



The perspectives of economic actors on EU Strategy for Sustainable and Circular Textile

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ABSTRACT

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This thesis studies the impact of the recently published EU Strategy for Sustainable and Circular Textiles on economic actors within the Finnish clothing sector. As the textile industry faces critical challenges of overconsumption, textile waste, unsustainable use of raw materials, and unfair working conditions, the EU strategy aims to address these issues by introducing new requirements in ecodesign, regulating the destruction of unsold clothes, combating microplastics pollution, and addressing green claims and greenwashing.

Through an interview survey with various economic actors in the Finnish clothing sector, this thesis seeks to understand their perspectives on the EU strategy and identify common themes emerging from the interviews. The goal is to analyze the effects of the strategy on these actors and their operations. The strategy emphasizes measures such as the digital product passport to enhance traceability and transparency in the supply chain and extended producer responsibility to ensure manufacturers appropriately handle waste. Ultimately, the European Union envisions the strategy as a means to diminish the prevalence of fast fashion, enhance sustainability in supply chains, and facilitate a transition toward a more sustainable textile ecosystem. The key findings highlight a sense of uncertainty and confusion among economic actors, with varying levels of awareness about the strategy. Common themes emerged, including concerns about increased costs, a critical view of Digital Product Passport (DPP), and apprehensions regarding the implications of Extended Producer Responsibility (EPR).

Despite a shared understanding of the strategy's objectives, communication gaps were identified, both from legislative authorities and, in some instances, at the corporate level. The research concludes that addressing these communication shortcomings is crucial. In response to the central research question regarding the effects of the EU textile strategy on economic actors, it is observed that these actors anticipate rising expenses, potential loss of clientele, and increased workloads, impacting supply chain phases and, consequently, prices. The mandatory collection of textiles by manufacturers necessitates careful planning for the effective implementation of Extended Producer Responsibility (EPR).

Key words: Strategy for Sustainable and Circular Textile, textile waste, sustainability, green transition

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GLOSSARY

CPC	Consumer Protection Cooperation
DPP	Digital Product Passport
EoL	End-of-Life
EoW	End-of-Waste
EPD	Environmental Product Declaration
EPR	Extended Producer Responsibility
GTIN	Global Trade Identifier Number
MNE	Multinational Enterprise
MP	Microplastics
OECD	Organization for Economic Co-Operation and Development
RCR	Responsible Conduct of Research
SME	Small and Medium sized Enterprise

1 INTRODUCTION

In today's world, shopping for clothes is made easy and effortless. New shopping centers are bigger than previous, online shopping has made it possible to order clothes at any time of day and delivery services bring the ordered items from across the world at your front door, possibly without any charge. As a result, the world is faced with severe problems of overconsumption, textile waste, unsustainable use of raw materials and unfair working conditions in the textile sector.

For the past years fast fashion and textile waste have been a topic of public discussion and the images of mountains of textile waste transported in the developing countries are shown all over media. It is apparent that something must be done for this line of business to end and to try to come up with an idea how to stop the transportation of textile waste from the Western countries to across the oceans. The problem is severe as the decomposition of these piles of clothes eg. in the desert of Atacama in Chile can take two hundred years. The piles are so vast that they can be seen from the space and with the decomposition, harmful substances are released in the environment and with the attempt to burn the clothes, hazardous smokes are released in the atmosphere (Salmi, 2023). Not only the Europeans are the ones causing this environmental catastrophe, but also the Americans and the Asians too. But EU tries to decrease the emissions and environmental burden with legislation from the current situation as the consumption of textiles causes the fourth highest negative environmental impact and climate change emissions on global scale (Amicarelli & Bux, 2022).

The recently published EU Strategy for Sustainable and Circular Textiles (2022) aims at decreasing the environmental impacts of the textile and clothing industry and help consumers make better choices when buying clothes. New requirements in ecodesign, destruction of unsold clothes, microplastics pollution, and green claims and green washing increase the sustainability of clothes. The digital product passport aims at increasing traceability and transparency in the supply chain and extended producer responsibility obligates manufactures to handle the waste. With the strategy European Union wants to make fast fashion out of fashion, increase the sustainability of the supply chains and create a transition pathway for textile ecosystem. As the theme is so recent, not a lot of literature or

research was found solely on the strategy, but the themes discussed in the strategy are studied and have been current topics for some years.

The Commission's vision (2023) for textiles being durable, repairable, and recyclable by 2030 to be executed already on a company level, needs preparing, in some cases investments, knowledge and perhaps strategical changes and plans. How well the companies are prepared for or are aware of the future changes, is an issue that needs to be studied as the deadline is closing. Similar research about the possible barriers and drivers of the strategy was published in 2023, and the research aims at providing information of the challenges and opportunities for policymakers, other fashion companies and consumers (Kerll, 2023).

This thesis is an interview survey and different economic actors operating in the Finnish clothing sector were interviewed. The goal of the interviews was to find out the perspectives of these actors on the European Union Strategy for Sustainable and Circular Textile and find joint themes that appeared in the interviews. Based on the insights of the interviewees, conclusions of the effects of the strategy were made. At the same time, this thesis tries to find an answer to the research question: "What kind of effects the EU textile strategy has for economic actors and their operations?"

2 ACTIONS FOR SUSTAINABLE TEXTILES AND TEXTILE WASTE

Whereas Ellen MacArthur Foundation has been a pioneer in circular economy and created “*A vision of a circular economy for fashion*” in 2020 containing the topics such as durability, reuse, repair, composting, design for disassembly, recycling, remaking, hazardous substances, microfibers, recycled material, regenerative production practices, renewable material, waste, transparency and traceability (Ellen MacArthur Foundation, 2020), it lacks the power to demand these issues from the fashion companies. Without deprecating the importance of the work Ellen MacArthur Foundation has done with the vision, sometimes stronger means need to be taken to create a change. When recommendations and guidelines are turned into legislation, the follow up is more efficient, neglecting the legal acts and laws provides consequences and a consensus has been created.

The EU strategy for Sustainable and Circular Textiles combines the law proposals, regulations, and initiatives regarding the same issues presented in the vision of Ellen MacArthur Foundation. The ecodesign requirements, and prevention of microplastic pollution enhance the use of sustainable raw materials and regulation with green claims and the implementation of Digital Product Passport increase the credibility and transparency of the textile and clothing industry. In addition, the recycling and reuse of textile as raw materials increases with the extended producer responsibility and separate textile waste collection.

The initial goal of the Amendment to the Waste Directive is to be implemented in all EU member countries by 2025 making the textile waste collection mandatory and limiting the number of incinerated and landfilled clothes (Amending Directive 2008/98/EC, 2023). The separate textile waste collection for households began in the begin of 2023 in Finland and the processes are developing continuously. The obligation to collect the textile waste applies also in waste produced by companies but the company has to arrange the collection by itself as it cannot automatically be a part of the municipality’s waste collection (Lounais-Suomen jätehuolto, n.d.)

2.1 EU Strategy for Sustainable and Circular Textiles

In March 2022, the European commission published a strategy regarding sustainable and circular textile in EU member states. The goal of the strategy is to lengthen the life cycle of the clothes, that the clothes should be recyclable at the end of the life cycle and already in the production phase made of recycled materials. The textile products should not contain any hazardous substances and the production process takes into account the social rights and the environmental aspect in each phase of the supply chain. (European Commission, 2022)

The growth in fast fashion has increased the textile waste, and the overproduction and overconsumption of clothes in European countries are causing significant problems. The overproduction of textiles and clothes cause major impact for the environment as the manufacturing processes requires a lot of water, manmade fibers, also known as synthetic fibers, need fossil fuels for raw material and cultivation of cotton require a lot of land. European citizens produce 11 kg of textile waste per person annually and as majority of the clothes sold in EU countries are imported from non-EU countries, transportation increases the environmental impacts. (European Commission, 2022)

As the majority of clothes are produced in countries outside EU borders, mainly in the Eastern Asia, the value chains of the clothes are complex. A lot of concerning social challenges have been met throughout the value chain. Use of child labor is still a reality in the apparel industry, and the low wage workforce with poor working conditions and without proper education are often women what causes gender inequality. (European Commission, 2022) None of the mentioned concerns are new but they are issues that rose to awareness when textile and clothing brands started to shift their production and other processes to low wage countries for better profits.

For the past years sudden and unexpected disruptions caused a lot of problems in the clothing sector. The COVID-19 pandemic caused breaks in production, in transportation, the availability of the raw material and in customer behavior. The market had barely revived the disruption of the pandemic when the war in Europe increased the price of energy and many raw materials. These two force majors

together have caused a lot of uncertainty in the business and the customer have become very cautious. In addition to major setbacks, these crises have created possibilities for development and innovation.

2.1.1 Ecodesign

The purpose of ecological designing, often referred as ecodesign is to offer consumers products that are produced with high energy efficiency but with low environmental impact. The requirements for ecodesign are set in the regulation and it includes the improvement of energy efficiency in the manufacturing processes and the reduction of virgin raw material. Also, circular economy and sustainability are important viewpoints in ecodesign. (*Ecodesign of Products*, n.d.)

The methods and tools used in the ecodesign are developed to evaluate the environmental impact of the product or a service. The aim of using the tools is to identify the environmental weak points and develop the product or the service accordingly, (Pigosso,D., Zanette,E., Filho,A., Ometto, A. & Rozenfeld.H., 2010).

According to Pigosso et al. (2010) ecodesign promotes reputation improvement, cost reduction, decrease in risks, lessening in residue generation, product innovation and attracting new customers. These factors are important in long-term development leading into profitable company.

A thorough and careful design is the basis of a good textile garment. The garments should have durable zippers and seams, the colors should maintain after washes and the tear durability should be high for the consumers to use clothes longer. A long-lasting garment of good quality can be reused, repaired and be in use longer. It can also be used in the circular business models like take-back services, renting and second-hand markets. (European Commission, 2022)

The change in consumer habits happens slowly. When repairing of broken clothes or shoes costs more than new items, it is tempting to buy a new one. The added value of repairing is sometimes unnoticeable for the consumer but in reality, repairing has positive widespread effects. For example, the negative image of repaired clothes is starting to disappear.

Ecodesign also considers the fibers that are used in the garment. It is important already in the planning phase to think about how the garment is handled in its end-of-life. Mixed materials, like natural fibers combined with manmade fibers, are more difficult to recycle in the recycling process. The technology in separating the fibers is still under development and therefore the feasibility of the recycled material can be low. (European Commission, 2022)

2.1.2 Destruction of unsold garments

Online shopping has increased rapidly in recent years and the selection of the online shops is vast. Customers especially in Finland are used to buy clothes from online shops because the shopping is easy, the delivery is free and returning of the unfit clothes is free. A notable side effect of this customer behavior is the returning of the ordered products as only Finns are returning 33% of their orders. (Stolzmann, 2021.) This behavior isn't a problem only in online shops, but it is a bigger problem there as in actual stores where the customer can see colors and try the clothes on to avoid mistakes in purchases. The returned clothes are also forming a problem that needs to be solved.

It is common that almost all the returned clothes are sold again but sometimes the piece of clothing cannot be sold because it has been worn, stained or broken. Five years ago Amazon and Zalando were faced with bad publicity when it was discovered that they destroy new, unsold and unused clothes, mobile phones and even furniture. (Ziemann, 2018) The brands want to obstruct the appearance of their products in the black markets by burning or otherwise harming the products (Hancock & Johnston, 2023).

The EU wants to stop the destruction of unsold or returned garments and therefore proposes large companies to be transparent and publicly inform how much clothes they are destroying or discarding. (European Commission, 2022) The obligation to inform the amounts of destroyed clothes would concern the medium-sized companies that have fewer than 250 workers. These companies would also

have a transition period of four years after the proposal becomes a law. The proposal suggests that the small companies, under 50 workers will be exempted from the obligation. (Woollven, 2023)

Whether the EU's means to decrease the problem is sufficient or not is a causing some debate. If the amount of produced clothes isn't revealed, it is difficult to estimate what is the actual ratio of destroyed clothes of the whole production. Still, a lot of textile and clothing companies would be exempted from the obligation as majority of these are small and medium-sized companies (European Commission, 2022). It is also unclear whether the information obligation apply to non-EU member states like the United States where i.e., large sports brands are located and are market leaders also in the European Union.

2.1.3 Microplastics pollution

Textiles, especially manmade fibers originating from the fossil fuels like polyester, are a growing source of microplastics. As illustrated in the figure 1, the textile industry has increased the use of plastics from 1950 to 2019 massively. It is estimated that the use of fossil fuel fibers still grows. While the release of the microplastics in the environment is unintentional, the EU tries to tackle the pollution with the textile strategy. The commission wants to reduce the pollution in different phases of the lifecycle primarily with the design requirements (European Commission, 2022).

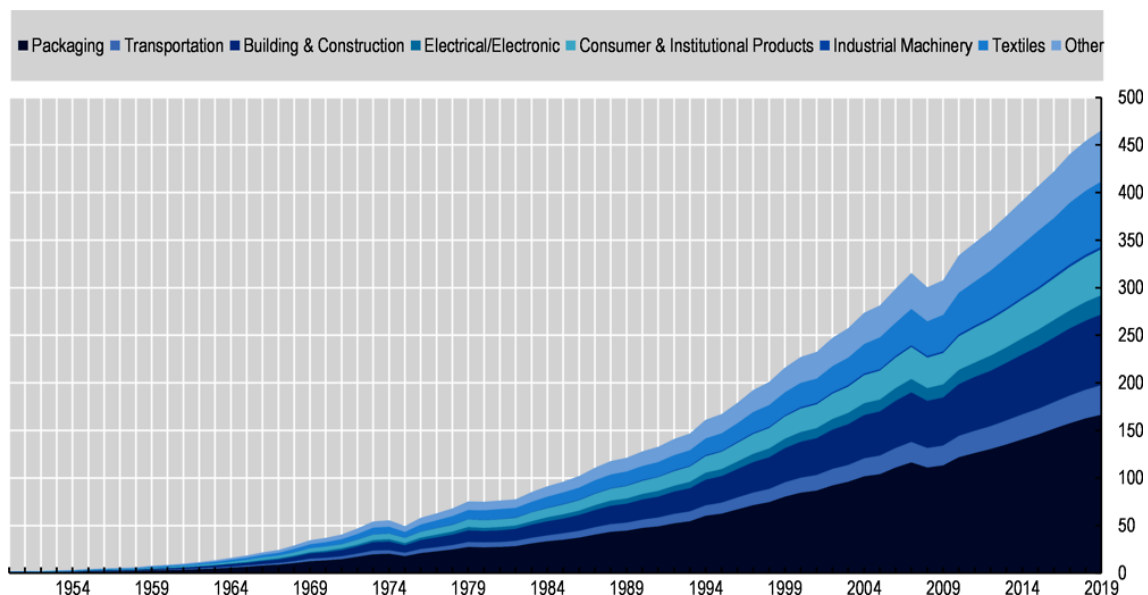


FIGURE 1. Global primary plastics production by sector, 1950 to 2019 (million tonnes) (Organization for Economic Co-Operation and Development, 2021).

Talvitie, Mikola, Koistinen and Setälä (2017) define the microplastics in their research:” Microplastics (MPs) are plastic particles that are under 5mm small. These particles can be divided into two groups: primary and secondary microplastics. Primary microplastics are produced intentionally, for the use in virgin resin pellets, micro beads in personal hygiene products, abrasive cleaning agents or plastic powders. Secondary microplastics are fragmentation of larger plastic particles.” (Talvitie et al., 2017).

The Organization for Economic Co-Operation and Development (OECD) differentiates the MPs more accurately. In the table 1, the main types and sources of MPs are presented. As the table portrays, the types of microplastics are pre-production plastics, microbeads and other MPs intentionally added to products, synthetic microfibers, tire wear particles, paint flakes, other land-based MPs, marine based secondary MPs and land- and marine based mismanaged plastic waste. (Organization for Economic Co-Operation and Development, 2021) Wearing, using, laundering, and drying of clothes and textiles (carpets, curtains, cloths) are the source of microplastics as fossil fuel-based fibers are raw material for many products.

Type of microplastics	Examples of common sources	Mode of emission
Primary microplastics		
Pre-production plastics	Accidental spills occurring during the transport and storage of plastic pellets	Unintentional, occurring at the production and recycling stages
	Emissions and run-off of pre-production plastics and production scrap from processing facilities	
Microbeads and other MPs intentionally added to products	Rinse-off personal care and cosmetic products (PCCPs) with exfoliating properties (e.g. toothpaste, scrubs, soaps)	Intentional discharges occurring during the use of products.
	Other rinse-off and leave-on PCCPs (e.g. make-up, hair and skin care products)	
	Detergents and maintenance products containing microbeads (e.g. laundry detergents and fabric softeners, cleaning products)	
	Industrial uses of microplastics (e.g. in off-shore oil and gas exploration activities)	
Use-based secondary microplastics		
Synthetic microfibrils	Use, washing and drying of textile products (e.g. clothing, carpets, cloths)	Unintentional emissions occurring during the use phase, due to abrasion and wear of products containing synthetic materials.
Tyre wear particles	Use of vehicle tyres during road transport activity	
Paint flakes	Wear and loss of paint applied to ships, buildings and road surfaces	
Other land-based MPs	Losses of rubber granulate from artificial sports turfs	
	Losses of Polymer Modified Bitumen (PMB) in asphalt pavement	
	Wear and tear of utensils containing synthetic polymers (e.g. cooking utensils)	
	Wear and tear of brake pads	
Marine-based secondary MPs	Routine wear and tear of fishing gears	
	Wear and tear of aquaculture equipment	
Degradation-based secondary microplastics		
Land-based mismanaged macro plastic waste	Littering, disposal of macro plastic waste in unregulated dumpsites;	Fragmentation of macro plastics leaked into the environment due to waste mismanagement
	Loss of material during extreme weather events and natural disasters;	
Marine-based mismanaged plastic waste	Fishing gear and other plastic material lost or discarded from ships, recreational boats, fishing vessels, aquaculture facilities, or agricultural fields	

TABLE 1. Main types and sources of microplastics. (Organization for Economic Co-Operation and Development, 2021)

The use of recycled polyester in clothes is causing concern as the raw material for recycled polyester is often PET-bottles. PET-bottles aren't designed to be used in clothes, as the bottles aren't staying in the loop as food contact materials and EPR obligates bottles to be recycled. Not only is the recycled polyester still a source of microplastic pollution but also using it as a green claim a little problematic from EU's point of view. (European Commission, 2022)

With the rapid growth also in the use of recycled polyester, one major enabler of spreading the microplastics is found in almost every household: the washing machine. The washing machines are the most effective channel to spread the microplastics into the wastewater as the first 5 to 10 washes of clothes is the time when the release of microplastics is at the highest. While the wastewater treatment plants are able to remove the microplastics in their processes, the plants are at the same time the source of MP pollution. (European Commission, 2022; Talvitie et al., 2017) Washing machine filters with the capability to cut down microplastics while laundering, the use and the development of mild detergents, the instructions to take care of and wash the garments, the end-of-life waste treatment and improved wastewater treatment are also ways to reduce the MP pollution. (European Commission, 2022)

2.1.4 Digital Product Passport

An important part of the EU textile strategy is the digital product passport (DPP). The digital passport isn't meant only for textiles but also for packaging, electronics, construction, batteries, and electronic vehicles. The DPP aims at transparency in the textile value chain, increasing the awareness for consumers and improving the recyclability of the products. (Adisorn, Tholen & Götz, 2021) The DPP would contain mandatory information on circularity and other key environmental aspects (European Commission, 2022).

As the consumers have the information of the origin of the product, what materials the product is made of and how it can be repaired, they can do better, more sustainable choices. The DPP also offers information for the end-of-life operators on how the garments should be handled, and the movements of the product could

be followed as it is changing locations. (Adisorn,T., Tholen,L. &Götz, T., 2021; Koppelaar et al., 2023)

Adisorn et al. (2021) conclude in their research that the applicability of the DPP begins from the manufacturers. If the manufacturers feel that DPP information is additional burden instead of an advantage, the DPP won't have the planned result in increasing circularity and changing the consumer consumption habits. Therefore, the best result in implementing the DPP would be that it bases on already existing databases and information requirements at the same time considering the experience companies already have on data collection.

In the actual implementation of DPP, the information provided would be accessible offline via physical product tags such as QR codes for all the stakeholders along the life cycle and online through the Internet. Not only reading of the data should be possible for all but also writing of the data or content must be possible for all the stakeholders. Product identification system such as a serial number or Global Trade Identifier Number (GTIN) needs to be connected to unique internet identification for getting the correct information about the product. (Koppelaar et al., 2023)

Early iterations of traceability can already be seen in brands that use i.e. the certified wool. Responsible wool standard assures the animal welfare, land health preservation, social welfare protection, chain of custody and it also offers traceability of the origin of the wool (Textile Exchange, 2021).

2.1.5 Green claims and green washing

Green washing isn't a problem that has occurred in the recent years, but it has already existed in the 1980's. It was first used to gain market share with environmentally friendly products but today the companies are trying to meet the growing demand from the consumers to produce sustainable products. Dahl (2010) defines green washing in his article with the following: if the ad and labels in the product promise more environmental benefit than they deliver, it is greenwashing.

Dahl (2010) presents the seven sins of greenwashing that are categorized by the TerraChoice Environmental Marketing.

The seven sins of greenwashing:

1. **Sin of the hidden trade-off:** suggest that the product is green with narrow set of attributes and leaves other important issues out.
2. **Sin of no proof:** a claim that cannot be verified due to third party certification or lack of accessible information.
3. **Sin of vagueness:** a claim that is loosely defined and or too broad for the consumer to understand the real meaning.
4. **Sin of irrelevance:** a claim can be true, but it is used in a context that is irrelevant for the consumer and doesn't help the customer to make environmentally friendly decisions.
5. **Sin of lesser of two evils:** a conscious decision made in advertising as the claim that can be true in the particular product category but draws the attention of the customer away from greater risks or environmental impacts.
6. **Sin of fibbing:** a claim that completely fabricated.
7. **Sin of false labels:** the products are labeled with third-party certifications or endorsements that are fake.

Consumer confusion is one of the biggest concerns in green claims. Consumers are suspicious about the claims and don't know can they rely on the statements the companies are making. Consumer Protection Cooperation (2020) conducts sweeps annually to detect misleading sustainability claims in various business sectors. In 2020 the CPC investigated 344 claims appearing on websites aimed at consumers. Almost 50% of the claims were suspected to be untrue by the Consumer Protection Cooperation (CPC). As illustrated in the figure 2, the sweep revealed that 24% of the online shops selling textile, garment and shoes had sustainability claims that were either false or deceptive. The claims that were stated on the websites had rarely any reliable information that would support the green claim, the claims were too vague for the consumer to understand them and get accurate information.

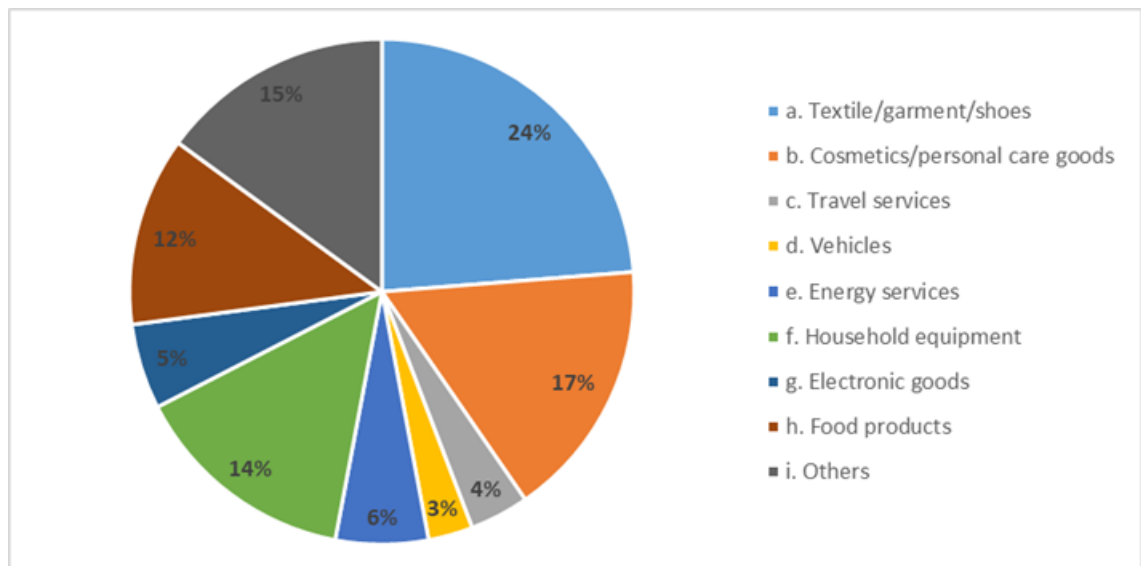


FIGURE 2. Sweep on misleading sustainability claims in 2020. (Consumer Protection Cooperation, 2020)

The sweep indicates that the concept of green washing and sustainability may be quite challenging for the companies. Some of the green claims can be added without the intention of having facts behind the claim but perhaps some of the claims are stated with a genuine intention to promote sustainability without understanding that it appears to be green washing.

Not every green claim or ecolabel is a fake, but the selection of ecolabels is becoming quite vast. A small portion of ecolabels is illustrated in the Picture 1. Ecolabels are divided into three categories, type I, type II, and type III. The type I is a third-party certified label and provides partial information about the product's environmental attributes compared with other similar products. The type I bases on certification procedures through the ISO 14024:1999 standard. The self-declared, unverified by third-party green claims by manufacturers are the type II ecolabels. They highlight e.g., one quality of the product. The type III ecolabel "Environmental Product Declaration" (EPD) is third-party verified and mostly used in business to business-markets. It consists of quantitative indicators based on Life Cycle Assessment (LCA) 14040 and 14044 standards thus providing comparable and complete information on the environmental quality of the product. (Courtat et al., 2023; Hend & Rim, 2022)

The EPD includes the carbon footprint of the product measured by GWP (Global warming potential), that calculates the greenhouse gas emission throughout the life-cycle of the product, informs the embodied energy used for production of the product, including raw material growth or extraction, all the way of processing and transportation and acidification as a measure how much chemicals are released in the air resulting in acid rain.(Bergman & Taylor, 2011)



PICTURE 1. Different ecolabels and certifications in products. (Maïmouna & Marette, 2019)

Along with the EU textile strategy, the Green Claims initiative (Directive COM/2023/166) is being launched in the EU member states. In March 2023, the European Commission published a proposal for a directive that restricts the use of green claims and aims at increased consumer trust with the green claims and that consumers are protected from the green washing. The use of green claims will be allowed if the claim can relate to EU Ecolabel, type I ecolabels, such as the Nordic swan, or to EU legislation and the claim can be proven to be true. Voluntary sustainability labels must be verified by third party and the reference for future environmental performance will also be under more thorough consideration.

2.1.6 Extended producer responsibility

Extended producer responsibility (EPR) has first appeared in the public discussion in the early 1990's. It is a policy strategy that shifts the responsibility of end-of-life product disposal from municipalities and taxpayers to manufacturers and consumers. OECD has defined the EPR is "an environmental policy approach in which a producer's responsibility for a product is extended to the post-consumer state of a product's life cycle (Lifset, Atasu & Tojo, 2013).

OECD (2018) lists the benefits of the EPR:

- reducing the number of landfills and incinerators and their accompanying environmental impacts
 - reducing the burden on municipalities for the physical and/or financial requirements of waste management
- fostering recycling and reuse of products or parts thereof
- improving the ease and timeliness of disassembling products for recycling or reuse
- reducing or eliminating potentially hazardous chemicals in products
- promoting cleaner production and products
- promoting more efficient use of natural resources
- improving relations between communities and firms
- encouraging more efficient and competitive manufacturing
- promoting more integrated management of the environment by placing an emphasis on the product's life cycle
- improving materials management

The extended producer responsibility is already regarding the electrical and electronic equipment and end-of-life vehicles to avoid the release of hazardous materials appearing at the landfills and to be able to reuse and recycle the materials and components. Also, leftover paint, batteries and unusable pharmaceuticals in households needs to be disposed according to the municipal waste instructions. (Atasu & Subramanian, 2012; Lifset et al., 2013) Lifset et al (2013) argue that instead of the intention of the EPR to provide incentives for companies to

move towards eco-design, the EPR is mainly used in funding, creating or expanding infrastructure for post-consumer recycling.

The extended product responsibility is an important part of the EU Strategy for Sustainable and Circular Textile. The extended responsibility targets at decreasing the textile waste by making the producer responsible for the waste their products create. EU commission proposed (Amending Directive 2008/98/EC) that manufacturers, importers, distributors, and online stores would be obligated to collect, to transport and to sort the textile waste for reuse and for recycling. This obligation would include household textiles, clothes, accessories, and footwear. In the proposal, companies employing under 10 persons and turnover and balance sheet under 2 million euros would be excluded.

The goal is that all member states would have harmonized EPR regulations that will improve the economics of textile waste as it no longer ends up at landfill or be incinerated and textile-to-textile recycling is the most important target (Boiten, 2022). Even though the significance of recycling cannot be diminished, Euratex (2020) highlights that EPR should value different kinds of textile as all the EoL options cannot be applied to all textiles. Personal Protective Equipment (PPE) are manufactured under strict requirements and some textiles contain chemical coatings making the textile-to-textile recycling almost impossible.

When discussing about the textiles, the scale of the sizes of textiles is very vast. Baby socks are one of the smallest textiles, and large carpets and curtains are at the other end of the scale. Boiten (2022) states that the EU Strategy for Sustainable and Circular Textiles lacks the definition of a textile from a regulatory perspective. The EU Textile regulation (2011) defines textiles as “*textile product* means any raw, semi-worked, worked, semimanufactured, manufactured, semi-made-up or made-up product which is exclusively composed of textile fibres, regardless of the mixing or assembly process employed.” In addition to the textile products also:

- a) products containing at least 80% by weight of textile fibers,
- b) furniture, umbrella, and sunshade coverings containing at least 80% by weight textile components,
- c) textile components of

- a. the upper layer of multi-layer floor coverings;
- b. mattress coverings;
- c. coverings of camping goods provided such textile components constitute at least 80 % by weight of such upper layers or coverings;
- d) textiles incorporated in other products and forming an integral part thereof, where their composition is specified (Regulation (EU) No 1007/2011, 2011).

Even though textile and clothing industry is keen on increasing circularity and improving environmental actions, some parts of the EPR has aroused opposition or discussion. Suomen Tekstiili- ja Muoti ry, STJM (The Finnish Textile and Fashion) evaluated the proposal by the request of Finnish Ministry of the Environment. For instance, the union criticized the evaluated average cost for the companies caused by collecting and recycling the textile waste too small and demands the legislators to keep the focus in developing the legislation of circular business models, and circular technologies and solutions. Therefore, the union is concerned with the competitiveness of the companies, the fairness and equality of the markets, and the additional demands the EU textile strategy sets for the companies. (Gädda, 2023)

In the preliminary statement of possible operational models of EPR in Finland, EY Advisory Oy (2023) has created two concrete operating models with different scenarios.

- a) Shared responsibility of the costs on municipalities and on producers and social companies have their own textile collection.
- b) Shared responsibility of the costs on municipalities and on producers, social companies participate only in the sorting phase
- c) Financial and operational responsibilities on producers and social companies have their own textile collection.
- d) Financial and operational responsibilities on producers and social companies participate only in the sorting phase.

The EY Advisory Oy (2023) has listed strengths and weaknesses of these presented operational models from the perspective of producers. The key findings

are presented in the following Table 2. As the report is only preliminary assessment, the effects of the EPR are only future forecasting and some of the estimated effects may not occur after the EPR models are implemented.

The social companies in Finland have acquired a solid status as an operator that handles the excess clothes from households, but it is important to note that they aren't collecting textile waste as only reusable clothing is supposed to be given to charity. Still, the social companies produce textile waste while all the clothes received cannot be reused because of the poor condition. From the producers' perspective, the social companies are problematic because they aren't manufacturers, but they would benefit from the collected textiles without financial responsibility.

	Strengths	Weaknesses
Shared responsibility and social companies' separate collection	<ul style="list-style-type: none"> Using existing collection network shortens the implementation time shared costs decrease the producers' cost structure control over the collected material new business models can be created retroactive responsibility can be divided with the municipalities 	<ul style="list-style-type: none"> partial possibility to influence in the efficiency and the costs the targets can be difficult to reach and may need incentives social companies benefit it without paying any costs increase in prices if producers need to pay for the costs of social companies
Shared responsibility	<ul style="list-style-type: none"> the integration of sorting the costs of overlapping systems are removed costs of sorting can be reduced with the expertise and workforce provided by the social companies unified material flow increases the development of second-hand markets 	<ul style="list-style-type: none"> a contradiction between the proposal and the suggestion in a matter of social companies the use of EoW products can be problematic (ownership, fees) possible decrease in material flow if social companies' collection is ceased costs of retroactive responsibility
Financial and operational responsibility on producers and social companies' separate collection	<ul style="list-style-type: none"> the possible decrease in waste better possibilities to influence in the recycling processes and meeting targets accessibility of collection network can enhance 	<ul style="list-style-type: none"> Investments of the existing collection network would be wasted Increase in costs, and prices for consumers, decrease in profitability and in competitiveness Requires significant administrative resources Retroactive responsibility can be problematic Agreements between producers and other actors can be complicated
Financial and operational responsibility on producers	<ul style="list-style-type: none"> the integration of sorting the costs of overlapping systems are removed costs of sorting can be reduced with the expertise and workforce provided by the social companies unified material flow increases the development of second-hand markets 	<ul style="list-style-type: none"> a contradiction between the proposal and the suggestion in a matter of social companies the use of EoW products can be problematic (ownership, fees) possible decrease in material flow if social companies' collection is ceased costs of retroactive responsibility

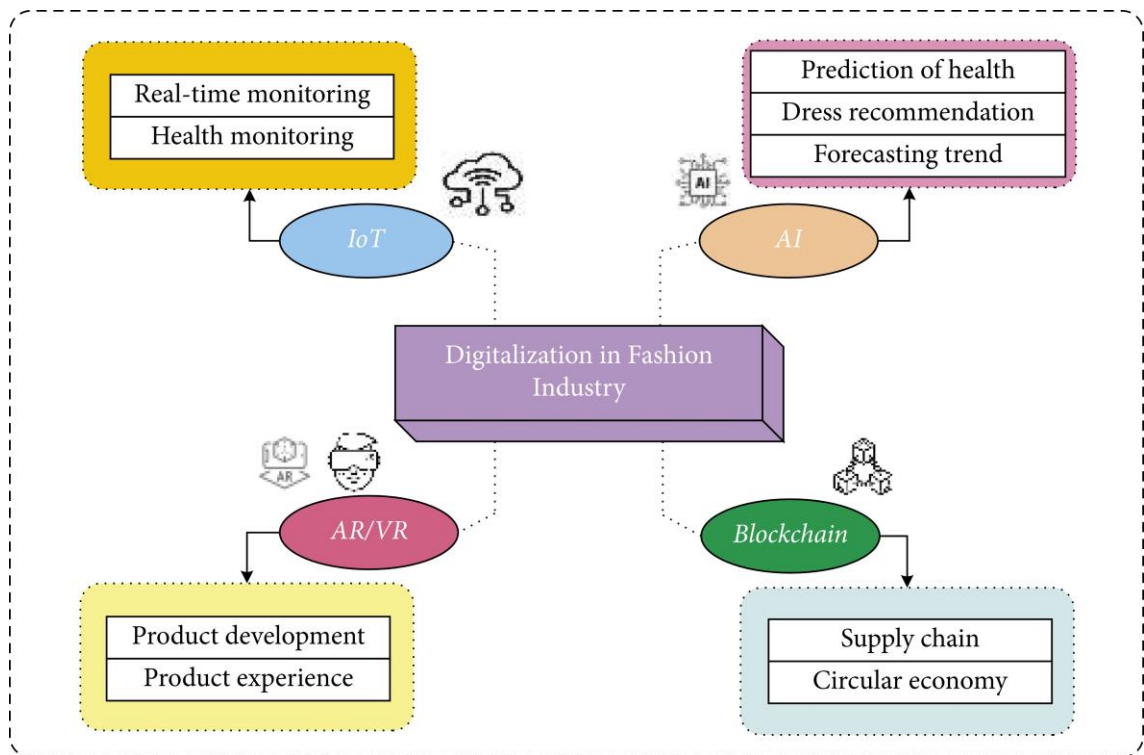
TABLE 2. The strengths and weaknesses of the suggested operational models on EPR (EY Economic Advisory, 2023)

2.2 The future of the textile industry

A part of the green transition is also the transition pathway of textiles ecosystem. The industry needs more competent workforce to develop the sector to operate in a more sustainable manner and currently it is lacking the expertise. According to European Commission (2022) 40% of European companies, especially SMEs are experiencing a “green skill gap”.

The textile strategy includes an initiative that focuses on developing the skills and competence in the textile sector. Ecodesign, fiber development, and new ways of producing textiles are areas that are important for the sustainability of the ecosystem. It requires efforts and resources on vocational education and continuous training of the current workforce. (European Commission, 2022). The textile industry has a history of being a sector that offers income for unskilled workers or workers with low education. Nowadays, for to acquire a position in a textile industry, the workers need to have good technical skills which is becoming a barrier in developing countries. (Gangoda, Krasley & Cobb, 2023) The barriers in the early phase of the supply chain naturally reflects to the manufacturer resulting with the end-user.

Digital tools are crucial players in the future of the textile industry. The emerging technologies, such as Internet of Things, (IoT), artificial intelligence (AI), augmented and virtual reality, (AR and VR) and blockchain are the key factors in transforming the industry in more sustainable ways as shown in Picture 6. AR and VR are tools used for improving the experience of shopping thus decreasing the need to return the orders bought from online shops and in product development. AI can be used in trend forecasting or choosing an attire based on environmental parameters. IoT is used more for monitoring e.g. health monitoring for elderly, patients and athletes. (Akram et al., 2022) Blockchain is used in supply chain traceability, sustainability and information security simultaneously tackling circular economy challenges (Akram et al., 2022; Wang et al., 2020).



PICTURE 6. Digital tools in fashion industry (Akram et al, 2020)

For the ambitious goals to become a reality the industry needs research, investment, and innovations. European Commission (2022) promotes sustainable growth and creating jobs for the sector locally, nationally, and regionally to be a priority. Various EU funded projects and support for green transition exists in the textile ecosystem.

2.2.1 Transition pathway for the textile ecosystem

Along with the EU textile strategy, EU launched a transition pathway for textiles ecosystem process. During the process industry, public authorities, social partners and other stakeholders co-operated in finding solutions for digital and green transitions and increasing resilience in the textiles ecosystem. (European Commission, 2022) The textiles ecosystem includes manufacturing of natural and man-made fibers into yarns and fabrics, production of yarns, home textiles, medical textiles, industrial filters, technical textiles, carpets, clothing, and production of footwear and leather (European Commission, 2022).

As the textile and clothing sector, which mainly consists of small and medium-sized enterprises (SMEs), is strong especially in the central Europe, there are a

lot of strengths in the industry and the European Commission (2022) lists the strengths:

- high quality of production
- new and innovative materials
- a lot of measures have been taken to reduce the environmental footprint
- strong and known brands with broad recognition and creativity
- strong leadership in global leading companies
- specialization of firms in new technologies and trends
- circular business models that are based on recycling, reusing and repairing are increasing. (European Commission, 2022)

As the transition pathway process included workshops, the participants of the workshop listed the main challenges in the green transition:

1. Lack of common traceability and transparency standard, measuring tools and KPIs
2. Managing post-consumer waste
3. Lack of skills for the application of sustainability principles
4. Need of R&D for sustainable processes, recycling and sorting
5. Lack of incentives
6. Lack of sustainability culture and education
7. Lack of overproduction and overconsumption reduction (Romana Rinaldi, 2022).

The European Commission has defined eight building blocks that are included in the transition pathway.

1. Sustainable competitiveness
 1. Global value chains
 2. Market surveillance
2. Regulation and public governance
 1. Ecodesign for Sustainable Products
 2. Textile Labelling Regulation
 3. Green claims directive
 4. Empowering Consumers Directive
 5. Waste framework Directive

3. Social dimension
 1. EU Gender Equality Strategy
 2. Directive on Corporate Sustainability Due Diligence
4. Research & Innovation, techniques and technological solutions
 1. disruptive technologies such as big data and AI
 2. Digital Product Passport
 3. Development of standardized methods
5. Infrastructure
 1. separately collected textile waste, sorting and recycling
 2. common European data spaces
 3. renewable energy
6. Skills
 1. ageing workforce
 2. need for specialized skills
7. Investment and funding
 1. fiber-to-fiber recycling
 2. reducing the use of virgin raw material
8. Ecosystem's readiness to support EU strategic autonomy and defense efforts
 1. medical and healthcare textiles
 2. textiles used for defence systems (European Commission, 2020).

Romana Rinaldi (2022) concludes that for the transition to be agile help from EU member states, private sector, local administrations, academia, standard setting bodies and civil society is needed.

2.2.2 Fast fashion out of fashion

The goal for the European Commission (2022) is to get “fast fashion out of fashion”. This would mean that the fashion trends would be longer, and the trend-oriented consumers wouldn't have to buy new clothes many times a year, also the price of the clothes would be higher and the quality better. The clothes would be produced responsibly, and sustainability would be an actual thing, not just green claims. It would be a contrast for the current consuming behavior where low-cost clothes with poor quality are produced rapidly for the consumers to buy as often as possible (McNeill & Moore, 2015).

It is understandable that fast fashion has its' supporters and lately it has been a trend to deviate from the mainstream by changing the consuming habits. Finnish, responsible clothing brands started to live their best years. The hype was high, and brands were popular in social media, and brands had found their target groups. But the effects of the pandemic and the war in Ukraine are taking a toll in the Finnish brands. The risen energy prices and transportation, the price of the raw materials and the inflation has increased the cost structure of the clothes. At the same time Finnish customers stopped buying more expensive clothes as the situation is also the same for the consumers. An article in Helsingin Sanomat (2023) elaborates that Finnish companies are now living critical times. Fashion brand after another get into financial trouble and are crying for help in the social media. Brick and mortar stores are closed, and the companies are focusing on online sales or trying to focus only on one business area. (Kanerva, 2023)

It is evident that transition towards more sustainable clothes is slow and demanding and ultimately it needs a change in consumer behavior and attitude change. At the same time financial equality increases and, in a country, where seasons change and proper winter clothes are needed, is it acceptable to demand the consumers to buy clothes they couldn't afford?

2.2.3 Sustainable textile value chain

As stated earlier, most of the clothes sold in Europe are imported from third countries. Global supply chains are constant cause of concern and EU is trying to tackle the problems with Corporate Sustainability Due Diligence Directive (EU 2019/1937) that is currently a proposal. This directive is based on OECD Due Diligence Guidance for Responsible Supply Chains in the Garment and Footwear Sector (2018) that was published after the catastrophe of Rana Plaza that killed over 1100 textile workers in Bangladesh causing discussion about the working conditions of the textile workers in third countries and the liability of the manufacturing companies.

OECD (2018) lists the benefits of using the guidance followingly:

- companies meet the customer expectation regarding sustainable supply chain

- reputational increase in participating enterprises adding value to the sector in hand
- better management in global operations as operational outcomes are coherent
- risks are mitigated throughout the supply chain avoiding disruption at the same time.

The OECD guidance supports the common understanding of due diligence in garment and footwear sector and provides recommendations on multinational enterprises (MNE) to implement due diligence in their operations and supply chains. The guidance doesn't remove the obligation to follow the laws and regulations established in the operating countries but offers a broader approach on due diligence issues. (OECD, 2018) Serious human and labor right violations, such as child labor, discrimination and sexual harassment, forced labor, health and safety issues, trade unions, and unfair wages, environmental factors such as hazardous chemicals, water usage, greenhouse gas emissions, bribery and corruption, resource dependencies between producing and consuming countries are issues that appear in the MNE's global supply chains. (Beyers, Leventon & Heinrichs., 2023; OECD, 2018) The EU directive (2019/1937) aims at identifying, preventing, mitigating, and removing the forementioned problems by obligating the companies to arrange their operations according to directive. Also, the EU commission (2022) is preparing a legislation that prohibits products that are produced by forced labor, including child labor on EU markets.

The problems in the supply chain and especially in human rights can occur already in the raw material extraction and still be found in the last phase of the chain when goods are sold to consumers. It is stated that this kind of exploitation of a person who is deprived of individual liberty is "modern slavery" (Stevenson & Cole, 2018). Modern slavery cases appear particularly in the third countries even though Western countries cannot be exempted and when these violations are revealed, it causes a major reputational risk.(Stevenson & Cole, 2018)

The complexity of the supply chains with the sub-contractors in the production countries form a notable problem. The proposal for the Corporate Sustainability Due Diligence Directive leaves out the sub-suppliers or sub-contractors from the

due diligence obligations focusing only to the companies and its' operations excluding SMEs. The predecessor of the directive, the LkSG Lieferkettensorgfaltspflichtengesetz in Germany obligates the companies to extend the due diligence to its' sub-suppliers if the company has substantiated knowledge of either human rights or environmental violations. (Krajewski & Dey, 2023; Patz, 2022)

The due diligence directive is being criticized being too vague in describing the problem and lacks the scale and evolution of the problem. Also, the directive is leaving out the previous work the companies have already done in sustainability issues. The directive doesn't offer any leeway in adjusting the due diligence processes proportioned to the companies' resources. Gerstain (2022) claims in her article that when companies are forced to shorten their supply chains due to liability risks and withdrawn from regions where human rights are problematic, the consequence of such a behavior is serious. The global trade would be harmed, job loss in third and emerging countries would appear and SMEs from these countries couldn't be a part of global supply chains.

Before the directive comes into force, it is crucial to find a balance between enforcing ethical practices, maintaining global trade relationships, and ensuring the inclusion of smaller enterprises in the pursuit of sustainable and responsible supply chains.

2.3 Proposal for an EU directive regarding textile waste

As a part of the EU textile strategy, EU wants to make an end for the unsustainable handling of textile waste. Amicarelli & Bux (2022) present in their research the three types of textile waste. Firstly, the waste that is produced in the manufacturing stage as a side-effect. Secondly, products that don't pass the quality inspection and therefore cannot be sold and thirdly, the waste that is produced in the end-user stage when the clothes are discarded by the consumers (Amicarelli & Bux, 2022). The type of waste that is the most problematic is the end-of-life textiles from the consumers. Most of the end-of-life textiles are being incinerated but a lot of the textiles end up in landfills, especially in third countries where they cause environmental problems. Exported textile waste from EU countries to third

countries was 1,4 million tons in 2020 and it is estimated that the numbers are still rising. (European Commission, 2022)

The latest proposal for amending the Directive 2008/98/EC on waste was published in July 2023. The objective of this proposal is to “reduce environmental and climate impacts, increase environment quality and improve public health associated with textiles waste management in line with the waste hierarchy Directive 2008/98/EC (Amending Directive 2008/98/EC, 2023). As shown in the picture 7, the order of preference for managing and disposing waste set by the Waste Framework Directive, at the top of the pyramid is the waste prevention and disposal should be the last option. The so-called “fast fashion” is considered to be the root cause of the problem as fast fashion offers multiple collections annually with low prices. Consumers are eager to buy huge quantities of clothes from sales and without any need or consideration. It is calculated that in average EU citizen produces textile waste approximately 12 kg in a year. A separate textile waste collection is becoming mandatory for EU member countries in January 2025. Currently the textile waste is collected from households and companies are not yet included in this phase. (European Commission, 2022)



PICTURE 7. Waste hierarchy (*Waste Framework Directive*, n.d.)

As the legislation changes, the definitions of what is waste, by-product and end-of-waste is important (Jacometti, 2021). End-of-waste (EoW) criteria is important

to harmonize on EU level to avoid illegal activities, such as waste trafficking, and different interpretations between Member States. Also, the safe use of high-quality raw material needs to be guaranteed with regulation. (EEB & ECOS, 2021)

European Commission defines the terms following:

Waste: “any substance or object which the holder disposes of or is required to dispose of pursuant to the provisions of national law in force”

Byproduct: “An incidental product deriving from a manufacturing process or chemical reaction, and not the primary product or service being produced. A by-product can be useful and marketable, or it can have negative ecological consequences”.

End-of-waste: “when waste ceases to be waste and becomes a product, or a secondary raw material”. (Directive 2008/98/EC, 2008)

It is already mandatory to separate the textile waste in Finland as the collection started in January 2023. The municipalities are obligated to arrange separate collection sites for households and make sure that the waste is properly recycled. Enterprises and public sector, excluding municipalities, are obligated to arrange the textile waste collection independently (EY Economic Advisory, 2023). The collected waste is transported to Paimio in a facility that mechanically recycles the waste into a new raw material. The waste is collected from curbside bins and the estimation of how full or how empty the bin is, is difficult. The collection and transportation of the end-of-life textiles forms a significant part of the cost in textile recycling, but with the help of smart tools such as IoT and AI the costs of collecting the textile waste can be decreased as emptying the bins is timely and properly planned. A study done by Martikkala et al (2023) shows that using smart recycling bins in textile collection reduces costs caused by fuel, which naturally decreases the emissions, but also labor cost, and saves time.

The directive obligates the Member States to handle the textile waste locally and plans to prohibit the illegal export of textile waste into third countries or non-EU countries. The transportation to other countries is often tended to be reuse but actually the shipment ends up as waste. EU proposal for Regulation on waste shipments aims at proper and liable manners of waste management if the waste is exported. (Waste Framework Directive, n.d.)

3 METHODOLOGY AND DATA COLLECTION METHODS

Qualitative research is difficult to define with only one definition as there are many ways to approach and analyze qualitative research. Some characteristics can be identified from qualitative research in general. Juhila (n.d) lists these features following:

- doubting what is self-evident
- favoring qualitative material
- favoring unstructured and natural data/material
- committing in close observation
- focusing in action
- valuing subjectivity
- highlighting the interpretation and meanings of the party concerned
- reflecting the position of the researcher
- tolerating complexity
- emphasizing what and how questions
- inductivity.

Given (2016) states that qualitative research has many built in limitations due to its nature. Often in quantitative research only one method is used as in qualitative research more methods are used. This way of working extends the time used for the research and uses smaller sample sizes in fewer locations. It is also difficult to verify the results of qualitative research, as it is open-ended and often results of interpretation, judgment and opinion and the results are something that cannot be measured. This leads to a situation where qualitative research isn't easily replicated. (Radu, 2023)

This research is qualitative research that aims to find out the economic actors' perspectives of the European Union's textile strategy. The answers were acquired through interviews and in the following chapters, interview as a research method is presented. Also, the ways to analyze the results from the gathered data is described and how the whole process from data collection to implementation of the empirical part was executed.

3.1 Interview survey and interview as a research method

Hirsjärvi & Hurme (2022) elaborate the interview survey and an interview as a flexible research method that offers insights on a topic that is unfamiliar to the interviewer and the answers can be unpredictable and lead to various directions in the conversation. During the interview it is easy to clarify answers and ask for explanations or justification for the opinions. But for the interview to be successful, the interviewer must have skills and experience, and the preparation for the interview is crucial. Interview is a time-consuming method, as the interviewees must be acquired, and organizing the interview and the actual implementation takes time. One of the downsides of the interviews is the room for errors that can lower the credibility of the interview. Interviewer can make errors in interpreting the answers and asking questions that can be biased. Interviewee can give answers that can be considered acceptable leaving out the actual opinion.

Interviews can be conducted face-to-face when the interviewer has the possibility to study the interviewee's expressions and tone if they are important to note. If the interview is recorded, it is easy to transcribe and the possibility in errors decrease. Interviews sent by e-mails are quick and easy way of interviewing and they offer a possibility to ask more questions and clarifications, at the same time documenting the conversation without personal contact. Interviews or surveys can also be sent via mail, but that approach is more often used in quantitative research and usually the surveys are fully structured and options for answers are given. Theme interview is a semi structured interview that consists of beforehand chosen topics with additional clarifying questions based on the theoretical framework of the study. Open interview is fully unstructured interview where only the discussed phenomena is defined. (Tuomi & Sarajärvi, 2018)

The interviews conducted via online applications such as Teams or Zoom are close to face-to-face interviews with the possibility of seeing the interviewee through cameras and recording the interview. This is a convenient way of conducting interviews if the distance is long. Interviews via phone doesn't have the same advantages as online interviews but phone conversation can also be recorded. As only interviews are used in this thesis, this thesis can be categorized as an interview survey.

3.2 Thematic analysis and qualitative content analysis

After the literature review is written, the empirical part of the work needs to correspond with the theoretical framework. By analyzing the results of the research, the joining factors can be found. It is possible to analyze the results in qualitative research in many ways, but the commonly used methods are thematic analysis, typification, narrative analysis, qualitative content analysis, and grounded theory analysis. (Tuomi & Sarajärvi, 2018; Vuori, n.d)

This research aims to find common themes from the interviews of the economic actors. The goal of the thematic analysis is to reveal the themes that are relevant to the research question, rise central issues and frequently occurring typical features of the studied phenomena (Vuori, n.d). As the thematic analysis is made from the interviews, it is important to distinguish the themes of the interview from the themes that originate from the analysis of the results. Delve, Ho & Lim-paecher. (n.d) lists the three goals of thematic analysis:

1. To identify important themes from the data.
2. To understand the relationship between the revealed themes and how they occur in the data.
3. To use the revealed themes in generating new perspectives from the studied phenomena.

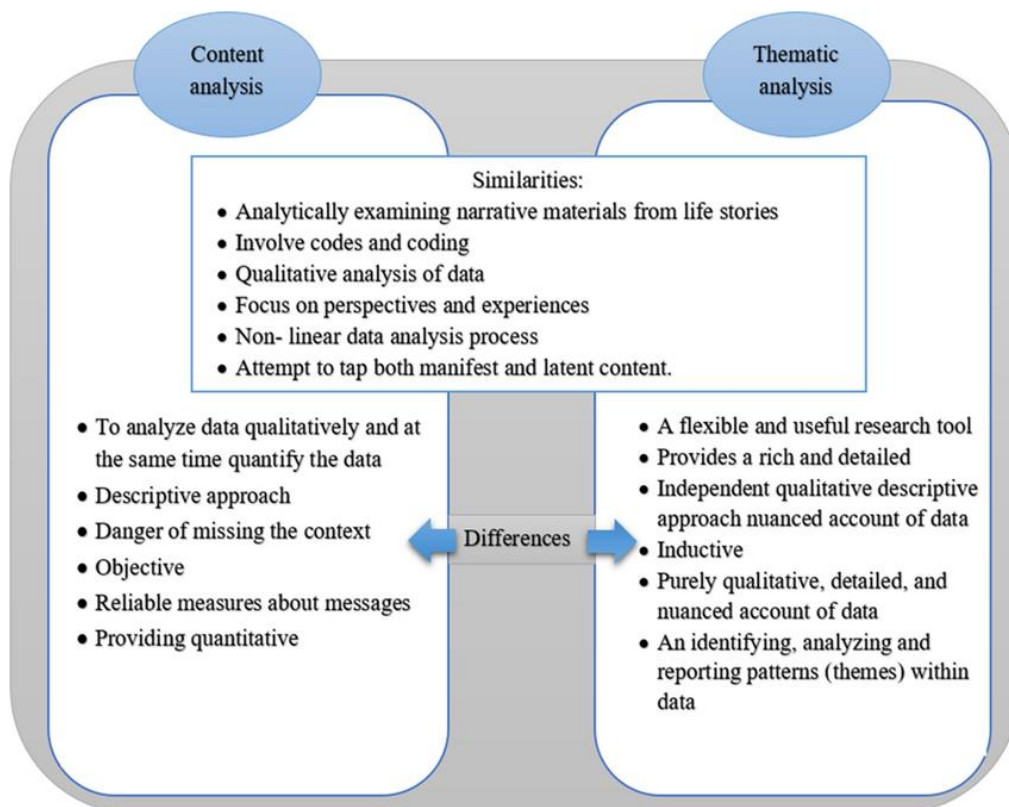
The qualitative content analysis has a lot of similarities with the thematic analysis. Content analysis can be used in qualitative and quantitative research and when the data is in the format of written text, interviews, recorded speech, or data including pictures and video (Vuori, n.d). Often the content analysis is used in visual data, and it aims at determining certain words, themes or concepts in the data. (Delve et al., n.d) The content analysis is divided into two categories, inductive and deductive, where inductive can be simplified as “from individual to general” and deductive way of thinking “from general to individual” (Tuomi & Sarajärvi, 2018). Both approaches have three phases: preparation, organization, and reporting of the results. The preparation phase includes the gathering of the data and deciding the approach, and then the data must be organized. In the inductive

approach, organizing the data consists of coding, creating categories and abstraction, whereas in deductive approach a categorization matrix is created for corresponding or exemplifying the identified categories (Elo et al., 2014).

Content analysis' goals are:

1. To identify and understand themes, patterns, and relationships within the data.
2. To explore how the data can inform theoretical claims made in research studies.
3. To quantify qualitative data (Delve et al., n.d).

As Tuomi & Sarajärvi (2018) argue, the differences between these two types of analysis are minor, as illustrated in the Picture 8, and the biggest cause of confusion is the falsely used terminology (Mirzaei & Shokouhyar, 2022; Tuomi & Sarajärvi, 2018). Even though the main analysis used in this thesis is the thematic analysis, some features of qualitative content analysis can be found also in this study.



PICTURE 8. Thematic analysis and content analysis comparison review (Mirzaei & Shokouhyar, 2022)

3.3 Data collection methods

To get a perspective on how well the textile strategy is known for amongst the different actors and what kind of thoughts and insights the strategy evokes, five actors were interviewed. Already in the planning phase of the thesis, the finding of the interviewees was identified as a challenging task. As the researcher isn't working in the textile or clothing industry, some connections with the industry existed. By exploiting the researcher's network, three of the interviewees were found. With the help of the other interviewees the remaining two participants were contacted. In the search for participants, smaller brands and companies were searched for on the internet and e-mails were sent for to get answers. Many of these e-mails wasn't replied and only one replied that the company wasn't interested in participating in the research. All the participants were eager to help and had valuable point of views of the matter even though some weren't so familiar with the strategy at all.

3.4 Implementation

The thesis process started from the idea of finding out what is the role of an importer in a sustainable supply chain. The first idea needed adjusting and in the discussions with the thesis counsellor, the idea of studying the European Union Strategy for Sustainable and Circular Textile was presented. Later, the final idea formed into studying the perspectives of economic actors.

The theoretical framework bases on the textile strategy's themes and information of the issues were searched from the literature. The literature was mainly electronic books, online publications, and e-magazines and newspaper articles. Also, a recorded panel discussion and short news clips were used as a source of information.

After the theoretical background was written, the structure of the interviews was planned, and the interviews could be implemented. The interviews were conducted either face-to-face, via Teams or by phone during October 2023. In the face-to-face meetings notes were made during the discussion and depending on

the interviewee additional question were asked. Some of the interviewees were able to answer questions more fluently and without any clarifying questions but some needed assistance to be able to answer to the open questions. Also, the time consumed for the interview varied and other interviewees were able to spend more time than others and because of that the scope of the interview varies.

The interviewees were informed that the thesis will be published and if they wanted, their identity wouldn't be revealed in the work. The recording from the interviews were saved only for the purpose of transcribing and would be removed when the thesis is finished.

The interviews and the results are presented in the next chapter and after that the analysis of the interviews, the validity, reliability and the ethics of the research are evaluated.

4 INTERVIEWS OF THE ECONOMIC ACTORS

This research was conducted by interviewing economic actors in the clothing and fashion industry who operate in the Finnish markets. To get different point of views, one importer/agent of golf clothes, an agent of sport clothes, representative from an international retail chain, an entrepreneur owning a clothing store and a buyer of a Finnish clothing brand were interviewed. The participants is positioned differently in the supply chain and depending on that position, some operations and processes need to be adjusted and altered to meet the new requirements and regulations set in the EU textile strategy.

In the following chapters the interviews of the economic actors are transcribed from notes or from recordings.

4.1 Results of the interviews

The interviews were semistructured. The topics of discussion were beforehand decided, and the questions that were asked during the interview were refining and led from the discussion. Ecodesign, microplastics, green washing, fast fashion, digital product passport and extended producer responsibility were the themes of discussion. The interviews are transcribed in the following chapters.

4.1.1 An importer/ an agent of golf clothes

The importer stated that basically the importer's ability to influence on the sold products is non-existent. Especially with the big brands that are based in the United States, the organization structure is very complex and hierarchic. Entrepreneurs at the end of the supply chain are small pieces of the puzzle . If the importer wants to sell the brand, one must settle with what is being offered regarding the products. Often the collection is composed beforehand, and the importer chooses the items one wants to sell. The products are then manufactured according to the prebooks. This is a precaution that all the items produced will be sold and the manufacturer wouldn't be left with products without a buyer. The downside with this ordering process is that it doesn't give any chances for reorders as all the products are sold to other importers/distributors and can form a

barrier for sales if the distributor is out of products to sell. Even though the distributors would want to have ecodesigned clothes, they are quite powerless to present any requirements. Thus, the ecodesign doesn't have any direct effects on the importer operations. Microplastics is also a subject that is out of importer's hands as it is an issue that is considered already in the designing phase.

The importer is already responsible for taking back reclaimed clothes, but he sees a problem also in this process also even though he supports it. The transportation of the reclaimed clothes is costly, and it is quite irrational to send single packed items across Europe. Sending back and forth the reclaimed or returned clothes causes a lot of emissions and packaging waste and makes the process less environmentally friendly. Therefore, the obligation to collect the textile waste was seen as a source of extra costs, and also a possible new source of increased emissions when the clothes are transported for disposal.

Regarding the green washing and green labels, the importer stated that the sustainability work would need more effort. The retailers aren't usually asking after this and may not be that familiar with it. What weighs in more in the collaboration is the interest in working with a particular brand and not their sustainability work. Therefore, green washing was theme he couldn't give any proper insight.

The digital product passport was also an unfamiliar concept, and his first reaction was that it would be great tool for consumers who are interested in the transparency of the supply chain and the circularity. He also suspected that many of the consumers aren't. What added value it offers to a consumer that just wants to buy new piece of clothing? With the help of DPP, the age of the used clothes could be determined, and that could be used if the clothes would have a guarantee that would enable the repairing and perhaps also the returning and recycling of the clothes.

The importer basically agreed with the strategy, but he noted some downsides in it. He thought that at the end of the day, the textile strategy is a threat for free trading. With the restriction and limitations, the EU wants to limit consumers purchasing behavior leading into decreased consumption and direct loss of profits in the clothing business. He sees the problems of the fast fashion but at the same

time he understands the people who are buying it. If or when the fast fashion is prohibited leading to exponential increase in prices of the clothes, can everyone afford to buy new clothes? What is the instance that guarantees the equality in buying clothes? It is apparent that in today's world not everyone can afford to buy sustainable clothes as the prices are usually higher but the fast fashion with low prices offers everyone a possibility to buy new clothes. Decent and proper clothing is still a significant factor at least in countries with changing seasons.

From the importer's point of view, the only way that would control the importing of fast fashion is Pigouvian tax. That would eliminate some of the fast fashion operators offering more markets for sustainable brands. But at the same time if the Pigouvian tax would be taken into use, it could lead into a situation where the clothes would be imported with different tariff line or only as a textile.

The discussion also raised some questions and issues to think. If the importer/seller will be responsible for the end-of-life textile, who will be in charge with the waste collection if the seller/importer goes bankruptcy or starts to buy clothes from another brand ending an agreement with the previous brand?

Why must the manufacturing process needs to be transparent with DPP, but consumers aren't obligated to use the product sustainably? Would it be possible to extend the DPP to consumers?

4.1.2 An agent of sport textiles

The second interviewee was an agent who works for seven international sports brands. The agent mainly distributes textiles but few sport shoes are included in the portfolio. The agent's retailer network consists of entrepreneurs and larger retail chains in Finland.

The agent wasn't familiar with the EU's textile strategy before the conversation.

Regarding ecodesign and microplastics the agent didn't have a significant opinion. Working with big, global brands the chances to influence in the collections or the materials are non-existent. But the agent can't ignore the for mentioned issues completely as green washing and sustainability of the textiles are important for the large retail companies that are his clients.

The digital product passport was also unfamiliar concept for the agent and therefore the answers regarding the DPP weren't so extensive. According to the agent, the traceability of the supply chain is already possible in clothes made of wool, but as the clothes he passes on, are mainly made of polyester, there isn't a possibility to trace the supply chain. He didn't recognize any commercial added value in the digital product passport but suspected it will increase the workload for the clients, meaning the manufacturers, which will lead to increase in costs of the goods.

The destruction of unsold textiles is according to the agent absurd but at the same time he understands it as there isn't a place to put them. The same problem forms from the end-of-life textiles, if the importers, agents, and sellers will be responsible for collecting the waste. The EPR raised more questions than propositions as the source of concern is that what will be the party that collects the waste and how much will it cost? Naturally, the price of the waste collected will be included in the price of the product. The agent suspected that similar returning system as the one in bottles and cans will be created.

4.1.3 Retailer of women's clothes

As it is important and useful to get a different perspective on the studied issue, for this research also a retailer has been interviewed. The retailer is an entrepreneur who has a store in Southern part of Finland, in a medium size city. The retailer sells international brands, mainly Danish and German and sells only women's clothes and accessories. The products are bought from Finnish agents and in average three collections per year are bought.

Regarding the ecodesign, the retailer wished that it really would increase the quality and repairability of the garments. The retailer sees a problem in today's clothes as they cannot be modified to fit for diverse bodies. With possibilities to alter the clothes as bodies can change also, the life cycle of the clothes could be extended. It is possible to make minor alterations in the clothes that are bought from her store as she offers sewing as a service. Even though repairing clothes

is an environmental act, she suspected that repair seamstresses are a profession that are disappearing and finding someone to do the repairs can be difficult.

What is important for the retailer is the timelessness of the products. That way the customer can buy products that can be worn in any season and wouldn't be fast fashion. The retailer felt that the large collections the manufacturers offer are problematic as they offer too many options and choosing the correct and convenient products for her is difficult.

The planned proposition regarding the green washing and green claims is a good thing according to the retailer as she gave an example of exaggerated green claim with products made of bamboo. Bamboo as a raw material has similar manufacturing process as viscose and the environmental impacts of that process were neglected to mention in the claims. Regulation of the claims would increase the credibility and customers wouldn't be misled. Many of the retailer's customers are conscious consumers and are aware of the certifications e.g., organic cotton. The retailer sees a clear division of customers in her clientele. One division wants to buy only natural fibres and are willing to pay more of products made of these materials and they question the quality of the product if the price is lower than in similar products. Also, the origin of the clothes can be anywhere else than in China. The other division aren't interested in the materials and the only driver for making the purchase is the price, which needs to be as low as possible.

The retailer thought that the DPP will be a big change for a customer. She considered that young conscious consumers will approve this change as they are keen on the traceability and transparency of the clothing supply chains. On the other hand, the good intention of the DPP can work also in the opposite way, when customers won't buy the products when they have all the information. This can lead to loss of sales which isn't what the DPP aims at. From the retailer's point of view, DPP would be a good thing as currently retailer must trust what has been told them without a possibility to verify the claims. They don't have any channels to find out the origin or the supply chain of the clothes. When the DPP is in use, the retailer can make justified decisions with the brands she/he wants to work with.

The extended producer responsibility causes mixed feelings with the retailer. She isn't objecting the thought of managing the waste where it is produced but she feels that the obligation for the sellers to collect the waste is challenging. What she expects from the EPR is that it would be carefully considered, the sellers, manufacturers etc, would have enough time and information on how to operate with the end-of-life textiles and the costs would be on a reasonable level. If the costs of the collection are becoming too high, it will have major effect in the SME's and their profitability.

4.1.4 Representative of an outdoor clothing company

For this research a representative from an outdoor clothing company was interviewed to get a perspective from a bigger company. The company is a part of a large consolidated company that has subsidiaries in Northern and European countries. In Finland the company has stores in the biggest cities. The company has brands of they manufacture, but they also import and buy clothes and apparel from other brands.

The company is known for high-quality, long-lasting and relatively expensive garments and these values have already existed long before the EU textile strategy. The company offers services, like washing and repairing, for customers to maintain the products in good condition as long as possible. Small repair, like buttons and waxing of water repellent clothes, can be done in all stores but for bigger actions, the repairing is centralized. If the company gets products that cannot be fixed, the parts that can be taken off and reused are removed from the products before the disposal. Regarding the reclaims, the repairing is always offered before giving back a new product. The representative sees also a change in the mentality of the manufacturers in how they correlate in reclaims. In previous years a faulty product was seen as a disgrace or a failure, but today it is more approvable to offer to repair the old product than to give a new one. The same change in attitudes is also seen in customer behaviour.

Another circular economy action taken in the company is renting of non-personal items such as tents, cookers, and other hiking/camping equipment. The company sees the value of shared economy and items that are seldom used can be rented

instead of owning them. In addition to renting, the company has started to buy second-hand products from the customers and then sold in their second-hand stores. The service is very popular, and the company had to enlarge the purchasing network to get enough goods to sell. Customers from all age groups are buying second-hand, not just young people who are turning into very conscious consumers.

Even though the number of produced clothes is still high, the size of the collections is decreasing. There are only two collections in a year and the characteristics of the collections are set by the requirements of the four seasons instead of materials and colours. Many of the companies also have timeless and seasonless clothes that are included in the collections yearly. The manufacturing bases on preorders that are done a year before the delivery, and reorders cannot be done. The stores can only sell what is bought for the whole chain of stores. That way all the products are sold, and nothing is produced for stock. This forms a barrier in b2b sales and often it is difficult to fulfil the customer's expectations of 40 similar pieces of clothing.

The origin of the raw materials isn't an issue that is raised amongst the customers. The representative assumes that the clientele relies on the fact that the materials and manufacturing processes are carefully selected in beforehand and green claims can be trusted. The image of a reliable company can stem from the price level and the quality of the products. The only thing that causes concern is the manufacturing country, which can be anything other than China.

As the micro plastics rose in the public media, the customers started to ask questions about it. But as the outerwear are mainly made from polyester or polyamide, it is difficult to avoid the micro plastics. One way to decrease the micro plastics in the water system is to wash the clothes in a washing bag that collects the micro plastics. The sales of the washing bags peaked momentarily when the topic was current in the media.

Along with the polyester and polyamide that are used in functional outerwear, wool as a raw material is also used in many products. The representative sees a clear connection between what topic is popular in the media, as it correlates with

the questions from the customers in the stores. This phenomenon was seen with down and wool and the characteristics of these materials when they peaked in the public discussion. At the moment it is already possible to trace the origin of wool and down with the QR-codes added to the labels, but in her opinion the possibility is rarely used in the stores.

The extended producer responsibility causes concerns and from the store's point of view there are a lot of unclarity with the issue. Even though the EPR obligates importers and distributors to collect the waste, should the retailers have bins for different brands and their end-of-life textiles? That is one scenario that could happen according to the representative. The international brands and manufacturers should be obligated to follow the national regulations regarding the waste collection. A great concern is that different brands will collect their own waste and then does the recycling according to their own instructions. Hopefully, the EPR is well planned and leaves no room for different interpretations.

But the company has been a pioneer in the field of end-of-life textile for years before the EPR. Customers have been able to bring their end-of-life textiles and shoes in the stores and then the collected waste is sent to Germany for processing. The representative admits that she isn't sure of what happens to the waste there, but suspects that the clothes are reused as insulation or in construction. The transparency would be important, so that the company could sure that the clothes aren't shipped to third countries to increase the environmental problems there.

The destruction of unsold clothes is an unsustainable idea as it isn't happening in their company either. The unsold clothes from the stores are sent to outlet stores and there is a possibility to transfer clothes between stores for every piece of clothing to be sold full price. It is also possible to donate clothes for charity, but the clothes given for free are relevant for the cause and not "problematic surplus". In some cases, donating reclaimed clothes is possible but the products must be usable. All the returned clothes are sold again and with the help of the staff the customers can find the right size and there is no need to change the product because of wrong size or poor fit.

At the end of the discussion the representative wished that the awareness of the textile strategy could be added within the companies and with the consumers. To be able to find information e.g., from the EPR, you must take initiative and be interested in it. Nothing is given on the behalf of the company. The Finnish textile and Fashion is an active player in the field organizing seminars and webinars and acting on the behalf of the Finnish fashion companies, but will the information be spread widely enough?

4.1.5 Buyer from a Finnish clothing manufacturer

To broaden the opinions and perspective for the research, also a buyer from a Finnish clothing company was interviewed. The main products that the company manufactures are jeans and outerwear. The company's two factories are located near the markets but also subcontracting is an essential part of their business. The products of the company are sold around Finland in a vast retailer network and the company has only factory outlets.

Quality has been an important factor in their products throughout the history of the company and the buyer feels that ecodesign requirements are already under careful consideration in their company. The clothes are already designed to be worn for a long time and jeans are considered to be high quality and durable clothes. Fashion cycle in jeans is relatively longer than in other clothes and the company focuses on classic models and approximately only 10% of the products are "high fashion" and following the changing trends. That is an efficient way for the company to longer the life cycle of the products. The recyclability of the products causes discussion at times as jeans have zippers, buttons and studs made of metal. But if the end-of-life products are recycled mechanically, the parts can be separated. As the company offers outerwear that is water/windproof or water repellent and for the clothes to have such qualities the fabric needs lamination at the same time making the garments unapplicable for mechanical recycling.

The buyer noted that the company must be very careful with the sustainability claims they state from their products. As the company is dependent on the information that the fabric manufacturers give, they cannot publish any information as long as they don't have any proof of the fact. She gave an example of jeans that

are made of clay dyed fabric and the process of clay dyeing uses less water than traditional dyeing, but they cannot use it in their marketing or in labels without proven facts. The buyer stated that they want to communicate with the consumers and make the environmental work transparent but today the company must be very careful with the statements they claim. The buyer also sees some concerns with the green claims as there are differences between the assimilation and the attitude towards the green claims already inside the EU member countries let alone third countries where the production of fabrics is often located.

What was the biggest concern from the company's perspective was the extended producer responsibility. The buyer feared that the EPR will be taken into use too early and the time for the companies to execute the actions in the EPR is too short. As the guidelines for the EPR is still quite vague, the company is unsure should they start preparing actions or should they wait for more information and instructions. An important notion is how the existing household textile waste collection works along with the obligation for the companies to collect the textile waste? Will the existing process be still functioning?

The idea of the digital product passport was great, especially for a company that already has taken into account the sustainability and environmental issues and communicates openly about them. But as the EPR, also the DPP needs to be properly planned and communicated to every participant of the supply chain. Currently it is unclear how will the workload of the stakeholders be increased, and will it be possible to gather all the wanted data for everyone to use, starting from the fabric manufacturers? The transparency of the supply chain is in general a good idea, but what added value it will bring to a customer who isn't interested in these matters. The consumers who want to know where their clothes come from, already take initiative to find out the origin of their clothes.

When discussing about the destruction of unsold clothes, the buyer is bewildered by the fact that some companies are doing that. As the production of the clothes bases on preorders from the customers, everything that is produced will be sold. In addition to that, as the clothes are timeless and models are classics, it isn't a problem to sell products from previous seasons.

As outerwear is the second biggest product group in the company, micro plastics is a notable problem in their products also. It is difficult to find a replacement for man-made fibres as customers want to have waterproof, windproof and breathable outerwear which can only be made of polyester or polyamide. The buyer thinks that maybe in the future there will be a good raw material for outerwear that isn't a source of microplastics.

According to the buyer, there is hope for textile and fashion industry even though problems at the moment are quite severe. Buying second-hand and the readiness to pay more from sustainably produced clothes are important values for the young people. As the young generation is growing up with the worrying news about the environment, they feel they can do their part by making better choices. What is important is naturally the change in the consumer behaviour. The consumers need to start thinking that would it be possible to buy from brands that take the sustainability issues seriously and buy less clothes with better quality and smaller carbon footprint. It is clear that the current way of operating is unbearable and if the acts and goals presented in the EU textile strategy will be implemented, it is evident that the emissions will decrease, and textile industry is doing its part in the green transition.

4.2 Analysis of the interviews

As the aim of the research was to get adequate information of the effects of the textile strategy for different economic actors in the textile sector, the interviewees were planned to portray different positions in the textile value chain. The goal was to find similarities in their answers, or possible deviations. From the answers, three joint themes were revealed: the general increase in expenses, the benefits of the DPP for consumer and the actual execution of the extended producer responsibility.

Three of interviewees were entrepreneurs and the businesses are their main income hence money played a significant role as risen costs lead eventually to a smaller income. The concern was that the new requirements increase the price of the clothes having a direct effect in decrease in profits. The reason for increased prices were the cost of the waste collection included in the price or the

cost of the digital product passport. Eventually, the costs are added into the final price of the product which can reduce the number of solvent customers.

The economic actors who were “paid labor” instead of the entrepreneurs didn’t rate the issue with the costs as high as the entrepreneurs did but that doesn’t mean that the issue isn’t important. They aren’t unaware of the fact that increased price level in the clothes they sell will have effects in their business, but it doesn’t have as direct impact in their income as the entrepreneurs.

All the interviewees shared a common thought that the digital product passport has benefits in the early phases of the supply chain. It would increase the traceability of the product and the transparency of the supply chain. The DPP would force all the stakeholders to be open about their operations and retailers could trust the given information. A question that all the economic actors asked was: what added value the DPP will give to a consumer who isn’t interested in the supply chain of the product? Some concerns were also presented with the actual implementation of the DPP and how much will the workload increase in each stage of the chain.

The joining topic that caused the biggest concern was the extended producer responsibility. Each interviewee hoped that when the responsibility will be implemented, all the processes and actions are carefully planned, and the responsibilities are well communicated. As the EPR is still a proposition, the companies are now unaware of should they start taking their own measures or wait for clarifications. Yet is unclear, who will start collecting the textile waste and who will pay for it, how the obligation for companies to collect the will relate to the consumers’ responsibility to separate the end-of-life textiles, and what is the role of the stores in this process?

A conclusion can be made based on the interviews that not all the themes presented in the strategy will affect all the economic actors. Importers, agents, and retailers are basically powerless in influencing the ecodesign, the micro pollution, and green washing of their products. These measures need to be taken in the planning and designing of the products, and for example the manufacturers of

raw materials need to share their information and prove the environmental claims to avoid green washing.

During the interviewing process, it became evident that some of the economic actors were more aware of the strategy than others. Even though the strategy is presented in 2022, some of the stakeholders haven't heard of it. This is a great concern, as the aim of the strategy is to decrease emissions and the environmental impacts that textile industry produces already on European level. In that process, also the SME's are playing an important role which cannot be diminished.

All the interviewees considered their company's products to be high-quality and not fast fashion. This is aligned with the definition of fast fashion as it is cheap, often poor quality and continuously changing. Their companies' clientele is ready to invest their money in clothes with better quality even though the sustainability of the clothes isn't a priority for them.

4.3 Objectivity and research ethics

Objectivity in qualitative research is basically impossible to achieve as definition of objectivity is that "the truth or independent reality exists outside of any investigation or observation (The Association for Qualitative Research, n.d.). The role of the researcher is to be as impartial as possible and operate despite of own preconceptions. The research should be unbiased, and results should be presented while being faithful to the facts (Dongen & Sikorski, 2021).

In this thesis, the researcher aimed at being impartial and tried to assess the results in a neutral way. Any judgement or inappropriate criticism for the economic actors' answers isn't portrayed in the study and as the study is independent work and doesn't have a client, there isn't a reason to interpret the answers to a more favourable way. Also, there isn't any conflict of interests with the researched issue or with the participants.

To be able to rely on the research and trust the results of the research, each researcher is responsible for the ethics of the research and must follow the principles of responsible conduct of research. Especially if the research is funded, an

ethical review of the research needs to be conducted. The review has to purposes: to protect the subject of the research and ensure the legal protection. Research data management, data protection and open access to research publications are corner stones of the integrity and every researcher must familiarize themselves with these matter during the study. (University of Helsinki, n.d.)

This research isn't funded and only data gathered during the study was the interviews. All the interviewees were told how the data is collected and how long it will be stored and how it will be published. The principles of responsible conduct of research (RCR) listed by Finnish National Board on Research Integrity TENK (2023) are listed followingly:

- integrity, meticulousness and accuracy in conducting research, in recording and presenting results, in evaluating the research and its results;
- data acquisition, research method and evaluation methods are ethically sustainable. Also, openness and responsibility are considered when publishing the results.
- other researchers' work is appropriately noted and respected, and their work sited correctly
- research is planned, executed, and reported according to scientific requirements and the data received as a result is stored accordingly.
- permits for the research are acquired and ethical review conducted, if needed
- rights, responsibilities, and obligations are agreed with all the parties in the research
- sources of financing, conflict of interests, and other possible commitments must be informed and reported
- if the researcher has conflict of interest, the researcher must recuse oneself
- good personnel and financial administration are practiced (Finnish National Board on Research Integrity TENK, 2023).

In this thesis the RCR is compiled to the best of the researcher's ability and the possible mistakes left in the thesis are unintentional.

Violations in RCR are misconduct and disregard of RCR and both violations can also violate the law. Fabrication, falsification, misinterpretation, and plagiarism are categories in misconduct. Characteristic for both violations is that it is intentional, it can be actions that are caused by carelessness, ignorance or indifference in neglecting the RCR even if it could have been avoided (Finnish National Board on Research Integrity TENK, 2023)

4.4 Reliability and validity

Reliability of a research is that to “what extent the experiment, test or other measuring procedure yields the same results on repeated trials” (Carmines & Zeller, 1979). To increase the reliability of this thesis, the aim was to find enough interviewees. It turned out to be more difficult than expected, although it was suspected to be a demanding job. It is apparent that wider scope of answers would have increased the occurrence of similar answers and answers would have been more consistent. In this case, the five participants were the minimum number of attendees to receive reliable data. If there had been less than five participants, the reliability of the research would have been questionable. It is also noteworthy how the large variation between the knowledge of the issue the interviewees had affects to the reliability. Therefore, unreliability in some extent is present.

Validity of the research means how well the research measures what it is set out to measure (Litwin, 1995). When assessing the validity, two important matters need to be evaluated: how well the used research methods correspond with the studied phenomenon and what kind of research strategy is valid? If the research isn't valid, issues that weren't meant to be researched were studied. (Hiltunen, 2009)

In this research the only way to evaluate the economic actors' perspectives was by interviewing. Other forms of interview could have been used but face-to-face interviews and online interviews were the preferred choice. Also, the results seem to be logical, and when only one person has done the interviews and analyzed the results, the differences in interviewing and in analyzing are minimal, if not completely ruled out. A possibility that the interviewees give answers that they think are correct exists, but in this case it is unlikely. Answering against their own

perspective doesn't serve any purpose. It can be concluded that the research method is valid.

5 DISCUSSION

The European Union Strategy for Sustainable and Circular Textile (2022) aims at durable, recyclable and repairable textiles overriding the fast fashion. The means to achieve the goal are diverse, and the strategy focuses on ecodesign, micro-plastics pollution, green washing, and green claims in addition to the implementation of Digital Product Passport and Extended Producer Responsibility. A significant part of the strategy is the directive of waste that changes the handling and processing of textile waste in the EU member states.

Yet the strategy also includes proposals and not yet legislation, the effects of the strategy are based on future forecasting, expectations, and theories. To find out what kind of insights, thoughts, and perspectives the new strategy evokes in actors in the textile and clothing industry, stakeholders from distributing, retailing, and manufacturing were interviewed for this research.

The key findings from the interviews can be summarized into quandary and obscurity amongst the economic actors. The economic actors either hadn't heard of the strategy at all or they found gaps in it that needed clarifying. Even though the awareness around the strategy varied, common themes from the interviews occurred.

The increasing costs, or frankly money, the critical approach to DPP and the concern of the effects of EPR were themes that appeared in the discussion. All the actors understood the means of the strategy, but it can be concluded that the communication from the legislator's side and in some cases in corporate level was inadequate. Therefore, an aspect that needs consideration is the communication of the strategy and its requisite.

The implementation of DPP and the EPR are evident topics of further research, but one profound topic could be how to engage consumers in buying more expensive and sustainable clothes, especially consumers who currently doesn't care about what they are buying.

As the goal of this thesis was to answer the research question: What kind of effects the EU textile strategy has for economic actors and their operations? the answers can be concluded followingly:

The economic actors expect their expenses to grow what can possibly lead to loss of clientele which can relate to loss in profitability. They also suspect that the workload will increase, if not in every phase of the supply chain but in some phases having a direct effect on the prices. The obligation for the manufacturers to collect the textile will lead into concrete changes that will impact the whole supply chain and therefore the implementation of the EPR needs to be carefully planned.

The changes in the textile and clothing industry are inevitable, and every economic actor and consumers too need to embrace the changes with open mind and have hope for a more sustainable future.

REFERENCES

- Adisorn, T., Tholen, L., & Götz, T. (2021). Towards a Digital Product Passport Fit for Contributing to a Circular Economy. *Energies*, *14*(8), Article 8. Read on 24.8. Requires access right. <https://doi.org/10.3390/en14082289>
- Akram, S. V., Malik, P. K., Singh, R., Gehlot, A., Juyal, A., Ghafoor, K. Z., & Shrestha, S. (2022). Implementation of Digitalized Technologies for Fashion Industry 4.0: Opportunities and Challenges. *Scientific Programming*, *2022*, e7523246. Read on 12.9.2023. Requires access right. <https://doi.org/10.1155/2022/7523246>
- Amicarelli, V., & Bux, C. (2022). Quantifying textile streams and recycling prospects in Europe by material flow analysis. *Environmental Impact Assessment Review*, *97*, 106878. Read on 6.11.2023 Requires access right. <https://doi.org/10.1016/j.eiar.2022.106878>
- Atasu, A., & Subramanian, R. (2012). Extended Producer Responsibility for E-Waste: Individual or Collective Producer Responsibility? *Production & Operations Management*, *21*(6), 1042–1059. Read on 11.9.2023. Requires access right. <https://doi.org/10.1111/j.1937-5956.2012.01327.x>
- Bergman, R., & Taylor, A. (2011). EPD-environmental: Product declarations for wood products—An application of life cycle information about forest products—Document—Gale Business: Insights. *Forest Products Journal*, *61*(3). Read on 13.11.2023. Requires access right. <https://go-gale-com.libproxy.tuni.fi/ps/i.do?p=GBIB&u=tampere&id=GALE|A268868294&v=2.1&it=r>
- Beyers, F., Leventon, J., & Heinrichs, H. (2023). Collaborative governance or state regulation? Endless efforts but little capacity for sustainability trans-

formation of the German textile sector. *Environmental Policy and Governance*, 33(1), 56–77. Read on 18.9.2023. Requires access right.
<https://doi.org/10.1002/eet.1996>

Boiten, V. (2022). *Building a circular economy for textiles supported by common rules on Extended Producer Responsibility (EPR) in the EU* (p. 16) [Recommendations and open questions for the upcoming revision of the EU Waste Framework Directive (WFD)]. Read on 27.11.2023.
https://emf.thirdlight.com/file/24/gVKylmJgVwz7mYQgVQ5igOpi.rg/EI-len%20MacArthur%20Foundation%20perspective%20on%20Extended%20Producer%20Responsibility%20for%20textiles_July%202022.pdf

Carmines, E. G., & Zeller, R. A. (1979). *Reliability and Validity Assessment*. SAGE Publications, Inc. Read on 21.11.2023. Requires access right.
<https://doi.org/10.4135/9781412985642>

Courtat, M., Joyce, P. J., Sim, S., Sadhukhan, J., & Murphy, R. (2023). Towards credible, evidence-based environmental rating ecolabels for consumer products: A proposed framework. *Journal of Environmental Management*, 336, 117684. Read on 31.8.2023. Requires access right.
<https://doi.org/10.1016/j.jenvman.2023.117684>

Dahl R. (2010). Green washing. *Environmental Health Perspectives*, 118(6), A246-52. Read on 29.8.2023. Requires access right.
<https://doi.org/10.1289/ehp.118-a246>

Delve, Ho, L., & Limpaecher, A. (2023, February 15). Content Analysis vs Thematic Analysis: What's the Difference? *Delve*. Read on 14.11.2023
<https://delvetool.com/blog/content-analysis-vs-thematic-analysis>

Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives, 2008/98/EC, The European Parliament and The Council of the European Union (2008). Read on 27.10.2023. <https://eur-lex.europa.eu/eli/dir/2008/98/oj/eng>

DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL amending Directive 2008/98/EC on waste, 2023/0234 (COD), European Commission (2023). Read on 26.9.2023. https://eur-lex.europa.eu/resource.html?uri=cellar:05b634bd-1b4e-11ee-806b-01aa75ed71a1.0001.02/DOC_1&format=PDF

Dongen, N. van, & Sikorski, M. (2021). Objectivity for the research worker. *European Journal for Philosophy of Science*, 11(3). Read on 21.11.2023. Requires access right. <https://doi.org/10.1007/s13194-021-00400-6>

Ecodesign of products—Ministry of Economic Affairs and Employment. (n.d.). Työ- ja Elinkeinoministeriö. Retrieved 15 August 2023, from <https://tem.fi/en/ecodesign-of-products>

Ellen MacArthur Foundation. (2020). *Our vision of a circular economy for fashion.* Read on 27.11.2023. <https://www.ellenmacarthurfoundation.org/our-vision-of-a-circular-economy-for-fashion>

Elo, S., Kääriäinen, M., Kanste, O., Pölkki, T., Utriainen, K., & Kyngäs, H. (2014). Qualitative Content Analysis. *SAGE Open*, Vol 4, issue 1. Read on 14.11.2023. Requires access right. <https://doi.org/10.1177/2158244014522633>

Euratex. (2020). *Extended Producer Responsibility (EPR) in textile products* (p. 6) [Position paper]. Read on 27.11.2023. <https://euratex.eu/wp-content/uploads/EPR-position-paper-FIN.pdf>

European Commission. (2020). *Transition pathway for the textiles ecosystem* (Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs). Publications Office of the European Union. Read on 13.9.2023. <https://op.europa.eu/en/publication-detail/-/publication/6392f189-0416-11ee-87ec-01aa75ed71a1/language-en>

European Commission. (2022). *EU Strategy for Sustainable and Circular Textiles* (p. 14) [Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions]. Read on 6.9.2023. https://eur-lex.europa.eu/resource.html?uri=cellar:9d2e47d1-b0f3-11ec-83e1-01aa75ed71a1.0001.02/DOC_1&format=PDF

European Environmental Bureau, & European Environmental Citizens' Organization for Standardisation. (2021). *Key recommendations for the development of further EU-wide end-of-waste (EoW) criteria*. Read on 23.11.2023. https://eeb.org/wp-content/uploads/2021/01/ECOS-EEB-comments_EoW-criteria_20210122.pdf

EY Economic Advisory. (2023). *Esiselvitys tekstiilien tuottajavastuun mahdollisista toimintamalleista Suomessa* (p. 43) [Esiselvitys]. Read on 31.10.2023. <https://www.stjm.fi/wp-content/uploads/2023/10/Esiselvitys-tekstiilien-tuottajavastuun-toimintamalleista-loppuraportti.pdf>

Finnish National Board on Research Integrity TENK. (2023, September 7). *Responsible Conduct of Research (RCR)*. Finnish National Board on Research Integrity TENK. Read on 17.11.2023. <https://tenk.fi/en/research-misconduct/responsible-conduct-research-rcr>

Gädda, E. (2023). *Suomen Tekstiili & Muoti ry:n näkemyksiä tekstiilien laajennetusta tuottajavastuusta*. Suomen Tekstiili & Muoti. Read on 1.9.2023.

<https://www.stjm.fi/uutiset/suomen-tekstiili-muoti-ryn-nakemyksia-tekstiilien-laajennetusta-tuottajavastuusta/>

Gangoda, A., Krasley, S., & Cobb, K. (2023). AI digitalisation and automation of the apparel industry and human workforce skills. *International Journal of Fashion Design, Technology and Education*, Volume 16, issue 3, 319–329. Read on 28.9.2023. Requires access right. <https://www.tandfonline-com.libproxy.tuni.fi/doi/full/10.1080/17543266.2023.2209589>

Gerstain, A. (2022). *Corporate sustainability due diligence directive Bureaucratic monster or meaningful tool?* Read on 21.9.2023. <https://op.europa.eu/en/publication-detail/-/publication/d0224546-1f68-11ed-8fa0-01aa75ed71a1/language-en>

Given, L. (2016). *100 Questions (and answers) about qualitative research*. SAGE Publications, Inc. Read on 15.11.2023. Requires access right. <https://methods-sagepub-com.libproxy.tuni.fi/book/100-questions-and-answers-about-qualitative-research/i407.xml>

Hancock, A., & Johnston, I. (2023). EU states back ban on destruction of unsold clothing. *FT.Com*. Read on 21.8.2023. Requires access right. <https://www.proquest.com/docview/2812958343/citation/3B68B2137EE94BBDPQ/1>

Hend, G., & Rim, L.-A. (2022). Ecolabel: Is More Information Better? *Environmental Modeling & Assessment*, 27(3), 505–524. Read on 31.8.2023. Requires access right. <https://doi.org/10.1007/s10666-021-09791-5>

Hiltunen, L. (2009). *Validiteetti ja reliabiliteetti*. Read on 16.11.2023. http://www.mit.jyu.fi/ope/kurssit/Graduryhma/PDFt/validius_ja_reliabiliteetti.pdf

- Hirsjärvi, S., & Hurme, H. (2022). *Tutkimushaastattelu: Teemahaastattelun teoria ja käytäntö* (2.painos). Gaudeamus. Read on 14.11.2023. Requires access right. <https://www.ellibslibrary.com/reader/9789523458123>
- Jacometti, V. (2021). *The New Frontiers of Fashion Law* (R. E. Cerchia & B. Pozzo, Eds.). MDPI - Multidisciplinary Digital Publishing Institute. Read on 15.11.2023. Requires access right. <https://doi.org/10.3390/books978-3-03943-708-5>
- Kanerva, A. (2023). *Muoti | Kierrätettyjen vaatteiden suosio lisäsi kotimaisten muotibrändien ahdinkoa: Taas kaksi yritystä ajautui ongelmiin*. Read on 17.8.2023. Helsingin Sanomat. <https://www.hs.fi/kulttuuri/art-2000009782122.html>
- Kerll, L. (2023). *Towards a redesign of the fashion and textile industry? : Corporate perspectives on the EU Strategy for Sustainable and Circular Textiles* [Master thesis, Norwegian University of Life Sciences, Ås]. Read on 27.11.2023. Requires access right. <https://nmbu.brage.unit.no/nmbu-xmlui/handle/11250/3076807>
- Koppelaar, R. H. E. M., Pamidi, S., Hajósi, E., Herreras, L., Leroy, P., Ha-Young, J., Concheso, A., Radha, D., Francisco, F. B., Parrado, C., Dell'Ambrogio, S., Guggiari, F., Leone, D., & Fontana, A. (2023). A Digital Product Passport for Critical Raw Materials Reuse and Recycling. *Sustainability*, 15(2), 1405. <https://doi.org/10.3390/su15021405>
- Krajewski, M., & Dey, S. (2023). Effective Human Rights Due Diligence Ten Years After Rana Plaza?: Assessing the complaint against IKEA and Amazon under the German Supply Chain Due Diligence Act. *Verfassungsblog*. Read on 20.9.2023. Requires access right. <https://doi.org/10.17176/20230510-181712-0>

- Lifset, R., Atasu, A., & Tojo, N. (2013). Extended Producer Responsibility. *Journal of Industrial Ecology*, 17(2), 162–166. Read on 11.9.2023. Requires access right. <https://doi.org/10.1111/jiec.12022>
- Litwin, M. S. (1995). *How to Measure Survey Reliability and Validity*. SAGE Publications, Incorporated. Read on 21.11.2023. Requires access right. <http://ebookcentral.proquest.com/lib/tampere/detail.action?docID=5400783>
- Lounais-Suomen jätehuolto. (n.d.). Kuntien jätelaitosten rooli poistotekstilikeräyksessä. *Poistotekstiilin kierrätys*. Retrieved 6 November 2023, from <https://poistotekstiili.isjh.fi/poistotekstiilin-kerays-ja-lajittelu/kerayksen-ja-lajittelun-taustat/>
- Maïmouna, Y., & Murette, S. S. (2019). A Review of Eco-labels and their Economic Impact. 2019, 13 (1-2), 119–163. Read on 31.8.2023. Requires access right. <https://hal.inrae.fr/hal-02628579/document>
- McNeill, L., & Moore, R. (2015). Sustainable fashion consumption and the fast fashion conundrum: Fashionable consumers and attitudes to sustainability in clothing choice. *International Journal of Consumer Studies*, 39(3), 212–222. Read on 24.11.2023. Requires access right. <https://doi.org/10.1111/ijcs.12169>
- Mirzaei, S., & Shokouhyar, S. (2022). Applying a thematic analysis in identifying the role of circular economy in sustainable supply chain practices. *Environment, Development and Sustainability*. Read on 13.11.2023. https://www.researchgate.net/figure/Thematic-analysis-and-content-analysis-comparison-review_fig2_359174501

- OECD. (2018). *OECD Due Diligence Guidance for Responsible Supply Chains in the Garment and Footwear Sector*. OECD. Read on 18.9.2023. Requires access right. <https://doi.org/10.1787/9789264290587-en>
- Organization for Economic Co-Operation and Development. (2021). *Policies to Reduce Microplastics Pollution in Water: Focus on Textiles and Tyres*. OECD Publishing. Read on 18.9.2023. Requires access right. https://www-oecd-ilibrary-org.libproxy.tuni.fi/environment/policies-to-reduce-microplastics-pollution-in-water_2a89dea1-en
- Patz, C. (2022). The EU's Draft Corporate Sustainability Due Diligence Directive: A First Assessment. *Business and Human Rights Journal*, 7(2), 291–297. Read on 20.9.2023. Requires access right <https://doi.org/10.1017/bhj.2022.19>
- Pigosso, D. C. A., Zanette, E. T., Filho, A. G., Ometto, A. R., & Rozenfeld, H. (2010). Ecodesign methods focused on remanufacturing. *Journal of Cleaner Production*, 18(1), 21–31. Read on 15.8.2023. Requires access right. <https://doi.org/10.1016/j.jclepro.2009.09.005>
- Radu, V. (2023). Qualitative Research: Definition, Methodology, Limitation, Examples. *Omniconvert Ecommerce Growth Blog*. Read on 15.11.2023. <https://www.omniconvert.com/blog/qualitative-research-definition-methodology-limitation-examples/>
- Regulation (EU) No 1007/2011 of the European Parliament and of the Council of 27 September 2011 on textile fibre names and related labelling and marking of the fibre composition of textile products and repealing Council Directive 73/44/EEC and Directives 96/73/EC and 2008/121/EC of the European Parliament and of the CouncilText with EEA relevance, 64 (2011).

Read on 27.11.2023. https://publications.europa.eu/resource/cellar/85f446fd-05a5-47d7-b0d3-96418710a1e0.0011.02/DOC_1

Romana Rinaldi, F. (2022). *Results of the survey and workshop on sustainability: Proposed actions*. Read on 13.9.2023. <https://ec.europa.eu/docsroom/documents/52641?locale=en>

Salmi, S. (2023). *Chilen aavikolla nököttää niin valtava vaatevuori, että sen voi nähdä avaruudesta – katso, mistä on kyse*. Yle Uutiset. Read on 6.11.2023. <https://yle.fi/a/74-20047760>

Stevenson, M., & Cole, R. (2018). Modern slavery in supply chains: A secondary data analysis of detection, remediation and disclosure. *Supply Chain Management*, 23(3), 81–99. Read on 19.9.2023. Requires access right <https://doi.org/10.1108/SCM-11-2017-0382>

Stolzmann, J. (Director). (n.d.). *Pakettirumban piilotetut päästöt | Spotlight | Yle Areena*. Retrieved 21 August 2023, from <https://areena.yle.fi/1-50677550>

Substantiation and communication of explicit environmental claims (Green Claims Directive), 2023/0085(COD), European Commission (2023) Read on 27.10.2023. <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52023PC0166>

Talvitie, J., Mikola, A., Koistinen, A., & Setälä, O. (2017). Solutions to microplastic pollution – Removal of microplastics from wastewater effluent with advanced wastewater treatment technologies. *Water Research*, 123, 401–407. Read on 14.9.2023. Requires access right. <https://doi.org/10.1016/j.watres.2017.07.005>

Textile Exchange. (2021). *Responsible Wool Standard* (Responsible Wool Standard 2.2) [Standard]. Read on 23.11.2023. Requires access right.

<https://textileexchange.org/app/uploads/2020/08/RAF-101a-V2.2-Responsible-Wool-Standard.pdf>

The Association for Qualitative Research. (n.d.). *The glossary of Terms*. The Association for Qualitative Research. Retrieved 20 November 2023, from <https://www.aqr.org.uk/glossary/objectivity>

Tuomi, J., & Sarajärvi, A. (2018). *Laadullinen tutkimus ja sisällönanalyysi* (Uudistettu laitos). Tammi. Read on 13.11.2023. Requires access right. <https://www.ellibslibrary.com/book/9789520400118>

University of Helsinki. (n.d.). *Research ethics | University of Helsinki*. Retrieved 20 November 2023, from <https://www.helsinki.fi/en/research/research-integrity/research-ethics>

Vuori, J. (2023). *Yleiset analyysitavat*. Tietoarkisto. Read on 13.11. 2023. <https://www.fsd.tuni.fi/fi/palvelut/menetelmaopetus/kvali/analyysitavan-valinta-ja-yleiset-analyysitavat/teemoittelu/>

Wang, B., Luo, W., Zhang, A., Tian, Z., & Li, Z. (2020). Blockchain-enabled circular supply chain management: A system architecture for fast fashion. *Computers in Industry*, 123, 103324. Read on 12.9.2023. Requires access right. <https://doi.org/10.1016/j.compind.2020.103324>

Waste Framework Directive. (n.d.). Directorate-General for Environment Retrieved 16 November 2023, from https://environment.ec.europa.eu/topics/waste-and-recycling/waste-framework-directive_en

Woollven, V. (2023). EU outlines its position on the destruction of unsold textiles. *Outdoor Industry Compass*, 3. Read on 21.8.2023. Requires access right. <https://www.proquest.com/docview/2819113059/abstract/6C7522A4FEB54A43PQ/1>

Ziemann, M. (2018). *Suomeen ehkä tuleva Amazon heittää asiakaspalautuksina tulevia tuotteita suoraan roskeen – murskaa niin kännykät kuin pesukoneetkin*. Yle Uutiset 26.6.2018. Read on 21.8.2023. <https://yle.fi/a/3-10272882>