. Environmental sustainability (eco marks etc.)
4. Social sustainability (fair trade etc.)
5. Other criteria

Finally, it was identified in interviews that customers have varying sense of responsibility for sustainability of garments because some participants mentioned that the government should be proactive the most, while others identified customers' purchasing power to be the most responsible for garment sustainability.

Who should be the engine of change for sustainability of garments?

1. Government
2. Bussinesses
3. Customers
4. Organizations
5. Other stakeholders

In order to answer the new identified questions, the quantitative method was chosen to be conducted because certain trends in customer purchasing behavior were identified. According to the scientists in the field, in-depth information on people, their behavior, experiences, social

interactions, attitudes, opinions, and awareness of events may be gathered through questionnaires (Hay, 2016). Questionnaires are increasingly being used to collect data on complicated topics including the environment, social identity, transportation, travel, quality of life and community, employment, and social networks (McGuirk and O'Neill, 2021). While questionnaires have certain limits in terms of the qualitative data they can collect, they also offer many advantages. In the beginning, they can offer insights into societal processes, beliefs, attitudes, and interpretations. They can also be cost-effective, making it possible to do a comprehensive study on a broad or geographically scattered population, making them one of the most useful research instruments (McGuirk and O'Neill, 2021). This is especially true for online questionnaire surveys, where printing and delivery expenses may be kept to a minimum (Sue & Ritter, 2012). Third, they are quite versatile because they can be used in tandem with complementary, more in-depth qualitative research methods, including focus groups and interviews, to give deeper insights into social processes and context (McGuirk and O'Neill, 2021). This is the reason why I opted for this method since I wanted to obtain some numbers on key topics that I have identified during the interviews, such as definitions and misconceptions about and sustainable garments, common struggles, and a sense of responsibility for changes toward sustainability

Instagram platform was chosen as a tool for the questionnaires because it allows its users to make simple questionnaires with multiple answers. It is particularly convenient for the questionnaires which do not gather any sensitive information that can be linked to the person, such as age, education, or income level. In such cases of non-sensitive questionnaires, permission from NSD is not required and contracts are not necessary either. The absence of sensitive questions is one of the reasons why Instagram platform was chosen for the questionnaires because there is no personal data to protect. What remains significant though is to compose the questions and possible answers precisely, give clear instructions and provide the potential participants with some information about the research. My personal Instagram account was chosen as a tool for the distribution of a questionnaire question via 'stories', 10-second videos, or photos (it can be longer if the reader wants to have more time to read the information in it) and each can contain one survey with multiple choice answers (a, b, c, d.). If the answer is not provided as an option, participants had an opportunity to write their own answer with a direct message.

Archival research

In order to draw a comparison between the market demands and the sustainability initiatives that the textile companies implemented during the covid19 crisis, it was decided to make a text analysis of the annual reports of 3 mass market garment companies. The text analysis of annual reports was prioritized over qualitative interviews with CSR representatives because of the difficulty that was faced in obtaining contacts with the representatives. Due to the covid19 pandemic, big events involving both master's students and professors were almost absent and events outside the university were mostly held online. Moreover, the internships were also predominantly in online mode, and even when I went to work at the organization of my choice physically, there were no regular workers present because almost all of them preferred to work online from home. This has made the deeper establishment of any connections with regular workers very difficult for the interns and as a result, I hardly possess any connections which could help me to find CSR representatives for in-depth interviews. In summary, the covid19 pandemic made it very hard to meet new people and create new connections both in university, public events, and the internship. And thus, I opted to analyze the annual reports of 3 mass-market clothing companies to see what has changed in their approach and initiatives for sustainability during the covid crisis (2020-2021).

For the analysis of annual reports, archival research was chosen. According to Roche (2021), a subset of primary sources, known as archival sources, is what historians and historical geographers research, and it contains old government documents kept in public archives, but their scope can also encompass business files and personal paperwork. As emphasized by Summerby-Murray (2011), the unanticipated benefits of digitization have included a significant rise in legibility and easier access to materials for scholars. That is another reason why I decided to opt for this type of research regarding the sustainable initiatives of textile businesses since it was not easy to find contacts for their CSR representatives.

In archival research, there are two fundamentally different approaches. The first entails gathering information by topic and recording precise information with properly cited quotations. As additional files are reviewed and new research questions are created, new subjects can be added. The alternate strategy is to capture any relevant information from each file chronologically and then afterward discover themes that appear throughout the files (Roche, 2021). I decided to implement the first approach for my research because I already identified the specific questions and topics that I want to check in the annual reports (2020-2021) aiming

to identify if the companies implement their sustainable initiatives according to their demands of the customers interested in sustainability. And thus, it seems more logical to implement the first approach.

Analysis process

While the process of analyzing the questionnaires was quite simple and straightforward (mainly creating graphs in Excel), regarding the interviews and the annual reports, I tried to remember the data in the first stage of analysis by transcribing, reading the material again, and making notes on my initial observations. The generation of initial codes for the entire data set came next. To avoid becoming lost in the volume of data throughout the coding process, it was crucial to concentrate on data segments that were pertinent to the study's research topics (Braun & Clarke, 2013). I began sorting and classifying my codes in an effort to find themes, which enabled me to find "some kind of structured reaction or interpretation within the data set" (Braun & Clarke, 2006, p. 82). I studied my data using a top-down method that was largely focused on and supported by my theoretical framework. Then, I analyzed my codes and themes, compared them, and put them in relation after selecting the themes. Subthemes developed during this process, placing my collection of themes and codes inside the limitations of my research and the theoretical framework

3.1.2 Research sample

For the interviews, the candidates were chosen in a way that provides as wide a range of qualitative data as possible. There are candidates who currently live in Germany, the Czech Republic, Norway, and Japan. The reason why I chose these specific countries is that I know some people who are interested in sustainability topics living in these countries. Moreover, having participants from different countries can benefit the data collection by providing diversity to the sample. Furthermore, the participants from these countries are all in a similar environment because these countries are members of the Organization for Economic Cooperation and Development (OECD), which implies a higher level of economic development and prosperity than the countries which are not in this group. Thus, it is more likely that there are sustainable garments available in their locations.

Table 1: Interview Participants

Name	Country	Language	Age	Gender	Education	Income
Tiffany	Japan	Japanese	24	Female	BA	Lower
Maxim	Japan	English	24	Male	BA	Middle
Dora	Norway	English	25	Female	MS	Lower
June	Norway	Russian	25	Female	MS	Lower
Zoi	Czechia	English	29	Female	BA	Middle
Klara	Germany	English	24	Female	BA	Lower

The income levels were calculated according to the data provided in the OECD report (2019).

For the questionnaires, using Instagram became very useful for distribution to ensure diversity of the answers, even though it did not collect any persona data. My auditory in Instagram accounts 449 young individuals from various countries, with different social class and interests. According to McGuirk and O'Neill (2021), questionnaires are frequently used in quantitative research to gather data from a representative sample of a community in order to make generalizations about its traits, behaviors, and attitudes. The sample, which is a subset of the population, is chosen to be representative of the population so that it is possible to calculate the mathematical chance that the sample's characteristics will also be present in the larger population (May, 2011). In these situations, a list of the key population characteristics—the sampling frame—is necessary in order to create a sample (McGuirk and O'Neill, 2021).

However, according to McGuirk and O'Neill (2021), purposive sampling is specifically employed when inviting participants based on a shared trait, such as a social category (for instance, male single parents), a behavior (for instance, women who use public transportation), or an experience (for example, victims of crime). This is applicable for the questionnaires, as the goal of those questionnaires is to investigate the behavior, experiences, and struggles of a specific social group: young people who are/are not interested in sustainable clothing. As McGuirk and O'Neill (2021) continue, this kind of sampling is not subject to any rules, but instead, what determines the sample selection and size is the scale, nature, and goal of the study

as well as the expectations of the research communities. That is why the candidates were chosen primarily based in their interest or indifference in the topic of sustainable garments.

For the archival research, I decided to choose 3 mass market garment companies of a large scale because these are the biggest companies in the sector and thus might have the most negative impact, possess the most influence on the industry trends and other companies within the industry, and importantly should be able to afford a broad range of sustainable initiatives in their business, because of economy of scale (Yeung and Coe, 2015). The enterprises were chosen in a way to diversify the sample, so as H&M represents northern Europe, Inditex stands for south Europe and Fast Retailing represents Asian region. All companies originate from alike well-developed economies, specifically: Sweden, Spain, and Japan. This allows a better analysis to be performed, because these companies have similar scale and distribution markets. In the future research, it would be interesting to include similar size enterprises from other parts of the world too to collect data and draw more comparisons.

Information for participants

For the interviews, the participants' email addresses were stored throughout the entire study so that project-related materials like the information letter and consent form could be distributed. The appendix contains a summary of these materials. The project's title, objective, study field, and scope were the primary topics covered in the information letter. It was crucial to provide participants adequate information so they were aware of what they would be doing (Dowling, 2016). At the same time, it was important to avoid providing participants with too much information about the study's objectives in a way that would lead them to certain conclusions. In other words, it was important to avoid conveying expectations in a way that might influence the research results. I also included the information that explained the purpose of the questionnaires and the main research questions so that people who see the post would be more interested to participate.

Confidentiality

For the interviews, in order to protect the participant's privacy and confidentiality, the research project relied on the approach of informed consent. Before the interviews, participants received information letters and consent forms. Information on the interview process, interview recordings, and the usage, storage, and anonymization of the data were reiterated at the start of

each interview. Verifying that everyone had a clear understanding of their role in the project and how their information would be handled and utilized was vital too.

As for the questionnaire, the participants were informed that the data will be stored and shown in the research only anonymously, in the form of numbers on a graph. Regarding the archives of the chosen textile companies, all of the documents used in this research are publicly available, so that there is no need for anonymity and the brand names can be written explicitly.

Anonymization of interview results

Each interview participant has also been assigned a pseudonym. It was decided that using names rather than phrases like "buyer 1, 2, or 3" would be more suitable as I analyzed complicated purchase decisions and the contexts of those actions. This, I discovered, would facilitate the researcher's and reader's ability to track and contrast tales across the data set (Braun & Clarke, 2013). In addition, potentially identifiable details in the data material have been altered for anonymization. For example, some hometown names were left out of this study if they were from relatively small communities.

Data management

Zoom was used to conduct digital interviews. In order to protect the privacy and secrecy of the participants, recordings were kept on an external Dictaphone device. They were saved for the duration of the project so that the data could be transcribed. In order to lose as little data as possible, the direct transcription approach was used during the transcription process. By the time the experiment was over, all recordings and other data were erased just as was promised in the information list.

Making notes throughout the interviews and the transcribing process of the gathered material was crucial for the entire research. They contained thoughts on the research method, the researcher's role in the study, and the researcher's participation in it. The notes also included, for example, further details or concepts for potential alternative views or linkages to theories, which supported the analysis later on.

3.2 Methodological challenges

In semi structured interviews, it was particularly hard to stay uninvolved when talking about the topics that deeply concern and interest the researcher. It was hard to not manipulate the

answer in any way, by unintentionally providing the “right answer”. This was hard because many questions that were asked were not prepared in advance because each qualitative interview brought a new very unique story of a personal journey towards sustainability and conscious consumption. And that was the reason why it was particularly hard to ask questions sometimes without providing bias from the interviewer so that the participants don’t acquire a hint from the researcher. The issue was resolved by making it clear to the participants that they don’t have to agree or choose any of the options mentioned as those to serve just as examples for the question. For example, when the participants were asked “do you recycle your garments,” it was also added that they are not obliged to recycle their clothes, the question aims to reveal what happens to the garment items at the end of their life cycle or when the owner wants to abandon it for any other reason. Another challenge was to in language differences since the interview candidates were from different countries. For this reason, the interviews were held in three languages in total, English, Japanese and Russian.

Regarding the questionnaires, it was crucial to keep in mind different time zones in order to reach as many survey participants as possible because my auditory in Instagram includes people who live in Asia, as well as Europe and Northern America. Thus, I selected to post surveys approximately 9 am (GMT+2) so that the viewers on both east and west sides of the world have access to the survey in the evening when most people gave some free time. Another factor that was considered was languages because my auditory in Japan tend to disregard posts in English because of the language barrier. According to Crang and Cook (2007), language should be taken into account while selecting a research site and subject matter experts. Language barriers can make it difficult for the researcher and the participants to communicate and can also have an impact on how the data is interpreted (Crang and Cook, 2007). Thus, I created each survey in English and Japanese so that more participants can provide their answers.

Moreover, I took into consideration that the participants may edit or modify their responses in accordance with what is seen to be socially desirable. In other words, individuals might not disclose socially unacceptable behaviors or viewpoints, like racism or denial of climate change, or unpleasant experiences, such as unemployment, for example (McGuirk and O'Neill, 2021). Therefore, each question must be thoughtfully examined in light of the environment and have a distinct role and purpose suited to the social and cultural norms and expectations of the participant group (Madge, 2007). In this regard, it was also helpful to inform the participants

that the results will be stored and presented in the research only in an anonymous form of numbers.

It is important to be aware that there is a chance that not all sustainability innovations are included in the annual reports. According to (Roche, 2021), when it comes to archival research, what remains in the file is probably simply a fragment and may only provide very limited historical context. However, I believe that the reports contain the biggest sustainable changes, which is sufficient for this project, because the purpose of annual reports is to advocate the deeds of the company and make it appeal to new investors, shareholders, customers, and other stakeholders. This is supported by the theory of corporate legitimacy theory, explained by Seele and Gatti (2015), which implies that the company has to be meaningful for society in order to continue to exist and prosper (see Chapter 2).

Moreover, there is also a chance that annual reports do not include all the negative/unsustainable information. This assumption goes hand in hand with the statement from Beel et al. (2015), who emphasize that archives are created, molded, generated, and manipulated by their writers. Thus, it is crucial to keep in mind the different power dynamics present in the surviving materials while working with documents found in a formal government archive. According to Roche (2021), this goes beyond simply admitting that the preserved files are incomplete and fragmented. Records frequently reflect the views and interpretations of the dominant groups in the area at the time they were made because they were generally established by elites and authorities. Summarizing the information contained in archived files as the "truth" only reinforces existing inequities in power rather than addressing them (Roche, 2021). Therefore, it is significant to acknowledge the fact that the annual reports only contain the information approved by the management of the companies, and thus contain little criticism of current environmental or social problems that the company might have. Thus, it is significant to evaluate the efforts of the companies in accordance with the scientific theories described in chapter 2 which suggest clear criteria for textile sustainability.

3.3 Ethical considerations

Because human geography study frequently focuses on how other people interpret their cultural landscapes, cross-cultural considerations are frequently necessary to avoid misunderstandings and uncomfortable conflicts (Howitt and Stevens, 2016). In the framework of my study topic, it is frequently believed that members of the so-called "Globalized world" have a lot of cultural

similarities. However, I felt it was crucial to approach my interactions and talks with the participants with cultural sensitivity and thoughtfulness because I was aware that there are underlying cultural variations that give rise to different expectations for things like interpersonal interactions and points of view. For example, even though Japan is very modern and developed country, it is considered to be rude to express opinions in a direct way, so that it is important to clarify the answers in a respectful way by paraphrasing it into a more direct answer so that the participant can either agree or disagree and further clarify the point.

In order to maximize the amount of relevant information acquired during the interviews, Dunn (2016) contends that it is essential to foster an "interpersonal environment" (p. 160). Making the participants feel at ease should be a priority concern throughout the whole relationship, including the initial contact via social media and email. Giving participants thorough information about the study makes them feel comfortable, which enhances the quantity of information they are contributing (Dunn, 2016). In order to improve the desire and capacity of participants to express their ideas and feelings throughout the interview, it was my intention for the study to maintain both a professional and personal channel of contact. I think that conducting the research in a knowledgeable, competent, and professional manner, together with a face-to-face discussion, was helpful in achieving the goal of obtaining as much information as possible.

The ethical obligations of archival researchers are increased by the fact that the people who created or are the subjects of the records in question are almost certainly no longer alive and unable to speak for themselves (Roche, 2021). However, my research is based on the recent annual reports so that this issue is not relevant for this specific research. Yet, it is still important to be respectful to the information provided in the annual reports. According to Roche (2021), it is also important to be concerned with preserving the integrity of the information in the files and the preservation of the archives themselves. Thus, it will be significant for me to try to evaluate the information provided in the annual reports as it is, without inflating or minimizing the efforts of the brands that I like or dislike.

3.4 The role of the researcher and critical reflexivity

The next important aspect to be considered is critical reflexivity. According to Dowling, the purpose of critical reflexivity is to analyze the research process itself, different social relations, and their impact on data that has been gathered. Fieldwork diaries can be helpful for this difficult but necessary process (2016). The process of reflexivity should be present in every

stage of the research, including interviews, fieldwork, and analysis. There are two main aspects that a researcher must be especially reflexive about power relations and intersubjectivity. Regarding power balance, Dowling describes three main types of power relations between researchers and participants: reciprocal relationships, studying up, and a potentially exploitative relationship (2016). In this research, reciprocal relationships have been seen between the researcher and company representatives who will be interviewed.

Objectivity, Subjectivity and Intersubjectivity

It is also important to be critically reflexive of subjectivity and intersubjectivity in qualitative analysis. Qualitative methods cannot be absolutely objective due to the social interactions that become necessary for this type of the research (Hey, 2016). According to Hey, “subjectivity involves the insertion of personal opinions and characteristics into research practice” (2016, p. 39). Even though it is nearly impossible to avoid subjectivity in qualitative research, it is significant to analyze it through critical reflexivity to distinguish personal comprehension of the researcher. Defining subjectivity can help to conduct the research without fake objectivity. Intersubjectivity is also important as it “refers to the meanings and interpretations of the world created, confirmed, or disconfirmed as a result of interactions (language and action) with other people within specific contexts” (Hey, 2016.). Critical reflexivity helps to understand multiple comprehensions researchers and participants embrace on the same topic and its influence on the data and the research results.

Positionality

Positionality is an important aspect to be considered in all research stages. According to Rose (1997), it is significant to consider both the positionality of the researcher and the positionality of the participants. In order to avoid generalization and false objectivity, reflexivity is suggested (Rose, 1997). Therefore, it is necessary to reflect on my characteristics, such as gender, age, social status, and background to be aware of my possible bias and to inform potential readers of the research about the inevitable subjectivity of qualitative methods. Also, it is important to consider the positionality of the participants to fully develop situated knowledge, which can only be achieved by positionality recognition (Rose, 1997). For this reason, the interview included questions about gender, age, background, education level, and income for the participants.

As a researcher, I was involved in the topic as I am deeply interested in sustainable fashion myself and I not only try to procure more sustainable garments but also run a public page on one of the social media platforms with my friend where we attempt to regularly share knowledge on sustainability topics and the impacts of fast fashion in particular. These are all factors that contributed to the proximity I had to the research participants. Knowledge about the industry and sustainability issues related to it made it easier to plan and conduct the research and follow the participants' stories, particularly when they were talking about their priorities and struggles. However, this position as an insider to some extent can also lead to prejudices or expected answers and research outcomes.

This is why it is significant to be critically reflexive of subjectivity and intersubjectivity in qualitative analysis. Qualitative methods cannot be absolutely objective due to the social interactions that become necessary for this type of research (Dawling, 2016). According to Dowling, "subjectivity involves the insertion of personal opinions and characteristics into research practice" (2016, p. 39). Even though it is nearly impossible to avoid subjectivity in qualitative research, it is significant to analyze it through critical reflexivity to distinguish the personal comprehension of the researcher. Defining subjectivity can help to conduct research without fake objectivity. Intersubjectivity is also important as it "refers to the meanings and interpretations of the world created, confirmed, or disconfirmed as a result of interactions (language and action) with other people within specific contexts" (Dawling, 2016, p. 39). In other words, critical reflexivity helps to understand multiple comprehensions researchers and participants embrace on the same topic and its influence on the data and the research results.

Therefore, I paid specific attention to my role within the research and reflected on that throughout the process of data management and analysis. Re-reading the analysis, analyzing the own role constantly, and thus, being self-critical and aware of influences on understandings aimed to identify subjectivity in the research. As Dowling (2016) emphasizes, critical reflexivity is crucial as qualitative research includes social interactions, and, by interpreting and giving meaning to data, the researcher influences the research. Thus, being critically reflexive during the research process was an important goal to identify subjective aspects and become aware of how they might have shaped the research.

Braun and Clarke (2013) also state in this context, that subjectivity is not to be understood as a negative aspect of qualitative research. However, it "needs to be thought about and considered"

(p. 36) during the process and hence, reflexivity should be a fundamental part of the research process.

3.5 Validity and reliability

Validity and reliability are crucial aspects of every research. The researcher's positionality and interpretations during the analysis process require rigorous work in order to achieve trustworthiness (Stratford & Bradshaw, 2016). I aimed to make the research consistent and reliable and thus, ensure the quality of my research. My aim was to make the analysis process plausible and comprehensible for the reader and show the process towards conclusions. According to Crang and Cook (2007) this results in credibility and authenticity of the research outcomes which is key to successful research.

4 Findings and results

4.1 Interviews

The interviews were conducted with the garment customers who expressed their interest in sustainable garment procurement to identify their criteria, priorities and issues faced because of the sustainable procurement method. During the interviews, it was identified that customers select different criteria for purchases, sometimes only related to environmental or only social aspect of sustainability. Thus, they are divided to three groups in accordance to Elkington's (1997) principle for sustainability where satisfaction of economic and environmental aspects are regarded as viable, economic and social aspects are seen as equitable, environmental and social aspects are defined as bearable and only the satisfaction of all three aspect is considered as sustainable approach.

From the interviews, it became clear that customers often cannot find the items which would satisfy all their sustainability criteria available in the region in an affordable price range. The participants expressed that it takes very long time to find more sustainable garments because this product category is only a small fraction of all garment items sold in mass market stores. Moreover, some customers lost their trust for certain segment of the garment sector because of the experience of greenwashing they have faced in the past with a similarly scaled companies. In response to these issues, some customers developed their own approaches for sustainable garment procurement that includes shopping in secondhand, prioritization of durability, reduction of garment purchases, ordering custom-made clothes and saving garments (see Table 2 and Figure 15).

Table 2: Interview Findings (Tiffany, Maxim, Dora)

Questions	Tiffany	Maxim	Dora
Shopping frequency	Once in two months	Once in six months	Once in six months
Brands	<u>UNIQLO, ZARA</u>	<u>UNIQLO, MUJI</u> , local SMEs	<u>ZARA, Urban Outfitters</u>
Price willing to pay	Up to 10%. Would pay more if had more income.	Up to 20%. Would pay more if had more income.	Up to 20%. Would pay more if had more income.

Initial inspiration for sustainability	Highschool project	Instagram posts	Instagram posts
Main criteria for sustainability	<ol style="list-style-type: none"> 1. Recycled materials (organic / synthetic) 2. Social minorities, people with disabilities, specifically. 	<ol style="list-style-type: none"> 1. Maximum of natural materials. 2. Ecolabels certified by 3rd party (Sustainable crops without harmful pesticides / water deprivation in drought regions / natural ecosystem destruction, Sustainable production without synthetic dyes, excess water/electricity usage, hazard waste, etc.) 3. Locally soled / produced. 	<ol style="list-style-type: none"> 1. Recycled materials. 2. Ecolabels (Sustainable production process).
Non-sustainability criteria	1. Size / proportions	1. Size / proportions	3. Size / proportions
Sustainability priorities	Viable / Equitable	Viable / Equitable	Viable
Reasoning for selected priority	<p>Social aspect, such as having decent wages and safe work environment, is important. Yet, not buying from the brand associated with this issue does not seem like a solution because the workers might lose their job and suffer even more poverty. In contrast, environmental aspect of sustainability seems easier to follow because of clear instructions available in the internet. That is why Tiffany in general prioritizes products with eco labels (environmental aspect) and sometimes purchases local or social minority</p>	<p>It is important to support both, environmental and social aspects of sustainability. Yet, there are not many products available with both aspects and the price for the combined criteria is often too high for Maxim's budget. That's is why Maxim purchases some items locally or with fair trade (social aspect), and some items with eco labels (environmental aspect).</p>	<p>It is easier to prioritize the environmental aspect of sustainability because it is delivered in an easier/clearer way and there is more public discussion/information on this aspect.</p>

	owned/produced items (social aspect).		
Usage span	3-5 years. The items are worn as long as possible.	1-5 years. The owner sometimes changes preferences.	3-10 years. The items are worn as long as possible.
Recycling	Trusts and relies on NPO recycling boxes in Japan.	Maxim in general distrusts and does not rely on the recycling boxes in Japan. He stores and reposes the items instead.	Trusts and relies on the NPO recycling boxes in Norway.
Responsibility for change	Government	Government	All: Government, businesses, customers and organizations
Lack of knowledge and prejudice	1. Lack of knowledge of how to deal with the old garments in the end-of-life cycle.	1. Lack of knowledge of reliable recycling boxes. 2. Prejudice towards synthetic dyes and synthetic materials.	1. Lack of knowledge on social aspect of sustainability, the issues and solutions related to it.
Trust towards textile companies	In general, trusts the claims of textile companies.	3. Lack of trust for big textile companies' claims and initiatives, especially those associated with scandals in the past.	3. Lack of trust for textile companies.
Obstacles	1. High prices. 2. Lack of time for research. 3. Lack of available/affordable products satisfying all criteria. Also, lack of sustainable packaging because excess packaging is considered as a common sense and respect for customers in Japan (personal experience). 4. Criticism from society (being naive or a "hipster") 5. Lack of information and discourse about sustainability in Japanese society, which becomes an obstacle to find information.	1. High prices (many products seem overpriced).. 2. Lack of time for research. 3. Lack of available/affordable products satisfying all criteria. Sometimes, it leads to inability to purchase significant items (winter coat, rain jacket etc) and the participant is unable to exit the house during bad weather conditions. 4. Limited number of sustainable stores with the size/proportions that are matching personal preferences. 5. Criticism from society	1. High prices (many products seem overpriced). 2. Lack of time for research 3. Lack of available/affordable products satisfying all criteria. 4. Limited number of stores with the size/proportions that are matching personal preferences. 6. Criticism from society 7. Greenwashing from garment companies provides confusion.

	<p>6. Requirements from the university to shop uniform from specific brands, which are not sustainable.</p> <p>7. Greenwashing from garment companies provides confusion.</p>	<p>6. Lack of information and discourse about sustainability in Japanese society, which becomes an obstacle to find information.</p> <p>7. Unintentional / intentional greenwashing from Japanese companies who do not have a clear sustainability definitions.</p> <p>8. Requirements from the work to shop uniform from specific brands, which are not sustainable.</p>	
Personal approach towards sustainability developed in respond to the struggles	1. Reduction of the items bought.	1. Secondhand (because of distrust)	<p>1. Durability</p> <p>2. Secondhand (lack of time)</p>

Table 3: Interview Findings (June, Zoe, Klara)

Questions	June	Zoe	Klara
Shopping frequency	Once a month	Once in two months	Once in three months.
Brands	H&M, Nike	Adidas, H&M	<u>Tommy Hilfiger,</u>
Price willing to pay	Pays up to 20% more. Would pay more if had more income.	Pays up to 30% more.	Pays up to 20% more. Would pay more if had more income.
Initial inspiration	Instagram posts	A project in university	A project in university
Main criteria for sustainability	1. Local SMEs	<p>1. Natural materials or recycled materials</p> <p>2. Ecolabels (sustainable crop, production process)</p>	<p>1. Natural and recycled materials.</p> <p>2. Good reputation of the company.</p>
Non-sustainability criteria	<p>1. Size / proportions</p> <p>2. Sensitivity on skin</p>	<p>1. Size / proportions</p> <p>2. Sensitivity on skin</p>	<p>1. Size / proportions</p> <p>2. Convenience of usage (ironing, etc)</p> <p>3. Style and fashion</p>

Sustainability priorities	Equitable	Viable	Viable / Equitable
Reasoning	It seems more important to prioritize the well-being of people first because they are not likely to be concerned about environmental issues if they are just trying to survive every day.	It seems more important to prioritize the environmental aspect of sustainability because its consequences seem more irreversible than the consequences of social aspect.	Environmental aspect seems more important because it is currently more discussed in the society.
Usage span	1-6 years.	1-5 years. Zoe sometimes changes her preferences.	1-7 years.
Recycling	Trusts and relies on NPO recycling boxes in Norway.	1. The participant trusts all recycling boxes available in Czech republic 2. The items not good enough for donation are usually repurposed.	Klara in general distrusts and does not rely on the recycling boxes in Germany. She stores and resells/reproposes the items instead.
Responsibility for change	1. Governments (raising awareness, financial support) 2. Customers (demand)	Government	1. Government (legislations) 2. Customers (demand)
Lack of knowledge or prejudice	Not identified	1. Zoe did not know that long distance transportation from other continents do not have more impact than transportation from another city because of the large-scale containers.	1. Lack of knowledge on eco labeling.
Trust towards textile companies	1. Lack of trust for big textile companies' claims and initiatives, especially those associated with scandals in the past.	1. Some sustainability changes do not feel proportional to the price (too high).	1. Sustainability contributions of some companies are disproportional to their size; mainly large-scale enterprises do not contribute enough.
Obstacles	1. High prices. 2. Lack of time for research. 3. Limited number of sustainable stores with the size/proportions that are matching personal preferences.	1. High prices (many products seem overpriced). 2. Lack of time for research. 3. Lack of available/affordable	1. High prices (many products seem overpriced). 2. Lack of time for research. 3. Criticism from society

	4. Criticism from society 5. Greenwashing from garment companies provides confusion.	products satisfying all criteria. 4. Limited number of stores with the size/proportions that are matching personal preferences. 5. Criticism from society 6. Greenwashing from garment companies provides confusion.	4. Greenwashing from garment companies provides confusion.
Personal approach towards sustainability developed in respond to the struggles	1. Durability 2. Secondhand (because of distrust) 3. Reduction of the items bought. 4. Exchanging items with friends	1. Durability 2. Secondhand (lack of time and items available) 3. Saving personal clothes 4. Custom made clothes	1. Reduction of the items bought.

4.2 Questionnaires' results

Based on the findings in the interviews, the main issues faced by customers who aim to procure more sustainable garments were identified. Thus, the survey was conducted to test the theory if the issues faced by the customers who are interested in sustainable garment procurement are also the reasons why most people are not interested to buy more sustainable alternatives for their clothing. As a result, out of 50 participants, 45 selected the issues identified during the interviews as the main reason why they are not interested in sustainable procurement of clothes (see Figure 10). The other five participants answered that they are not interested in general in sustainability issues and sustainability itself is just a way for companies to appeal more for certain customers and this increase the sales and profits.

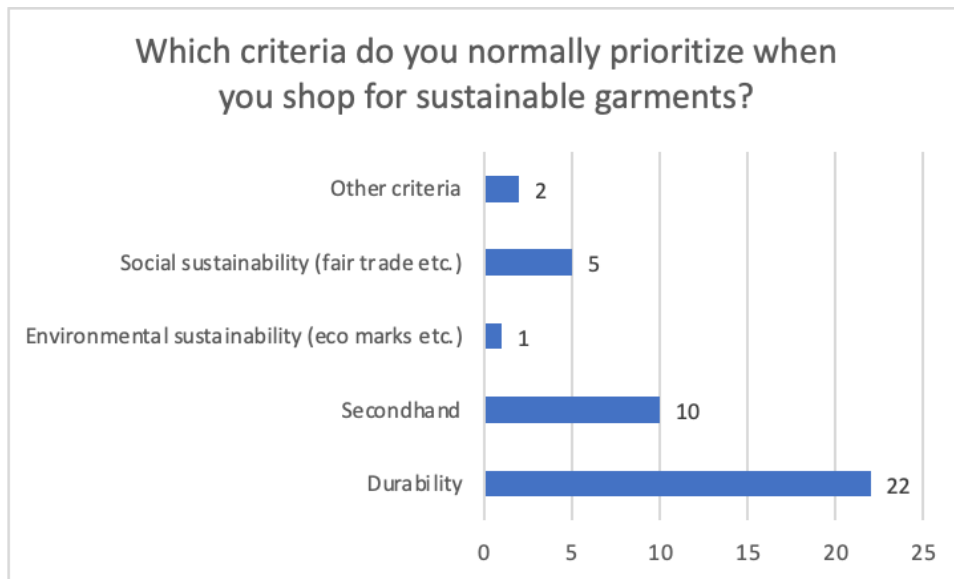
Figure 9: The reasons why customers are not interested in sustainable garments



Source: Survey 1

From the interviews, it was identified that customers who are interested to buy more sustainable clothes in general tend to have clear criteria for their shopping, such as organic/recycled materials, fair salaries and safe work environments and clear production without dangerous waste. However, they have expressed their experience that there are not many products available which follow under all of the criteria listed above and many claims on garment products are greenwashing. Thus, many interview participants shared their own approach for sustainability, such as shopping in second hands, ordering custom-made clothes, sewing their own clothes and just reducing their garment procurement and buying only the “necessary” clothes. In other words, many customers are trying to find a way to avoid dealing with the current system established in the garment market. Thus, it was decided to conduct a survey to quantify the approaches identified in the interviews for sustainable garment procurement. As a result, the majority of customers who want to buy more sustainably opt for shopping in secondhand (10) and to prioritize durability (22), while only five participants chose social sustainability, one chose environmental sustainability and two chose both (see Figure 11).

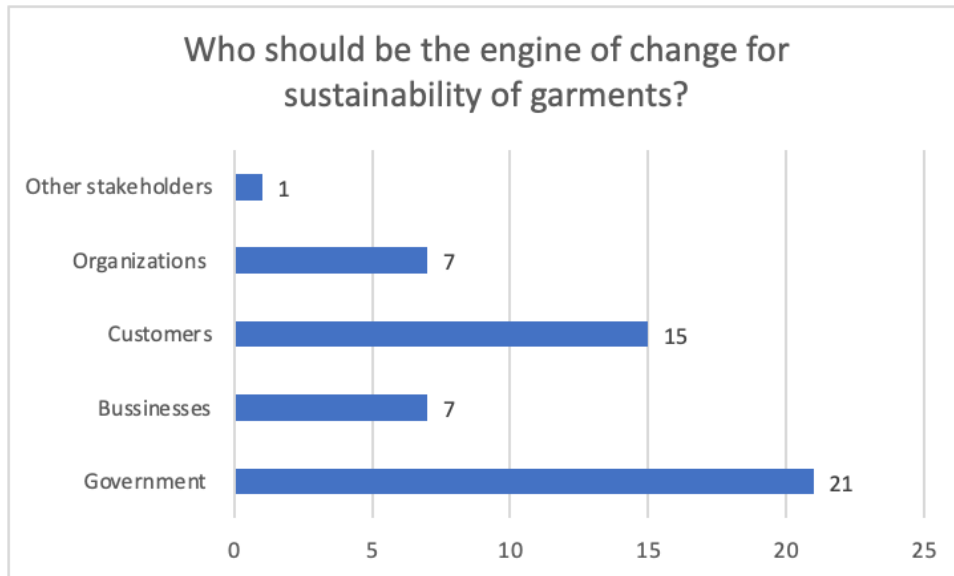
Figure 10: Prioritized Criteria of customers for garment procurement



Source: Survey 2

The last survey was aiming to quantify the trends identified in the interviews regarding responsibility for garment sustainability and change if the industry towards more sustainable approach. As a result, 21 participants chose government to be the most responsible for facilitating the sustainability changes in the industry. 15 participants chose customers to be the engine of the sustainability reform in the sector, because the customers can have an influence on the companies by prioritizing the companies who correspond with their demands or by organizing demonstrations to express their demands for more sustainable items. Only seven participants chose textile enterprises and organizations while one participant chose “other stakeholders”, specifying that it should be all of those mentioned actors, but in different countries, different stakeholders should do more than they do right now because in some countries the governments or businesses do less than in some other countries (see Figure 12).

Figure 11: Responsibility for sustainability of garments



Source: Survey 3

4.3 Findings in annual reports

For the data collection, the annual reports of Fast Retailing, H&M Group and Inditex (2020 and 2021) were used to track the sustainability changes during covid19 pandemic to identify positive or negative trends in production and across the supply chain. Despite the fact that some companies already have released 2022 annual reports at the time of the research, it was decided to use inly 2020 and 2021 reports to ensure the equal timeframe between actions of the companies.

Table 4: Finding from Annual Reports analysis

1. Materials	
Fast Retailing (FR)	<p>In 2018, joined the Better Cotton Initiative (BCI). For rayon products, FR also makes efforts to establish the traceability to viscose mills.</p> <p>For the 2020 spring and summer seasons, UNIQLO started selling the DRY-EX polo shirt, which employs recycled polyester manufactured from post-consumer PET bottles. We partnered with Toray Industries, Inc., a leader in fiber and textile innovation and our strategic partner in materials research, to address the issue of the lower quality of recycled material.</p> <p>'Good Wool' products are part of a signature program in 'Theory For Good', the brand's platform for social and environmental responsibility. The 'Good Collection' is consciously designed using 'Good Wool', ultra-fine merino wool, sourced from responsibly-raised Australian sheep and woven in Italian mills using the latest energy and water-saving technologies.</p> <p>In 2021, recycled polyester comprises 32% to 75% of the DRY-EX Polo Shirt, 30% of the Fluffy Yarn Fleece Full-Zip Jacket, and Fluffy Yarn Fleece Pullover Shirt.</p>

H&M	<p>In 2021, 18% of recycled and 62% of “other more sustainably sourced materials” were used for garment production. “Other more sustainably sourced materials” include organic, in-conversion (cotton from farms that are in the process of converting to organic model), recycled or sourced through the Better Cotton Initiative materials. Materials are evaluated with third party LCA data (the <u>Material Sustainability Index</u>). According to the evaluation, recycled cotton is the most sustainable (7% used), followed by organic cotton (21% used) and better cotton initiative or in-conversion cotton (71% used).</p> <p>Through the collaboration with WWF, we launched an initiative to assist smallholder cotton farmers in central India's Satpura-Pench wildlife corridor in using regenerative farming techniques. The initiative aims to directly increase the biodiversity of soil and pollinators, assist farmers in creating sustainable incomes, and enhance the local environment to accommodate bigger animals like tigers. We started a modest trial this year with 150 farmers.</p>
Inditex	<p>The material for some labels is certified by Forest Stewardship Committee. Green to Wear standard: In order to be able to put “Join Life” label on a product, it has to have a certain percentage of organic/in-transition (cotton – min. 50%, hemp/linen – minimum 40%), better sourced or recycled (Polyester, acrylic, polyamide/nylon - min. 25%, Cotton, wool, cashmere, mechanically recycled viscose, linen,lyocell - min.15%; Bonded leather - min. 90%; Elastane, elastomultiester - min. 50%)materials.</p> <p>Moreover, the Direct suppliers must be A or B on social audit. All mills involved in JL orders must be A, B or C-CAP (commitment to improvement) on social audit.</p> <p>Suppliers and their entire supply chain must be certified under the relevant standard based upon the type of sustainable fiber. (Not clear of certification must be given by 3rd party).</p>
2. Hazardous waste	
FR	<p>FR The company joined the ZDHC Group, an organization for the fashion sector that focuses on the issue of hazardous water waste problem. The company makes an effort to comply to the water discharge regulation at the main fabric mills.</p>
H&M	<p>H&M is a member of the AFIRM Group, Zero Discharge of Hazardous Chemicals (ZDHC) and ChemSec Business Group.</p> <p>The ZDHC program is employed by 95% of the leather and textile suppliers, and they meet 95% of chemical input requirements and 99.9% of wastewater requirements by 2020. Due to the diversity and complexity of the supply chain, 100% ZDHC Manufacturing Restricted Substances List 2.0 (MRSL) compliance is proving to be difficult.</p>
Inditex	<p>The company works with our suppliers to publish the results of wastewater analyses—obtained from the Green to Wear au- dits—on the ZDHC Gateway platform.</p>
3. Circularity	
FR	<p>FR In 2020, RE.UNIQLO recycling program launched so that customers can bring in their old items. The recycled Down Jackets launched in 2020 and their filling is made from recycled items.</p>

	<p>By collaborating with the United Nations Refugee Agency (UNHCR), UNIQLO has donated 41.11 million items of clothing to refugees and displaced persons in 75 countries and regions around the world. Through our global partnership with UNHCR, we aim to donate approximately 7 million pieces of clothing per year. UNIQLO Japan recycles clothes that are unwearable into solid fuel and automobile soundproofing materials to ensure that nothing goes to waste.</p>
H&M	<p>H&M Goal to design all products for circularity by 2025 and a tool was developed for this purpose (Circulator). H&M and Monki (both H&M group companies) already presented the first collection using an early version of the Circulator tool, as part of its Innovation Collection.</p> <p>The Stockholm Resilience Centre, the Ellen MacArthur Foundation, and the H&M Group is collaborating on a three-year research project to make a roadmap for a circular fashion industry within the planetary boundaries. The model will be based on circular design and circular supply chain.</p> <p>Currently, Customers in 46 markets are able to benefit from H&M's Take Care project, which provided options to maintain, fix, and personalize their goods. The Take Care product line expanded to 7 additional markets in 2021, increasing the total number of markets to 17. Six repair studios in four markets provide the brand's repair services. Sellpy, which H&M Group has a controlling stake in the company, now allows users in 24 marketplaces to purchase used clothing, and users in 4 markets may also sell items there. Sellpy is accessible via links on H&M website to seven markets. Through the partnership with business technology company Reflaunt, customers in three markets may now purchase and sell used clothing. While COS provides COS Resell in Germany and the UK, H&M launched H&M Rewear in Canada. In three Swedish cities, Weekday introduced Weekday Curated 2nd-Hand. Customers in 19 marketplaces can still rent children's apparel through a collaboration between ARKET and Circos. A few H&M locations in Stockholm, Berlin, and Amsterdam provide clothing rentals for particular collections. H&M HOME just began providing rentals for special events. Customers in five markets had the opportunity to rent holiday decor through Rent a Christmas.</p> <p>In 2021, 15,944 tons of material were collected and 18,800 tons in 2020. The program gathers post-consumer textiles from houses and clothing for recycling and reuse. H&M collaborates with I:CO to gather and sort clothing, with 50–60% sorted for re-wear and reuse and 35–45% recycled to create goods for other industries or new fibers. H&M kept working with partners to reuse the remaining 3-7% that had to be disposed of in an alternative way, giving incineration for energy recovery priority and never disposing of textiles in landfills.</p>
Inditex	<p>Integrate circular economy criteria into all our processes with the aim of extending the useful life of our products via reuse or recycling. Here we are working with a range of organisations, including the Massachusetts Institute of Technology (MIT), on research to develop new techniques that make clothing last longer and optimise the recovery of used clothing.</p>
	<p>4. Microfiber reduction initiatives</p>
FR	<p>FR In 2019, joined Microfibre Consortium.</p>

H&M	H&M has joined The Microfiber Consortium 2030 Commitment, a global agreement to work toward a world in which textile fiber fragmentation has no negative environmental effects by the year 2030. However, restrictions imposed on by Covid-19 coincided with testing of macrofibre emissions that were scheduled at H&M supplier plants. Nevertheless, once Covid-19 regulations loosen, testing macrofibre emissions with HKRITA and our suppliers will continue.
Inditex	No information found.
5. Production process	
FR	FR In January 2020, Fast Retailing ratified the Fashion Industry Charter for Climate Action. The Charter claims to support the Paris Agreement's objective of keeping global temperature rise to well below two degrees Celsius above pre-industrial levels. A promise to reduce greenhouse gas emissions in scopes 1, 2, and 3 of the Greenhouse Gas Protocol Corporate Accounting and Reporting Standard by 30% overall by 2030 is also required, with 2015 serving as the baseline. In fiscal year (FY) 2020, UNIQLO Japan reduced greenhouse gas emissions by 38.7% because to its installation rate of 93.8% LED bulbs for shop illumination (as compared to FY 2013 per unit area). The world's UNIQLO and GU shops are also converting to LED lighting. In 2019, Fast Retailing Jean Innovation Center developed water consumption reduction technology for jeans which allows to reduce the amount of water used in the jeans finishing process by up to 99%.
H&M	10% reduction in production water use (water intensive tier 1 and 2 suppliers) from 2017 baseline. 95% renewable electricity in own operations.
Inditex	In 2021, 91% of energy consumption at our own facilities (headquarters, logistics centres, factories and stores) came from renewable sources. However, this does not apply to suppliers.
6. Biodiversity initiatives	
FR	The strategy is under development.
H&M	To accelerate progress towards our biodiversity ambition, H&M Group is a Science Based Targets Network (SBTN) Corporate Engagement Program participant, pledging alignment with SBTN's goals and vision, and contributing advice and end-user insights to the development of SBTN methods and tools. Through our partnership with WWF, we started a project in the Satpura-Pench wildlife corridor in central India, supporting smallholder cotton farmers to adopt regenerative farming practices. The project aims to directly improve soil and pollinator biodiversity and help farmers build sustainable incomes, while also improving the local landscape to support larger species such as tigers. This year we began a small pilot with 150 farmers .
Inditex	Examples of International groups Inditex has joined in efforts to protect biodiversity include: Better Cotton Initiative (BCI) • International Alliance on Forest Products • Sustainable Apparel Coalition • Textile Exchange Also, Inditex strives to promote sustainable use and end of life of products through working with consumers and the collecting and recycling industries, in addition to reducing our direct business pressures on biodiversity.

7. Evaluation	
FR	<p>The Higg Index is used as a self-evaluation instrument created by Sustainable Apparel Coalition, to evaluate the environmental effect of the operations and the supply chain, analyze environmental implications and risks, and work toward improvement.</p> <p>LEED certifications (LEED provides a framework for healthy, efficient, carbon and cost-saving green buildings).</p>
H&M	<p>Self-assessment and validation. Self- assessment through tools including the Sustainable Apparel Coalition’s (SAC) Higg Facility Environmental Module (FEM) and Higg Facility Social and Labor Module (FSLM), verified by a third party.</p> <p>In 2021 we began extracting minimum requirements non-compliance data from industry tools where the majority of cases were verified on-site by a third party. This has resulted in significantly lower minimum requirements non-compliance cases, reiterating the importance of alternative due diligence approaches, including workplace dialogue and effective grievance channels for workers to raise issues.</p>
Inditex	<p>The Group has climbed to 73rd spot on The Global 100 Most Sustainable Corporations in the World, an annual ranking based on an assessment of economic and ESG indicators (Environmental, Social, and Corporate Governance (ESG) refers to the three dimensions for measuring the sustainability impact of an investment in Sika. These criteria help to better determine the future financial performance of companies).</p> <p>Inditex has been traded in the benchmark sustainability stock index, FTSE4Good, since 2002, scoring 4.9 out of 5 in each of the last three years.</p> <p>Also evaluated by Dow Jones Sustainability Index and Sustainalytics and Corporate Knights .</p> <p>Code of Conduct: Manufacturers and suppliers shall authorize Inditex and/or any third parties the former might appoint, to monitor the appropriate enforcement of the Code. For these purposes, they shall provide the required means and the appropriate access to the facilities and documentation required to ensure this verification.</p> <p>The Environmental Management System (EMS) is a core pillar of our commitment to using renewable energy and circular management models. Certified to ISO 14001 standard, the EMS is implemented in 100% of the Group’s headquarters, logistics centres, and own factories.</p> <p>LEED certifications (LEED provides a framework for healthy, efficient, carbon and cost-saving green buildings).</p>
8. Wages	
FR	No information found.
H&M	<p>Country-specific methods were created based on the six factors that affect wages: wage management systems, productivity, social protection, statutory minimum wages, collective bargaining, and industrial relations, as well as our own buying habits. These strategies take into account national circumstances and legal frameworks. H&M evaluates how much of an impact it have on each of these areas and intervene at the factory, regional, and industry levels to promote fair and competitive wage increases.</p>

	<p>H&M is trying to inspire its suppliers to raise salaries according to the rising inflation with its Sustainability index and requires to not cut costs by cutting salaries. Indeed, letters of concern about fair wages decreased from 63 to 4 in 2020.</p> <p>As part of its ongoing commitment to upholding the Children's Rights and Business Principles, H&M continues to prohibit the recruitment of children as laborers in all aspects of its supply chain.</p>
Inditex	Code of conduct: Manufacturers and suppliers shall ensure that wages paid meet at least the minimum legal or collective bargain agreement, should this latter be higher. In any event, wages should always be enough to meet at least the basic needs of workers and their families and any other which might be considered as reasonable additional needs.
9. Working conditions	
FR	<p>FR In conformity with other international norms and the UN Guiding Principles on Business and Human Rights, Fast Retailing created its Human Rights Policy. A Human Rights Committee was created by Fast Retailing in July 2018 to support programs that uphold human rights. The committee is led by an outside expert who has prior experience serving as the director of the human rights bureau in the Japanese Ministry of Justice. Outside directors of the board and auditors, as well as executive officers in charge of Fast Retailing's legal and compliance department, human resources department, production sales department, and sustainability department, also serve on the committee.</p> <p>The committee's responsibility is to provide recommendations and offer oversight so that we uphold our commitments to uphold human rights in accordance with the Human Rights Policy and that business operations are carried out properly.</p> <p>based on the findings of a human rights study of Fast Retailing employees in Japan, advised business divisions on appropriate steps and verified that these measures were put in place. It also offered suggestions on how to improve the effectiveness of human rights training.</p> <p>provide guidance to business units on the processes and training needed to reduce threats to human rights in product design, marketing, and advertising.</p> <p>Policy for dealing with customer or other non-employee harassment was discussed, and the Legal Department and other relevant departments were given advice on procedure. based on a site check, confirmed that those departments had deployed countermeasures.</p> <p>advised the Diversity and Inclusion team on the difficulties and solutions for enhancing LGBTQ+ activities.</p> <p>The committee provided recommendations on workplace monitoring, grievance procedures at factories, and programs to avoid the infringement of migrant workers' rights in order to increase human rights due diligence in our supply chain. Additionally, it asked for improved traceability for greater openness throughout our supply chain.</p>
H&M	In the talks leading up to the new International Accord for Health and Safety in the Textile and Garment Industry, H&M took a leadership. This collaboration between brands and trade unions motivates to sustain the health and safety initiatives currently implemented in Bangladesh and expanding such initiatives throughout our supply chain.

	In accordance with the Bangladesh Accord, 97% of the fire and building safety concerns have been resolved by Bangladeshi suppliers, and new suppliers would not be approved unless they meet these criteria.
Inditex	Code of conduct: Manufacturers and suppliers shall adjust the length of the working day to the provisions of the applicable laws or of the collective bargain agreement applicable for the sector in question, if the latter affords greater protection for the workers (in excess of 48 hours a week and workers shall be granted at least one day off for every 7 calendar day period on average. Overtime shall be voluntary, shall not exceed 12 hours per week). Manufacturers and suppliers shall provide a safe and healthy workplace to their employees, ensuring minimum conditions of light, ventilation, hygiene, fire prevention, safety measures and access to a drinking water supply. Manufacturers and suppliers shall take the required steps to prevent accidents and injuries to health of their workers, by minimizing as much as possible the risks inherent to work.
	10. Diversity
FR	FR The corporation claims to support gender equality and the economic development of women, and it gives female employees access to specialized training and capacity-building opportunities. In 2019, the organization Entered into a partnership with the International Labour Organization (ILO). Also, Fast Retailing started collaboration with UN Women in 2019 and traveled together to Bangladesh to learn more about the difficulties faced by female factory employees. We built pilot programs with the management of two of Fast Retailing's partner manufacturers (out of 585 partner factories) during meetings. In Bangladesh, the education program with UN Women offers fundamental training on communication and problem-solving skills, gender equality, occupational and female health, and workers' rights and duties to chosen female and male workers in each workplace. Then, under a program meant to assist them in moving up the ladder, some female employees chosen for their management potential receive further training on technical and leadership abilities. Fast Retailing and UN Women are still discussing the possibility for creating a customized training program that takes local priorities and difficulties for female employees into account in China and Vietnam. FR also claims to support refugees through provide clothing, employment opportunities, and emergency assistance, as a global partner of UNHCR. Also FR has visited refugee camps around the world to assess the need for clothing, resulting in many donations (in total 46.19 million items to 79 countries and regions). There are also 121 refugees employed in UNIQLO stores globally. Additionally, in June of 2020, FR announced the donation of 10 million yen to UNHCR from the revenue of baby items sold through UNIQLO Japan's online store in response to COVID-19. The Grameen UNIQLO social business was founded to support the development of Bangladesh's textile industry and provide solutions to social issues. The entire process—from merchandise to planning, production, and sales—takes place locally, and all revenue is reinvested into the business.
H&M	In the supply chain, women account up 28% of supervisors and 62% of worker representatives.

	<p>710 refugees were engaged in our supply chain as part of our pledge to responsibly hire 2,000 refugees into our Turkey supplier network by 2025. In collaboration with the United Nations Population Fund and other parties, we kept up a health and wellness program in Indonesia aimed at empowering women in our supply chain. The initiative presently provides training on issues including gender-based violence, hunger, and reproductive health to over 45,000 workers. Together with Better Work and USAID Mitra Kunci, we participated in a workplace inclusion initiative for disabled workers in Indonesia, and 17 factories are presently registered. H&M South Africa kept up its collaboration with Clothes to Good (CTG), which aims to assist women out of poverty, primarily mothers of children with disabilities. 108 women are now able to manage prosperous apparel enterprises in their communities thanks to CTG's microbusiness initiative. In partnership with Plan International, H&M introduced its Women's Empowerment Strategy for the production supply chain in 2020. Health and safety, career and development, representation, and equitable pay are the focal points of the aims and supporting objectives and KPIs. Through our supplier relationship management system, H&M rewards suppliers that have a higher proportion of female supervisors. This year, it encouraged Bangladeshi suppliers to boost the proportion of female supervisors from 6% to 10%.</p>
Inditex	<p>In 2021, Inditex was ranked 66 in Refinitiv's Global Diversity & Inclusion Index, which identifies companies from all over the world that are ground-breakers in diversity and inclusion. This year the Group's efforts to promote the values of diversity and inclusion were again recognised by Refinitiv, which included Inditex in its Top 100 Diversity and Inclusive Companies, based on the examination of policies and practices at more than 8,500 companies.</p>
11. Offsetting	
FR	<p>In October 2020, UNIQLO and the Swedish Olympic and Paralympic Committee launched DREAM PROJECT by UNIQLO, an initiative to inspire youth and children to participate in sports and adopt active, healthy lifestyles. We asked Peter Reinebo, Chief Executive Officer of the Swedish Olympic Committee, about the significance and the future of the project.</p> <p>As a global partner of UNHCR, FR works toward comprehensive solutions to the challenges faced by refugees and displaced people around the world. We provide clothing, employment opportunities, and emergency assistance, as well as support for the independence of refugees. FR has visited refugee camps around the world to assess the need for clothing, resulting in many donations. We have also employed 121 refugees in UNIQLO stores globally.</p>
H&M	Not identified
Inditex	<p>New €2.5m donation to MSF from Inditex will help fund the provision of health assistance to the Rohingya community in Bangladesh and medical and psychological care to migrants and refugees in Mexico; it will also support MSF's Emergency Desk, which manages the organisation's interventions in large-scale and highly-complex situations by dispatching teams of specialists.</p>
12. Transparency	
FR	<p>FR In 2018, UNIQLO disclosed the list of its core fabric mills.</p>

	In 2020, Fast retailing was included in the Dow Jones Sustainability Indices (DJSI) World Index for the first time.
H&M	<p>H&M Group ranked second in Fashion Revolution’s 2021 Fashion Transparency Index, scoring 68% (73% in 2020).</p> <p>H&M 2019 Sustainability Performance Report was named first runner-up in the honesty and transparency category at the 2021 Corporate Responsibility Reporting Awards.</p> <p>The company continued assessing suppliers’ social and environmental performance using the Higg Facility Environmental Module (FEM) and Higg Facility Social and Labor Module (FSLM). See Supply Chain Management for more detail.</p>
Inditex	<p>We share the complete and updated list of our manufacturers and their degree of sustainability compliance with IndustriALL, as part of our Global Framework Agreement (IndustriALL Global Union is a global union federation, founded in Copenhagen on 19 June 2012. IndustriALL Global Union represents more than 50 million working people in more than 140 countries, working across the supply chains in mining, energy and manufacturing sectors at the global level).</p> <p>Inditex’s traceability management system is based on requiring each supplier to know and share with us all the data of their own supply chain in the traceability management system and traceability audits.</p>
13. Packaging and shipping	
FR	<p>FR To save resources, we're encouraging consumers to bring their own bags while shopping and changing to bags made of eco-friendly materials. Additionally, we are gradually replacing single-use plastic in product packaging with alternative materials (FSC (Forest Stewardship Council) certified paper or recycled paper). In order to encourage customers to utilize reusable bags, all UNIQLO stores in a few areas will start charging customers for paper bags starting in September 2019. (from September 2020 in Japan specifically).</p> <p>FR have significantly reduced the use of new corrugated cardboard for shipping products by using collapsible containers, and also improved loading efficiency by using fewer types of corrugated boxes.</p>
H&M	<p>A part of packaging is made from paper and thus plastic packaging was reduced by 28% in 2021. 68 % of recycled or other more sustainably sourced materials, which is a decrease compared to 2020 (89%). There are bold goals for 2025/2030 for reduction and redesigning packages to recyclable/reusable.</p> <p>In order to help our organization reduce carbon emissions when choosing which materials, production technologies, and transportation methods to use, internal carbon pricing was implemented.</p>
Inditex	<p>Load optimisation.</p> <p>High-capacity vehicles.</p> <p>Liquefied Natural Gas (LNG) trailer.</p> <p>Euro VI standard (the most exacting engine standard currently in force in terms of nitrogen oxide and particle emissions). In 2021, the main providers of primary land transportation (accounting for 83% of total turnover) complied with the Euro VI standard in more than 90% of their fleet.</p> <p>Electric vehicles. In China, last mile deliveries to all our stores are made with electric vehicles, in order to reduce greenhouse gas emissions and air pollution.</p>

	in cities. In Spain, we have also electrified last mile deliveries at several Madrid stores.
14. Sustainability influence across the supply chain	
FR	<p>FR In 2020, Fast Retailing established the "Environmental Commitment" standard, which outlines the minimal environmental safety requirements that our business partners must adhere to.</p> <p>The following are the core aspects of Fast Retailing's environmental commitment: The factory complies with all applicable environmental laws and regulations; an environmental impact assessment is conducted when local laws and regulations require it; proper wastewater treatment is ensured; procedures are in place for handling chemicals and waste products;</p> <p>All personnel who utilize chemicals while working in the production receive training on these dangers as well as how to handle chemicals safely in an emergency or spill. The factory also has approved contractors for the disposal of hazardous waste.</p> <p>FR confirm the status of compliance with the environmental commitment standard for the core fabric mills and garment factories through regular assessment using the Higg Facility Environmental Module (Higg FEM). With the introduction of the Higg FEM, the survey with about 130 questions environmental impacts is conducted. The core fabric mills are required to have third-party auditors review water treatment and other environment measures. Where necessary, Fast Retailing personnel who are recognized by the SAC as FEM trainers, follow up with direct visits and work with factories to ensure required improvements are made.</p>
H&M	H&M Sustainable Impact Partnership Program is used to choose suppliers who correspond with minimal sustainability requirements and to monitor their growth towards more sustainable production as the most successful suppliers get rewarded with long term contracts. However, there is no third party mandatory check (only 30% is certified by 3 rd party) and the minimal requirements are not specified.
Inditex	Code of Conduct for Manufacturers and Suppliers has to be signed to work with a supplier as part of a sustainable procurement measure. In the document, there are vague requirements for working conditions, wages, environmental standards of Inditex and local laws, and ethics. However, none of these is certified by a 3 rd party even though the fabrics are hypothetically tracable.
15. Progress towards suitability during covid19 crisis	
FR	Donations of masks and other garment items is claimed to be a contribution into social aspect of sustainability.
H&M	<p>Covid-19 prevented us from collecting post-consumer clothing in-store during the entire year.</p> <p>Impacts on the supply chain included decreased future orders and plant closures. The completion of the Circular Product Development Guideline and macrofibre strategy, as well as conducting in-person supplier factory evaluations, were all delayed or put on hold. Other sustainability-related efforts also saw a delay. Additionally, the creation of international science-based biodiversity rules through a large cooperation between several firms and international organizations has been postponed and is anticipated to resume in 2021.</p>

	<p>Due to the strategic choice to monitor development in the global production chain, new Key Performance Indicators (KPIs) were introduced in 2020. However, there are no specific goals set for the supply chain and beyond. For the Higg modules, we switched to outside verification. By October 2021, we had set a target of 100% verification of FEM and FSLM evaluations, but Covid-19 has made it impossible to do so in the majority of nations.</p>
Inditex	<p>Only mentions the issues related to health of the workers because of the danger imposed by covid 19 pandemic.</p>

Source: Fast Retailing (2020, 2021), H&M Group (2020, 2021), Inditex (2020, 2021)

5 Analysis and Discussion

5.1 Definitionary arbitrage of customers

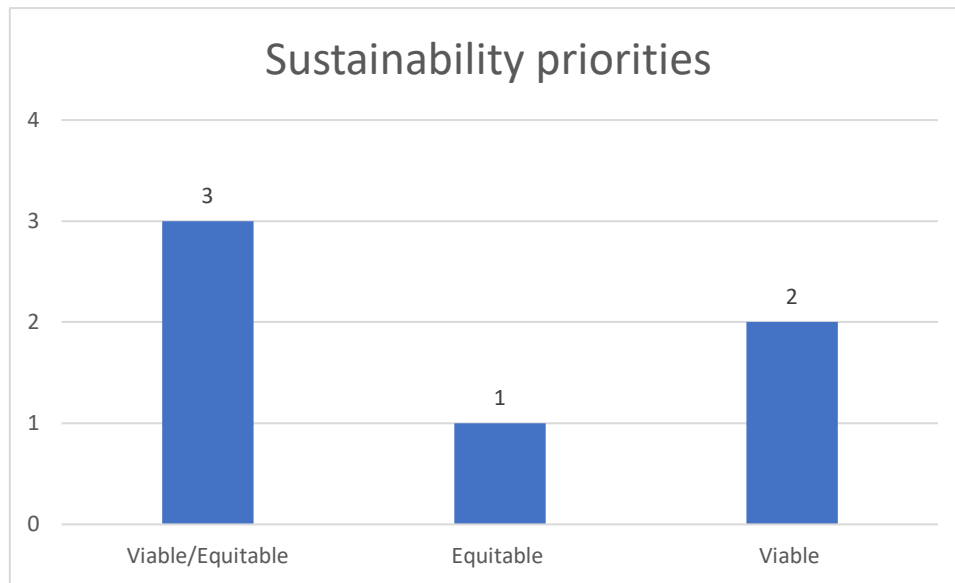
According to the results of the interviews, it was identified that participants have different definitions of what they find as suitable garments. For instance, all participants said that they aim to prioritize natural or recycled materials, because those seem to have less impact on the environment. However, not all natural materials can be categorized as sustainable because some require large amount of water recourses which can be detrimental in areas with chronic lack of water. Moreover, not all natural materials are raised without usage of pesticides, detrimental for the wildlife and ecosystems, or without cutting forests and destruction of ecosystems in sake of additional crop field creation. Furthermore, recycled synthetics also tends to have detrimental consequences for the environment in a form of microplastics released into water while laundry if not treated appropriately with a special filter or washing bags. Yet, some participants define these materials as sustainable, without investigating deeper into this subject. This gives the textile companies an opportunity to utilize this definitionary arbitrage of customers to advertise their products as sustainable.

5.2 The conflict of environmental and social aspect of sustainability in the reality of limited financial resources of customers

According to the interviews, some participants find it more important to prioritize environmental aspect of sustainability (viability-oriented group) while others prioritize social aspect (equitability-oriented group). Only Tiffany and Maxim aim to buy their clothes satisfying both aspects because they purchase some items satisfying environmental aspect and others satisfying the social aspect because of lack of available/affordable items satisfying both (sustainability-oriented group). On the other hand, Dora, Zoe and Klara tend to prioritize the environmental aspect in their clothes, as they focus to buy items with natural or recycled materials, ecolabels (Dora and Zoe). Zoe believes that environmental aspect is more important because it is more irreversible as environmental changes are harder to fix once they happen (extinction, climate change etc.). Dana had to choose between environmental and social aspect because of her budget been limited and she also decided to prioritize the environmental aspect. The fact that there are more items and information available for the environmental aspect also

contributed to her decision. On the contrary, June has a limited budget for her garments, and she finds it more important to prioritize social aspect of sustainability, such as safe working conditions and descent salaries. She insisted that “it is impossible to fix the environmental aspect if the happiness of people is not prioritized first. People would not care about environmental issues if they were trying to survive every day.”

Figure 12: Priorities for sustainable garment procurement of interview participants



This discussion of importance is very important in the sustainability field. Yet, there are no clear answers to this question. Having both aspects is the best solution as it satisfies both vital aspects of sustainability. However, this approach often comes with a cost of prime tag. Moreover, high costs are exactly the reason why Dora, June and Zoe had to make a tough choice between two aspects of sustainability. And this is also the case for many other customers, as well as actors from different scales, such as businesses and government procurers, because many of them also have limited budgets and have to face the choice between environmental and social aspects.

One of the answers might be provided by Tiffany, Maxim and Klara who tend to prioritize both aspects, even if not simultaneously, but they tend to diversify their choices with both environmental and social aspects of sustainability. Tiffany and Maxim tend to prioritize procurements from local or social minority-owned businesses while Klara mentioned that she prioritizes the companies with good reputation and better quality even though they usually cost more. This diversification of criteria (Tiffany and Maxim) or having a bigger budget, like in case of Klara, allows the participants to have a more balanced approach.

Without a shade of a doubt, there are many more solutions to this problem of satisfying both aspects of sustainability, such as lowering the prices with the support from governments who can provide subsidies, tax reductions, and contracts to more sustainable companies. Moreover, the companies can also change their mind set and business model by prioritizing the resolution of environmental and societal issues instead of enlarging the capitals of their shareholders. According to Sjøfjell (2015), the government should facilitate this transition of companies into sustainable by default business model. This is discussed in the next subsection.

5.3 Financial discipline and Greenwashing

Satisfaction of shareholders and attraction of new customers

According to the analysis of annual reports of three textile companies, there are some initiatives towards sustainability been implemented. However, financial discipline seems to be the key motivation for implementing most of the initiatives towards sustainability in textile industry. The initiatives are often presented in GRI index / UNGP index, which is a tool for investors to have an overview of the sustainability efforts of companies. Despite this research included only on three companies, each of them is one of the largest industry representatives and they serve as a leader and example for other businesses in this industry. And this is why the vigorous attempts to appeal to the investors despite the lack of thorough sustainability changes might mean that some companies use greenwashing to receive more financial investment from attracting new shareholders.

Greenwashing is also an attempt to attract new customers who are interested in buying more sustainable items. According to the results of interviews, some customers who are interested in sustainability have a vague definition of sustainable garments. Some of the participants believe that sustainable garments are the ones with some percentage of recycled materials or just composed of natural materials, without questioning its origins or work conditions or salaries of people who made it. This gives the companies an opportunity to exploit the abstract definitions of some customers as a loophole and advertise their products as sustainable even though not all criteria suggested by the sustainability field are satisfied. This also might prevent them from further sustainability implementation. Yet, enlarging the portion of customers coming to the store leads to greater profits and this is the main objective of most of the business models in the liberal market. However, this approach sooner or later might undermine the

trust from the customers as they realize that the claims are exaggerated or not proportional to the price tag.

It is clear from the annual reports that the sustainability awareness is rising in the textile industry because besides a few sustainability initiatives, a number of greenwashing cases were identified. Some examples of greenwashing found in the reports included old data presented as new (Fast Retailing/FR mentions many initiatives that were taken long ago, such as the Human Rights Committee establishment in 2018 in the report of 2020). Also, FR mentions the importance of Paris agreement, which prescribes to reduce the CO2 levels in comparison to 2015 while the company reports the reduction in comparison to 2013. Again, FR refers to the circular business model, but it has only one product that just partly uses recycled materials. Moreover, ZARA claims to have main goals are related just to CO2 reduction referring to the Paris agreement. However, the goals are not specified in a clear way and do not go beyond already established international agreements or legislations. Furthermore, in all companies, what they claim to be sustainable products is just a tiny fraction of how much they produce in total. Despite being the largest garment sellers, the companies do not have a large-scale recycling initiative and for the donation of clothes, all companies collaborate with outside companies to downcycle the donations or to send them to third world countries. Understanding these greenwashing cases, let's discuss what this means for reputation of company and customers.

Reputation of companies and customers

For instance, June and Maxim tend to distrust large scale companies regarding their suitability claims because they associate them with sustainability issues, such as environmental pollution, dangerous working conditions and unfair salaries. It seems like they assume that bigger companies tend to exaggerate or fake their sustainability contributions by default because of their personal experiences in the past when they learned some scandals in this field where usually bigger companies were involved. Thus, it seems like it became an image for them for mass market companies. On the other hand, Zoe tends to trust bigger corporations because she believes that they value their reputation and good name. She says that it tends to be more difficult for these larger companies to change name, and customers still will know about this transition from news. However, because the definitions of sustainability remain vague and not specified by legislations for the textile industry, companies still have enough opportunities to

make excuses for journalists for most of their unsustainable practices. Unless more detrimental accidents occur that leave no chance to find a loophole in definitions for companies, such as collapse of a working building in Bangladesh (Rahman and Moazzem, 2017), or a large leakage of poisonous waste into natural environment (Sivaram et al., 2018) which already happened in the past. That is why garment enterprises do not always avoid greenwashing, aiming for greater financial profits.

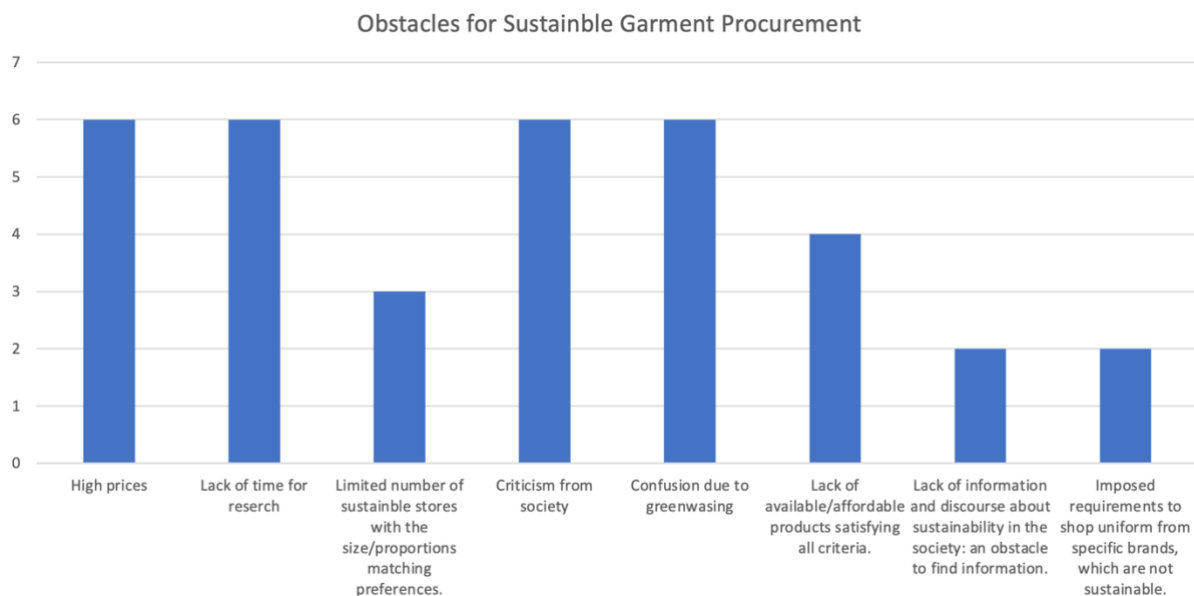
However, greenwashing can harm not only the reputation of the companies who use it but also the reputation of similarly scaled garment enterprises. According to the results of the interview, four (Maxim, Dora, June, and Klara) out of six participants tend to distrust all claims from all big corporations of garment industry, and one (Zoe) tends to distrust claims of all small companies, because in the past, they had an experience of realizing lies or reticence in the claims of companies they shopped with. Currently, all interview participants tend to doubt all claims from the whole sector of alike-scaled companies, unless they are certified by a third-party certification, which tend to be delayed during the covid19 crisis, according to the annual reports of the analyzed companies. Maxim for instance, mentioned that all of large scale brands seem not trust worthy and associate with scandals related to working conditions, low salaries or environmental destruction. And indeed, Zara for example, does direct greenwashing by putting Forest Committee mark on the product labels, while the mark refers not to the product but to the label paper itself, which is an attempt to pretend to have less negative impact on the biosphere. Therefore, it can be concluded that greenwashing from one company can harm the reputation of all other companies in the sector with a similar scale.

Moreover, greenwashing can harm not only the reputation of companies, but also the reputation of customers interested in sustainable procurement of garments. All interview participants shared their feeling of not being comfortable to be open about their sustainable position towards procurement of clothes to everyone: their friends, family or work/school colleagues. They expressed a concern that people tend to think of them as “hippies” or “naive” if the participants share their opinion that consumers should prioritize the purchasing of sustainable clothes, such as the items made from recycled or organic materials. In other words, the participants expressed a fear that their reputation might be harmed if they share their sustainable views with people who are not interested in this approach because suitable procurement itself is associated with greenwashing and advocacy of unreasonably high process in the society that they are living in.

Overinflated prices and greenwashing

High prices for sustainable items was one of the biggest obstacles for the interview participants to buy more sustainable garments (see Figure 14). Thus, the motivation to increase profits and satisfy shareholders not only undermines the trust of customers, but also leads to unproportionally higher prices, which young people often cannot afford. These prices often do not correspond with implemented sustainable changes and are not affordable for the interested group of people. According to the interview results, the customers interested in sustainable garments aim to purchase products with organic/recycled materials, produced in a safe environment without compromising workers' wages. However, according to the results of the annual reports' analysis, some companies including Inditex, and Fast Retailing tend to try to offset their unsustainable sides, such as usage of unsustainable materials, production waste, low wages, and post-consumer waste, with donations to Non-Profit Organizations (NPOs). This can be regarded as greenwashing because such measures are not directly related to sustainability of the products or the supply chain.

Figure 13: Obstacles faced by interview participants during sustainable garment procurement process

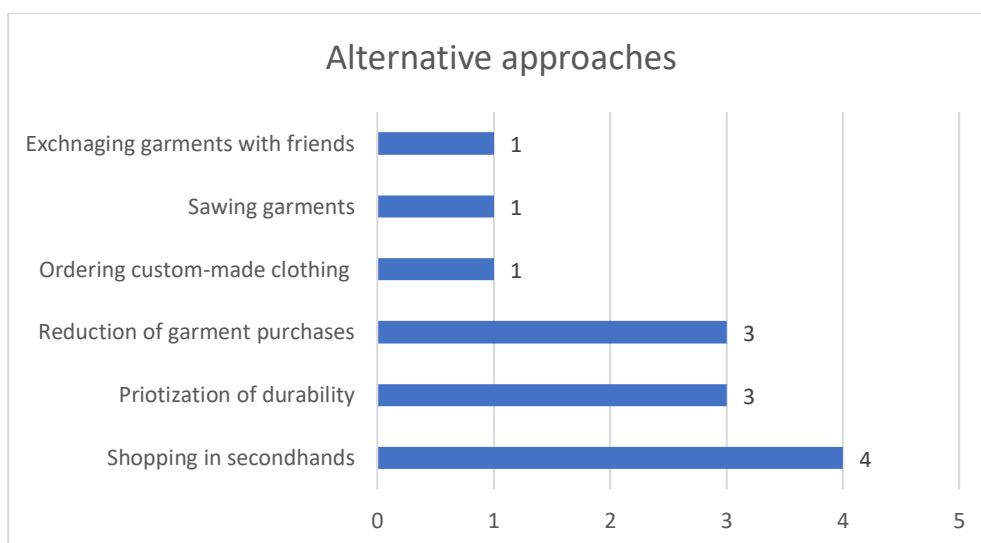


According to the research by Simon Kucher and Partners (2021), younger generations like Zoomers and Millennials are the groups who are interested in sustainable products the most. However, this is also the groups who tend to have lower income due to their social status. Being a student often means having a limited budget. Having a part time job or some support from

family/government is usually not enough to afford a premium price tag for clothing. Even after graduation, it often takes years to build a career to become profitable enough to move into middle/higher-middle income group. In other words, the age groups who are interested the most in sustainable products tend to have less income than other age groups and often cannot afford a premium price tag.

According to the finding from interviews, distrust for companies, lack of products satisfying all criteria of customers and the inability of younger customers to afford premium price tags, result in alternative approaches for sustainable clothing. Moreover, Questionnaire 1 has proved the theory that the issues confronted by the customers who are interested in sustainable garments are the same reasons why the other customers remain indifferent to the sustainable alternatives. The alternative approaches for sustainable garment procurement include purchasing from secondhand stores, prioritization of durability as a main criterion, reduction of number of garments bought, exchanging garments with friends, sewing own clothes and ordering custom made clothes (to support local producers and avoid modern slavery issues in the textile industry) (see Figure 15). In other words, interview participant each found their own approach towards sustainable garment procurement. This trend is also supported by the data found in the Questionnaire 2 (see Figure 11), as 22 participants chose durability, and 10 participants chose secondhand shopping as their main criteria for sustainable garment procurement.

Figure 14: Alternative approaches from customers towards sustainable garments as a respond to the issues faced



However, some of these alternative approaches become the cause of new problems in other spears. According to the systems theory, all field are interrelated, and it requires a lot of investigation before the right solution is found and implemented (Senge et al., 2007). When it comes to sustainable garments, buying clothes in secondhand does reduce the environmental and social negative impacts associated with the textile industry. However, it creates a new problem: the prices in secondhand become so much higher that people in poverty who are in need the most cannot afford to buy good clothes in secondhand anymore.

This is why if a company is big and has a lot of profits, it should contribute to sustainability proportionally to its profits and scale. The smaller business on the other hand should be respected if they do at least something, as much as they can. Instead of prioritizing the satisfaction of the shareholders and putting prime price tags to make more profits, the companies should make sustainability as their core value.

Shift from fast fashion.

Large-scale corporations should become the engine of change in the textile industry because they are likely to be able to afford this transition because of economy of scale (Datta and Christoffersen, 2005; Yeung and Coe, 2015) and cluster absorptive capacity (Giuliani, 2005). According to the annual reports that were analyzed, sustainable garments tend to be a small fraction of the total amount of clothes produced. This becomes an obstacle for customers who what to buy sustainable clothes because they face a choice between size/comfort/design preferences and sustainability. H&M already has invested into new circular business model through research collaboration with The Stockholm Resilience Centre, the Ellen MacArthur foundation. On the other hand, Fast Retailing and Inditex are lagging behind the first has only one product made from recycled materials, and the other doesn't seem to aim to increase the amount of sustainable garment ratio.

The joint massive shift towards sustainability in the apparel industry would make it much more easy for consumers to choose their clothes by reduction of a number of criteria to be considered. Customers have different criteria to consider, including sizes and proportions which differ in various companies. This phenomenon can be explained by different origins of companies, for

instance, H&M is Swedish, Inditex is Spanish and Fast Retailing is Japanese. Thus, it is understandable why these companies have different size ranges and different proportions as their original focus derives from drastically different markets. According to the results of the interview, the customers who are interested in sustainable garments often must choose between sustainability and sizing that matches them. Because of those additional criteria such as varying sizes, Tiffany tends to continue to shop in Uniqlo and Dana shops in ZARA because they have the sizes matching their body types while other more sustainable brands do not have the same proportions. Thus, if all companies would incorporate sustainability more to a certain level specified by law, it would help the customers so that they can just focus on their criteria such as sizing, proportions, or style.

However, it does not seem likely to see a massive change towards sustainability in the textile sector without more strict regulations from government or other external influence. The reason for this delay might be explained in game theory. According to the game theory, it is more beneficial for the textile companies to keep their current business model as much as possible because sustainable changes always require financial investments and lead to higher prices. That is why it might be unprofitable for the companies to implement sustainability higher than legally required or higher than the other companies do on average because if the other companies do not implement sustainable initiatives to the same high level as well, that would result in cheaper prices in other retailers which would lead to a significant leak of the customers (Rogers and Wang, 2021). Thus, it might seem the most logical for the companies to implement just the bear minimum of sustainable approach for their business because this would allow them to benefit in both cases: if other companies don't implement higher levels of sustainability, the leak of customers won't happen; and if the other textile companies do implement a more sustainable scheme, the company would benefit from lower prices and free rider benefits. To specify, the free rider benefits here imply the possibility of overcoming the global environmental crisis without the necessary commitments for it as the effort from other more sustainable companies might become sufficient. This is why, an external facilitation from government becomes important to ensure a massive shift towards sustainability in this industry.

Government Role in Textile Sustainability

The interviews conducted showed a number of issues that the customers who are passionate about sustainability have to face when choosing their clothes that the government can and

should take care of. Thus, contracts from the government for sustainable companies to support the venture businesses and subsidies from the government to lower the prices are necessary. People who are interested in sustainable alternatives the most are the younger generation (Simon and Kucher, 2021) and they tend to have the least financial resources available, according to the data from OECD (2019) and the result of the interviews. They often cannot afford a higher price tag. According the findings form Questionnaire 3, the majority of participants think that the government should be the engine of change towards sustainability in the garment industry (see Figure 12).

Some might argue that progress towards sustainability is likely to slow down if the businesses are supported by the government and the prices are not likely to fall because the businesses have less motivation to find new technologies to decrease the price (Leisen et al., 2019). However, we can look at the example of solar energy preserved by solar panels. The technology was supported by governments in South Africa and United States and each has evolved into a profitable business (Mirzania, 2020) with an affordable price, making solar power the most affordable energy in the world nowadays (Lilliestam and Pitz-Paal, 2018).

The government also should help to highlight the sustainability issues more and the brands which contribute to this field in schools, universities, and media channels to make more people aware of the sustainability issues related to clothing and to provide them with suitable options. The government also should make more legislation and mandatory standards to make all garment products above a certain sustainability threshold so that customers can choose products more easily, with confidence and they don't have to spend their time too much on making decisions about their clothes if they don't want to or if they do not have enough time.

However, the government is not likely to facilitate the transition to sustainability in the textile field without people in government who would represent sustainability shift. Currently, there are very little number of politicians who would support suitability. Moreover, there are not many voters to support them. This might be the result of inadequate or absent education on sustainability in many countries. Therefore, is a need for more education in the subject, which can be provided by Non-Profit organizations (NPOs) in some countries where the representation issue in government is severe. Yet, the NPOs are often severely limited in their budget and often can do only little at the time.

In order to facilitate the transition to slow fashion, governments should adopt laws prohibiting production of items that are not meant to last. In case of clothing, that would include the aspects such as the quality of materials and sewing, recyclable design and other criteria that would allow the garments to last.

6 Conclusions

As a result of the research, certain trends of garment customers who are interested in sustainability were identified. First of all, they tend to prioritize natural or recycled materials with ecolabels (viability-oriented group). However, most of the participants were not aware that some ecolabels are certified by a third party while some are just claims from the companies. Secondly, some customers tend to prioritize or combine with the previous criteria the local producers and products from minority groups (equitability-oriented group). Yet, some participants also mentioned that it is hard to be socially sustainable because there are a lack of items satisfying both aspects (sustainability-oriented group). Moreover, social sustainability criteria are not always as intuitive, compared to environmental sustainability, and the information is rarely available. The customers also shared their concerns regarding the price, as often, the more sustainability criteria are satisfied, the higher the price grows, but high prices do not correspond with higher quality or actual sustainability level, implying greenwashing.

Because of the issues faced by the customers, many of them have developed their own approach towards garment sustainability that included shopping in secondhand, prioritizing durability, reduction of total garment procurement (avoiding purchases of “trendy” or “unnecessary” clothes), ordering custom-made clothes (assuming higher quality and durability) and sewing their own garments (avoiding the social issues in the garment supply chain, such as low wages or safety). Indeed, some of these approaches might contribute to the reduction of some sustainability issues associated with the industry because prioritizing durability and reduction of garment purchases indeed shifts the market away from fast fashion, which exacerbates the sustainability issues. However, it is important to be aware of systems thinking and that not well thought through measures can lead to unexpected consequences that can create new issues or exacerbate the existing issues.

Regarding the companies, it was identified that during covid19 pandemic, many of the existing sustainability initiatives were stopped or delayed, including 3-rd party certifications in the supply chain, collection of worn garments and recycle initiatives. Instead, the companies report that they concentrated their efforts to ensure health safety measures related to covid19 spread prevention. This is in line with the theory from Sarkis (2020) that environmental sustainability likely to be compromised during the crisis. However, an increase related to sustainability

claims during the pandemic was observed as Fast Retailing started to participate in GRI index evaluation and started drawing a blueprint for its biodiversity protection program. Moreover, H&M Group started its collaboration with Mac Arthur Foundation and Stockholm sustainability center to investigate circular business models and solutions for microplastics. That is why it becomes important to investigate further dynamics of sustainability implementation for garment industry in the post covid period.

In the future, further research can be conducted on more companies, to include companies that would represent Australia, Northern America and other continents. It would be also beneficial to conduct more research with companies of different scales, such as SMEs and compare their sustainability definitions and initiatives during covid19 pandemic with larger companies in this study. Furthermore, a deeper discussion on the definitions of sustainable garments and materials is necessary because many scholars suggest that if treated right, genetically modified crops should also be considered sustainable (Szepesi, 2021). It would be also valuable to include the government initiatives for sustainable garment production, if present, and to analyze if these initiatives are helpful to resolve the issues expressed by the customers interested in buying more sustainable items. Furthermore, it is also crucial investigate sustainability initiatives of garment companies in the future, after the covid crisis to identify whether the companies became more motivated during covid19 to implement a more sustainable approach and started the journey toward sustainability once the pandemic is completely defeated and all the restrictions are withdrawn.

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Appendices

6.1 Appendix A: Interview Guide

Interview questions for the customers interested in sustainable garments:

1. What do you define as sustainable clothes?
2. Do you pay attention to how sustainable your clothes are?
3. Are you willing to pay more for sustainable garments?
4. Are you satisfied with the products when you buy them in the sustainable category?
(Quality, sustainability level)
5. Do you trust recycling boxes?
6. How long ago did you start to pay attention for sustainability of your cloths/company?
7. What was the reason why you got interested in cloths sustainability?
8. Which cloths brands do you usually shop with?
9. How much time do you spend to search about the things related to the sustainability of your garments?
10. How long do you wear your garments?
11. Do you recycle your clothes?
12. Choose one or more things that you would prioritize when shopping for clothes:
 - a. Material: organic/recycled
 - i. Process: efficiency, renewability and carcinogenicity (water, energy dies)
 - b. Fair wages
 - c. Certifications by third parties
 - d. Contributions into sustainability projects: planting trees, cleaning oceans etc
 - e. Sustainable corporate management
 - f. Owner (woman, ethnical minority, disabled etc)
 - g. Package
 - h. Transportation

13. Which do you think is more important, social, or environmental sustainability? (fair trade vs eco marks)
14. Which is more important, your responsibility or company's responsibility?
15. Should it be a demand from people or from government to implement more sustainability changes?
16. What is your age, gender, education level and annual income?

6.2 Appendix B: Online Survey Questions

Survey 1 Question:

Why are you not interested in sustainability?

6. It takes too much time to find
7. It is too expensive
8. There are no sustainable clothing shops in my location
9. It is hard to choose/understand what is actually sustainable
10. Other reasons

Survey 2 Question:

Which criteria do you normally prioritize when you shop for sustainable garments?

6. Durability
7. Secondhand
8. Environmental sustainability (eco marks etc.)
9. Social sustainability (fair trade etc.)
10. Other criteria

Survey 3 Question:

Who should be the engine of change for sustainability of garments?

6. Government
7. Bussinesses
8. Customers
9. Organizations
10. Other stakeholders

6.3 Appendix C: Information Letter for Interview Participants

Are you interested in taking part in the research project

” Sustainable initiatives in textile industry and societal expectations”?

This is an inquiry about participation in a research project where the main purpose is to learn more about the expectations, criteria, priorities, struggles and misconceptions of the customers who are interested in sustainable garments. In this letter we will give you information about the purpose of the project and what your participation will involve.

Purpose of the project

In this master thesis, the main objective is to look into the current initiatives towards sustainability of textile companies through interviewing their Corporate Social Responsibility (CSR) representatives and customers. The research aims to provide answers whether the supply chain was reformed during covid 19 crisis when a number of disruptions occurred or if the sustainable renovation was compromised due to the crisis and whether the current initiatives satisfy the demand from the customers who are interested in sustainability aspect.

Who is responsible for the research project?

Norwegian University of Science and Technology is the institution responsible for the project.

Why are you being asked to participate?

For this research project 5-10 participants are needed to gather research data for the project. The participants have to be customers who are interested in purchasing sustainable garments.

What does participation involve for you?

If you choose to take part in the project, this will involve that you participate in an online interview. It will take approx. 60 minutes. The interview includes questions about your

expectations criteria and priorities you have when making a choice to buy clothing. The interview will be recorded, and I will take notes. The recording will only be used for the purpose of creating a transcription and will be deleted after the project is finished.

Participation is voluntary

Participation in the project is voluntary. If you chose to participate, you can withdraw your consent at any time without giving a reason. All information about you will then be made anonymous. There will be no negative consequences for you if you chose not to participate or later decide to withdraw.

Your personal privacy – how we will store and use your personal data

We will only use your personal data for the purpose(s) specified in this information letter. We will process your personal data confidentially and in accordance with data protection legislation (the General Data Protection Regulation and Personal Data Act).

Only the Master student and their supervisor will have access to the personal data. Name and contact details will be replaced with a code. The list of names, contact details and respective codes will be stored separately from the rest of the collected data. The participants answers will be made anonymous in the final thesis.

What will happen to your personal data at the end of the research project? The project is scheduled to end *August 31, 2022*. After this date, all data will be made anonymous, and recordings will be deleted.

Your rights

So long as you can be identified in the collected data, you have the right to:

- access the personal data that is being processed about you
- request that your personal data is deleted
- request that incorrect personal data about you is corrected/rectified
- receive a copy of your personal data (data portability), and
- send a complaint to the Data Protection Officer or The Norwegian Data Protection Authority regarding the processing of your personal data

What gives us the right to process your personal data?

We will process your personal data based on your consent.

Based on an agreement with *Norwegian University of Science and Technology*, Data Protection Services has assessed that the processing of personal data in this project is in accordance with data protection legislation.

Where can I find out more?

If you have questions about the project, or want to exercise your rights, contact:

- Master student: Kateryna Vykhrystyuk (katerynv@student.ntnu.no)
- *Norwegian University of Science and Technology* via *Heidi Rapp Nilsen* (heidi.r.nilsen@ntnu.no).
- Our Data Protection Officer: Thomas Helgesen (thomas.helgesen@ntnu.no)
- Data Protection Services, by email: (personverntjenester@sikt.no) or by telephone: +47 53 21 15 00.

Yours sincerely,

Consent form

I have received and understood information about the project “*Sustainable initiatives in textile industry and societal expectations*” and have been given the opportunity to ask questions. I give consent:

to participate in an interview

I give consent for my personal data to be processed until the end date of the project, approx. *August 31, 2022*

(Signed by participant, date)

