Analyzing factors that impede consumption to address demand-articulation failure

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Executive Summary

INTRODUCTION

Governments worldwide are constantly pursuing economic development that is innovation-driven and inclusive. However, present-day challenges, including environmental and societal threats such as climate change and public health concerns, are barriers to economic development. Mission-Oriented Innovation Policies are a powerful tool that acknowledges the importance of addressing these societal problems and drives innovative transformation associated with technological breakthroughs across socio-technical systems.

In reality, innovation finds its true purpose in the hands of consumers, and the relationship between consumers and missions is crucial for the longevity contribution to the success of the innovation. However, the existence of policies in the system does not ensure public demand, although it claims to tackle the challenge. The root cause and the factors causing demand articulation failure in transitions is unknown. Although Mission-Oriented Innovation Policies are deployed in the EU to reach sustainable development goals, there is often a lack of demand for innovation to achieve economic growth and address societal challenges.

The concept of demand articulation emphasized the need to investigate the barriers to consumption, as the ideas of consumption and demand are linked. This study aims to address factors that impede consumption to understand demand articulation failure. The research is based on exploratory methodology and is designed to add relevance to the MIP by diving into the case of the Dutch fashion industry and drawing insights from the case. The industry is a socio-technical system in the process of transitioning to a circular economy. Mission-Oriented Innovation Policies exist in the Dutch fashion sector to reach 100% circularity in the industry by 2050.

Prior research under-addresses consumption aspects in the fashion industry. But the lack of consumption of circular products and services has hindered circular business models. Therefore, demand for circular clothing products is required for a transition to a CE in the fashion industry. To create the demand, factors influencing individual-level consumption are considered beneficial.

Based on the identified research gap, the study aims to address the main question-*"What individual-level factors are responsible for the demand articulation failure as they impede the individual-level consumption of circular fashion in the Dutch fashion industry?"*

To answer the main research topic, supporting sub-research questions have been established.

1. Which existing behavioural models are relevant for understanding the consumer consumption behaviour of circular fashion?
2. What individual-level factors can influence the consumption behaviour of circular fashion?
3. What are the individual-level factors that act as barriers towards the consumption of circular fashion in the Netherlands?

The research is an exploratory study and uses a qualitative approach. Data collection has been done through both primary and secondary sources of data. Literature review and interviews were the two approaches used.

This study would answer the research question by considering the case study of the fashion industry in the Netherlands. The research will analyze the real-life context of the fashion industry and identify the micro-factors impeding consumption, further leading to demand-articulation failure. This information will be used to provide implications to policymakers.

METHODOLOGY

The research is an exploratory study using a qualitative approach to gain a rich understanding. The data collection has been done through two approaches, namely literature review and interviews. First, the literature review consisted of theories that explain consumer adoption, behaviour, and decision-making process along with European Commission reports and literature related to sustainability, circular economy and sustainable consumption. Then, semi-structured interviews were conducted with target groups, mainly non-consumers, sustainable fashion consumers, CE strategists, fashion designers, fashion entrepreneurs implementing circularity, researchers, sustainability consultants to gain in-depth information. The obtained data were then analyzed by transcribing the recorded interviews and verifying the interviews' summaries with the respective respondents. Then, the different circular fashion consumption methods were identified, and the 9R framework of circularity was associated with it. Finally, this obtained data was quantified to identify the barriers.

FINDINGS

To answer the first sub-research question, various theories related to consumer adoption, buying process and behaviour were discussed. This included Innovation Adoption and Diffusion theory by Rogers (2003), Consumers' decision process by Kotler et al. (2008). These helped the researcher identify factors that could influence consumption, i.e., the factors that would lead to consumer adoption and rejection. This included factors under the category of Demographic, Psychological, Cultural and Social (as explained in Chapter 4). Further, Theory of Planned Behaviour developed by Ajzen & Fishbein (1977) and Value belief norm model developed by researchers Stern et al. (1999) were studied to understand aspects consumer behaviour that included Attitude, Subjective Norm and Perceived Behavioural Control and the influence of values respectively on consumer behavior.

To answer the second sub-research question, it was important to understand the factors that impede circular fashion consumption. For this, the researcher used the existing literature related to circularity, circular fashion, sustainable consumption and sustainable fashion to derive a list of influencing factors as elaborated in Chapter 5. This included Demographic factors, Awareness and Knowledge and Garment characteristics. The demographic factors include- Age, Gender, Income. Garment characteristics include- Price of the clothing and product attributes (quality, style, variety). Moreover, it was identified that Subjective Norm is influenced by Culture and Perceived Behavioural Control by Availability of the clothing and Transparency in Sustainability. Finally, it was identified that Biospheric and Egoistic Values mainly influence the Personal Norm.

To answer the third sub-research question, the researcher conducted 13 semi-structured interviews. Based on the interviews, the researcher aimed to identify additional individual-level factors that might influence circular fashion consumption and derive the final list of factors that might act as barriers; these aspects have been explained in detail in Chapter 8. There exist diverse methods through which a consumer can contribute towards circularity in the fashion industry. However, there is not an integrated experience that supports the consumer to act circularly. The consumer contribution methods included donating, sharing, consuming sustainable clothing, Vintage clothing, rental clothing, second-hand clothing, recyclable/ recycled clothing.

The researcher developed an understanding that circular fashion cannot be considered holistic as it consists of multiple variables that could vary based on the consumption method. Hence, to obtain a more generalized view, the consumption methods were associated with the 9R framework of strategies. This included-
- Sharing and donating associated with R1 Rethink strategy
- Reducing consumption and consuming sustainable fashion associated with R2 Reduce strategy
- Vintage, Rental and second-hand clothing- R3 Reuse strategy

- Upcycling- R6 Remanufacture
- Recyclable/ Recycled Clothing- R8 Recycle strategy

The influence of certain factors can be generalized; however, some factors vary according to the choice of the consumption methods. For instance, some factors followed a general trend across all circular fashion consumption methods: price, income, awareness and knowledge, availability, culture, and transparency. Other factors whose influence depended on the consumption method included age, product attributes, gender, hygiene, marketing power, brand loyalty, and ease of recycling.

The study aims to contribute to the stock of knowledge on Mission-oriented Innovation Policies (MIP) by addressing the cause of demand-articulation failure. Through this research, consumption behavior has been analyzed so that demand failure could be addressed. This is done by linking MIP literature with consumer behaviour and adoption literature. This research aims to add relevance by identifying the micro-factors (individual-level) that impede consumption in the transition in the presence of Mission-Oriented innovation policies. The factors impeding consumption would further address the demand articulation failure. The insights through the case study regarding the potential barriers would contribute to a better understanding of market creation. The barriers have been identified by quantifying the qualitative data.

RECOMMENDATIONS
The recommendations have been provided on the basis of the discovered influencing factors-
- The government could spread awareness about the impact of the current fast fashion consumption and the alternative sustainable and circular options available. For example, The Fashion for Good in Amsterdam is an opportunity.
- There needs to be an agreement on sustainability labelling on a European level and investment in marketing to make these labels well known. There need to be laws to ensure labels and brands are transparent.
- The government should encourage customers to contribute towards circularity. This could be done by incentivizing consumers to donate their garments sustainably to ensure they can be reused and/or recycled.
- Companies that intend to contribute towards circularity could tailor their business model to a specific R strategy as the factors influencing consumption could have a diverse influence based on the consumption method.
- An essential aspect of circularity is transparency. Companies could create a digital environment through which consumers can engage with circular products. Information regarding the fibre source, certifications and the production steps to create awareness of what is being consumed could be provided. The digital environment could offer an opportunity to resale, repair, or recycling, and maybe even refurbishing at some point.
- Corporates should know how to construct clothing that is easy to be repaired (R4 Repair strategy). In this way, the garments could be kept in use and upcycled to a new consumer who sees value in it.
- Sustainable fashion companies could collaborate with fashion influencers to create and promote sustainability.
- Currently, circular fashion products are not widely available and are restricted to specific age groups. Hence, the companies should target all age groups to attract more consumers.
- Companies need to consider men as their target market and start marketing their products to attract men, as usually men are loyal customers and currently rental and second-hand clothing shops have clothing for only females or unisex items.

- Consumers find it difficult to portray their image due to a lack of variety in circular clothing. The companies could seek funds from venture capitalists or the government to focus on the product attributes to attract more consumers.

LIMITATIONS
- Due to the COVID pandemic and time limit, the respondents interviewed were limited and cannot fully represent the opinion of the Dutch population. As a result, the results arise from a skewed perspective.
- Circular fashion consumption is not a holistic concept as different consumption methods could contribute to achieving circularity. Also, the influence of the factors based on the consumption method varied and hence the influence of the factors cannot be generalized.
- The different consumption methods were categorized into R-strategies to obtain the generalized influence of the factors corresponding to the consumption method associated with the particular R-strategies. However, not all the R-strategies could be associated with methods that could contribute towards achieving circularity.

FUTURE RESEARCH
- Future researchers could test the propositions developed in this thesis by carrying out surveys. Surveys are considered the best method to understand consumer attitudes and behaviour. Surveys would help carry out statistical analysis and explain consumer behavior in a better way.
- Moreover, future research could look into whether the usage marketing tactics used and the involvement of a branded clothing in circular consumption methods have implications on the adoption of circular fashion.
- As already mentioned, circular fashion consumption methods are so diverse that it is impossible to generalize the influence of the identified factors. Hence, the researcher should focus on a single R strategy and focus on the consumption methods for future research. By focusing on a single R strategy or a particular consumption method, an in-depth analysis could be done to understand the barriers that obstruct consumption with the respective R strategy.

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List of Abbreviations

MIP   Mission-oriented Innovation Policies

MIS   Mission-oriented Innovation System

MLP   Multi Level Perspective

CE   Circular Economy

SDG   Sustainable Development Goal

MOT   Management of Technology

EC.   European Commission

R&D   Research and Development

R&I   Research and Innovation

CC.   Collaborative Consumption

ERB   Environmentally Responsible Business

SRB   Socially Responsible Business

TRB   Theory of Planned Behaviour

TRA   Theory of Reasoned Action

NAM   Norm-Activation Model

VBN   Value Belief Norm

BI   Behavioural Intention

PBC   Perceived Behavioural Control

AC   Adverse Consequences

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1. Introduction

1.1. Mission-Oriented Innovation Policies and demand articulation

Governments worldwide are constantly pursuing innovation-driven, inclusive, and sustainable economic development (Mazzucato, 2016). However, present-day challenges, including environmental threats such as climate change and demographic and public health concerns, are barriers to economic development. These challenges are termed 'wicked' or 'grand challenges' as the understanding of causes and effective remedies are limited and require urgent attention (Mazzucato, 2017). Mission-oriented Innovation Policies (MIP) are a powerful tool to drive innovative transformation associated with technological breakthroughs across socio-technical systems and address societal and environmental challenges (Wanzenböck et al., 2019; Brown, 2020; Mazzucato, 2016). These policies are driven by normative or political goals that differ from the traditional market failure approach that focuses on economic growth and fails to address the societal challenges (Knight et al., 1993; Alkemade et al., 2011).

Based on institutional and evolutionary theories, the innovation approach views innovation as an individual and a collective act involving many vital stakeholders (Boon & Elder, 2018). In reality, innovation finds its true purpose in the hands of consumers, and the relationship between consumers and missions is crucial for the longevity contribution to the success of the innovation (Mazzucato, 2016). Demand for innovation is necessary for the mission-oriented approach to tackle a challenge and innovation to impact society. The readiness of a consumer to pay a set price to meet their needs or desires is known as demand. (Boon & Edler, 2018). The policies enable the consumers to uptake innovations leading to demand articulation (Boon & Edler, 2018). The accumulation of citizens' needs or desires at the societal level is known as demand articulation.

The policies in a Mission-Oriented Innovation System (MIS) assist in addressing the goals, such as grand societal goals, and then to design policy measures that push citizen demand towards policy goals (Edler & Fagerberg, 2017). However, the existence of policies in the system does not ensure public demand, although it claims to tackle the challenge (Hekkert et al., 2007; Boon & Edler, 2018). The lack of public demand is demand articulation failure. The root cause and the factors causing demand articulation failure in transitions is unknown, despite their importance in market formation (Hekkert et al., 2007; Boon & Edler, 2018; Geels & Schot, 2007; Bergek et al., 2015).

The transition framework of Multi-Level Perspective (MLP) conceptualizes the interaction of three levels of development: 'niche' where innovation emerges, 'regime' the dominant way of societal provisioning function and the exogenous 'landscape' (Rip & Kemp, 1998; Geels, 2002). The overarching landscape deals with the slow-changing external factors for engagement of actors and the influence on the regime and niche (Geels & Schot, 2007). Mission-Oriented Policies are a part of the landscape and influence the dynamics of the regimes and niches. The 'regime' represents the dominant technologies and associated socio-technical systems within a market, characterized by incremental patterns of innovation. The niche represents the novel radical innovations in their infancy that challenge the dominant innovation in the market.

According to sociologists, there are three significant levels of society: macro, meso, and micro and the behaviour occurring at different levels is interconnected. The micro-level represents individuals' behaviour, meso-level describes behaviour of a specific group or organization, and macro-level examines the behaviour of the society considering the social, political, and economic factors that impact the society and individuals (Ahmadi, n.d). The figure below depicts the three levels.
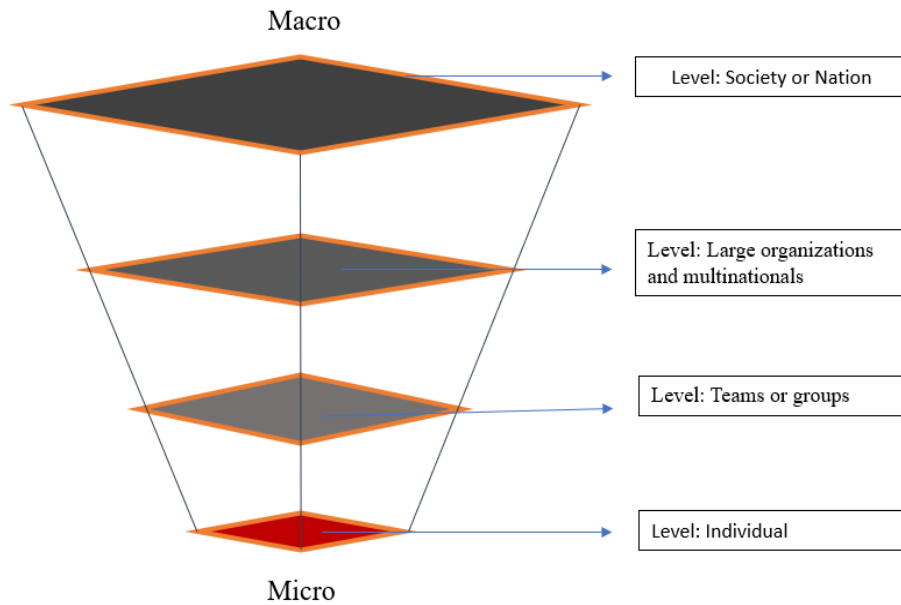
Figure 1: Multi-level of society

As already mentioned, the role of policy in an MIS is to drive a citizens' demand towards policy goals (Edler & Fagerberg, 2017). For a radical innovation to move from niches to regimes, the demand that exists at the nation's level needs to have a significant market share. This market share can be achieved through individual consumption. Consumption is the usage of goods or services in the context of social values in an economy. (Black et al., 2009). Regardless of the unit of analysis (micro, macro), consumptions and demand differ. There can still be a demand for a product X while consumption is zero. For example, consumers can still demand X, while X is not being produced or supplied and hence not consumed.

For this research, the concept of demand articulation emphasizes the need to investigate the barriers to consumption, as the ideas of consumption and demand are linked. Therefore, it is essential to understand consumption to explain demand articulation failures (i.e., the absence of demand) in transitions. Hence, micro-level consumption, as depicted in the illustration, at the individual level, is crucial in understanding the macro-level demand for innovations. On one level, the dynamic nature of behaviour evokes changes in other levels (Erez & Gati, 2004).

The research is based on exploratory methodology and is designed to add relevance to the MIP by diving into the case of the Dutch fashion industry and drawing insights from the case. The industry is a socio-technical system in the process of transitioning to a circular economy. Mission-Oriented Innovation Policies exist in the Dutch fashion sector to reach 100% circularity in the industry by 2050. Therefore, there is a need to understand what impedes consumption to understand better what hinders demand. The researcher would discover the impeding factors by analyzing the micro-level consumption that individuals encounter, as no previous study in the context of transitions has been done.

1.2. The fashion industry's sustainability concern

1.2.1. Circular Economy as a probable solution.

Fashion's association has been primarily with comfort and protection and represents civilization's unique identity in style, culture, and taste. Globally, the industry employs over 300 million people (Gazzola et al., 2020). Clothing production nearly doubled in the previous 15 years, indicating that the industry has expanded significantly over the last two decades (Todeschini et al., 2017). There has been a widespread consumption of fast fashion and to meet the demand, the annual garment production has doubled since 2000. They are considered 'fast' due to the accelerated new design ideas deployment of more extensive collections every year to keep up with the latest trends tempting the consumers to buy more. The fast fashion industry aims to sell many clothes at low prices to make up for the small margin (Gazzola et al., 2020). Brands like H&M and Zara release 20 collections per year (Todeschini et al., 2017; Remy et al., 2016). Fast fashion's revenue is expected to rise and is projected to be $44 billion in 2028 (Repko, 2020).

Unfortunately, the fashion industry is associated with the wicked problem of sustainability (de Brito et al., 2008). Significant amount of water, energy, and chemicals is used in the different stages of the production chain making the processes environmentally hazardous (Jung & Jin, 2014). Further, by 2050, carbon emissions are estimated to reach 26% of the greenhouse gas emissions worldwide due to the transportation of clothes (McFall-Johnsen, 2019). An industry is considered sustainable when social, economic and environmental goals are met. Hence, fashion industries search for innovative and sustainable solutions (Kozlowski et al., 2018; Gomes, 2013).

Figure 1: Linear Economy (Rathinamoorthy, 2019, p. 13)

One of the drawbacks of the existing fashion industry is the linear (Take-make-waste) system. Linear models are effective only when resources are available in abundance; Natural resources, on the other hand, is depleting (Allwood et al., 2011). Therefore, the clothing is discarded through either landfill or incineration once the customer's needs have been met or the product's service life has expired. There is no attempt to extract or recycle valuable raw material in this system. (Rathinamoorthy, 2019).

A circular fashion system shift is a probable solution to make the fashion industry environmentally and ethically sustainable. CE (Circular Economy) aims at making the business models narrow, slow and close resource flow, requiring innovation at different levels and in multiple stages (Kirchherr, Bour, et al., 2017). Moving towards CE is considered a systemic innovation, and it provides an opportunity to help recycle the clothing in a usable form. This could be through sharing, re-using or re-circulating (Hekkert et al., 2017; Stål and Corvellec, 2018). Systemic innovation is a coordinated innovation system where the development of policies and governance at different levels create an enabling environment for multi-organizational innovations (Midgley & Lindhult, 2017). The incorporation of CE would bring opportunities for the industry to create by improving resource management and eliminating waste through better business models, increasing clothing recycling, and using safe and renewable raw materials (Rathinamoorthy, 2019).
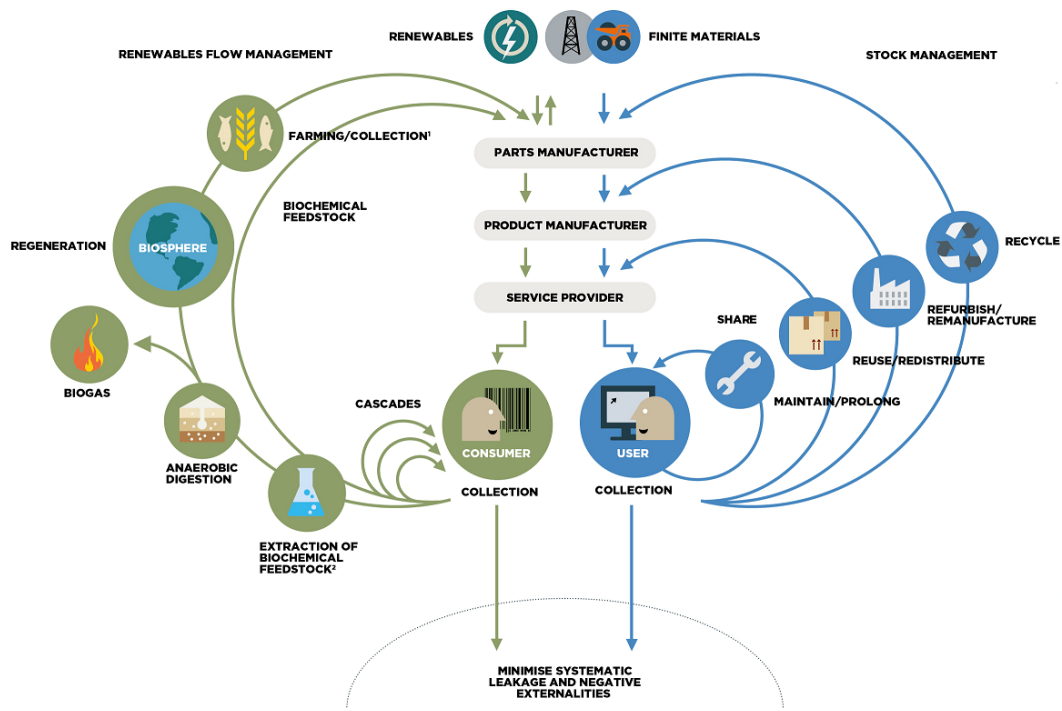
Figure 2: Cradle to Cradle (Ellen Macarthur Foundation, 2019, p.26)

1.2.2. The fashion buiness in the Netherlands as a Mission Oriented Innovation System case study

The Circular Economy Action plan for the sustainable growth of Europe was launched by European Commission (EC) in 2020 by addressing Sustainable Development Goal (SDG) 12. Concerning the fashion sector, the primary mission is responsible consumption and production.

This goal could boost the European Union's circular and sustainable clothing market by strengthening innovativeness and competitiveness in the industries (Hekkert et al., 2020; United Nations, 2020; Bellika, 2020). The goals include using raw materials efficiently, using renewable materials, and developing new production methods to ensure circularity in all sectors (Ministerie van Infrastructuur en Waterstaat, 2019). To achieve circularity in the Dutch textile industry, the country's government has a clear mission to achieve 100% circularity by 2050. *It aims to produce clothing made of 25% of recycled material, constituting 30% of post-consumer recycled material by 2025 **and** reducing waste generation in the industry by 2030* (Hekkert et al., 2020). Recycling materials will save the production cost and lead to environmental benefits by reducing carbon footprint, water, and energy usage and solid waste (Cuc & Vidovic, 2014). MIP is suggested to form potent government tools to solve societal problems. (Mazzucato & Penna, 2016). The Dutch fashion industry's 'sustainability challenge is a 'wicked' problem as it is complex, interconnected, requires urgent attention and systemic and behavioural changes along with technology (Rittel & Webber, 1973; Perez, 2015; Frenken, 2017; Alford & Head, 2017). Recycling initiatives and novel innovations can solve this grand challenge of unsustainability that the textile industry is facing. The engagement and collaboration of the stakeholders in the supply chain and consumers must shift from linear to circular.

Solving this challenge of sustainability requires a complete transition of its socio-technical system (Geels, 2007). Current commercial activities found in its niches will have to make their way into regimes (Schot & Geels, 2008; Smith, VoB & Grin, 2010; Smith, 1776). According to neoclassical economics, this requires, amongst other factors, an increased consumer demand (Smith, 1776).

In the fashion industry, demand for circular fashion clothing is required to achieve the circularity mission in the Dutch textile industry (Hekkert et al., 2020). The consumer role in CE is seen as the supply chain's primary target and the beginning of the reverse supply chain. They contribute to the CE by buying durable eco-friendly clothing, readiness to recycle, and proper waste disposal.

1.3. Problem Statement

Sustainable consumption is an essential aspect of cleaner sustainable production efforts. Sustainable consumption is constituted by buyer behaviour, values, and motivation towards eco-friendly products, resulting in less pollution during pollution (Kirsch, 2000). According to the European Commission report, consumers, to some extent, are willing to address the sustainability issues but are reluctant to adopt sustainable choices (European Commission, 2018). Consumers' increased awareness and consciousness of sustainability had a limited impact in forming purchasing decisions. The market share of sustainable clothing has been significantly low (Vehmas et al., 2018). Study shows that 30 to 50 percent of the consumers intended to buy sustainable products. Still, a discrepancy is observed between what people feel about CE and what they do (De Los Ríos and Charnley, 2017). The market share of the sold sustainable products was only 5 percent (Carrington et al., 2010). The realization of recycled products bringing ethically, and environmentally friendly products showcases another issue: the lack of consumer consumption at the individual/ micro level. Michaud & Llerena (2010) study shows that consumers were resistant to pay a premium for circular clothing, specifically recycled and reused products, however, they were willing to spend on original products (Hunka et al., 2021). There exists a discrepancy between consumers' attitudes towards remanufactured products and the market share about their consumption, which further impedes demand articulation. This discrepancy is the attitude-behaviour gap (Hirsch & Terlau, 2015). This attitude-behaviour gap is not restricted to sustainable clothing but exists in all the behaviours related to sustainability.

The existing literature under-addresses the sustainable consumption aspects (De Los Ríos and Charnley, 2017). Private procurement research is largely absent from the literature (Maitre-Ekern et al., 2019). Researchers Shen et al. (2013) studied the aspect of attitudes of the consumer behaviour towards eco-friendly products. Researchers like Young et al. (2009) examined sustainable behaviour in the UK consumers related to purchasing technologies. CE literature mainly focuses on the production side, exploring business models but does not pay attention to the consumer impact or consumption (Kirchherr et al., 2017). Lack of consumption of circular products and services has been a hindering factor for circular business models. According to Kirchherr's report, the primary obstruction towards the lack of customer understanding and interest in the CE transition in the fashion sector. Rizos et al. (2016) reported that the Small and Medium-sized Enterprises (SMEs) faced low demand on transitioning towards circularity. Although Van Eijk's review (2015) on barriers and factors in the field of the circular economy suggested that consumer acceptance is one of the enabling factors towards circular transition, the insights did not offer influencing consumption factors. Researchers Geissdoerfer et al. (2017) examined the relationship between sustainability and CE but failed to reference consumer aspects. Fashion consumption is inherently socially significant in our consumer society and should be considered vital to the sustainable consumption discussion (Johansson, 2010). Johansson showcases an essential aspect of how imperative consumer attitude is in the debate on sustainability in fashion. Moreover, when search terms consumption' AND 'circular fashion,' 'circular economy' AND 'fashion' AND 'consumer' are used on Scopus, the results do not display literature regarding the factors influencing consumer behaviour.

For a transition to a CE, demand for circular products is required, but to create the societal demand, individual-level factors influencing, i.e., identifying factors affecting individual consumption would be beneficial. Despite demand-side policies, the literature lacks consumer behaviour and usage of CE business models, thereby leading to the absence of demand or demand articulation failure. To solve demand articulation failures in the industry, it is crucial to identify what barriers form its root cause, as this creates important input for innovation policy (Weber & Rohracher, 2012). The root cause of transition demand articulation failures has been very little studied (Boon et al., 2020). It is not known what individual-level factors impede the individual-level consumption that constitutes the macro-level consumer demand. As these micro-consumption factors are not known, policies might not create demand. The research focuses on the fashion industry, which is a demand-driven industry. Currently, the lack of circular fashion is a major hurdle to the implementation of circular business models (Ecopreneur.EU, 2019).

1.4. Research Objective

The research objective is the purpose of carrying out research (Sekaran & Bougie, 2016). This research aims to analyze the micro-level barriers for consumption that individuals encounter, as no previous study in the context of transitions has been done. Furthermore, based on the identified research gap, this study aims to understand better the causes of the demand articulation failure using the case study of the Dutch fashion industry undergoing CE transition. Despite the efforts to produce sustainable clothes, the fashion industries promoting circularity acquires a relatively small market share (Vehmas et al., 2018).

The research will be done to understand consumer behaviour. The research would identify and analyze factors impeding circular clothing consumption among Dutch consumers. Once the micro-factors influencing the consumption behaviour are identified, the factors could explain macro-level demand articulation failures. These factors would be an essential input for the clothing industry's existing sustainable and/or circular policies. This would help policymakers address and analyze these factors and further speed up the CE transition in the fashion industry.

To reach the main goal, the following sub-objectives need to be achieved-

● The researcher would identify the adoption and behavioural models relevant to understanding the consumer consumption behaviour of circular fashion.
● Then, the micro-factors influencing consumer consumption behaviour in adopting sustainable fashion will be derived based on the literature.
● This would be followed by identifying micro-factors impeding consumption in the Dutch fashion industry.
● The final step is analyzing the demand-articulation failure based on the identified impeding consumption factors.

1.5. Research Question

Research questions are formulated to achieve the research objectives and to determine what is needed to achieve the goal (Sekaran & Bougie, 2016). Based on the above-discussed problem, the main research question-

"What individual-level factors are responsible for the demand articulation failure as they impede the individual-level consumption of circular fashion in the Dutch fashion industry?"

The researcher would understand consumer behaviour by identifying influencing factors that motivate the consumer to adopt or reject a product. The first factors that influence consumers would be identified to understand consumer behaviour and analyze factors that impede circular fashion consumption. This research would explore the existing relevant literature in MIS, sustainability, circular economy and consumer behaviour.

To answer the main research topic, supporting sub-research questions have been established.

1.5.1. Sub-Questions

SQ1. Which existing behavioural models are relevant for understanding the consumer consumption behaviour of circular fashion?

It is essential to understand the consumption behaviour models in the existing literature so that factors influencing consumption could be identified and suitable behaviour models for circular fashion consumption can be adopted. This will aid in the factors influencing consumption, i.e., leading to consumer adoption and rejection.

SQ2. What individual-level factors can influence the consumption behaviour of circular fashion?

To understand the factors that obstruct circular fashion consumption, it is necessary to first identify the factors that motivates the consumers to adopt or reject circular fashion consumption. For this, the researcher made use of the existing literature related to circularity, circular fashion, sustainable consumption and sustainable fashion to derive a list of influencing factors.

SQ3. What are the individual-level factors that act as barriers towards the consumption of circular fashion in the Netherlands?

This is a final step of the analysis where additional individual-level factors will be identified that might act as barriers based on the conducted interviews. Again, the respondents would involve different target groups: consumers and non-consumers of sustainable fashion, researchers, CE entrepreneurs, sustainability consultants, fashion designers, and CE strategists. Once the impeding factors are identified, the research will provide implications that policymakers can use for demand creation.

2. Literature Survey

This chapter draws on current literature to define terms relevant to the study. The following section describes the search description to identify the relevant literature.

2.1 Search Description

The starting point for my literature survey was reading about Mission-Oriented Innovation Policies. It is an emerging innovation policy concept that addresses societal challenges and economic growth through innovation. Reading the documents and papers related to this concept made me realise that the policies did not address demand articulation failure.

The European Commission commonly implements these policies, and hence I decided to focus on a European country, the Netherlands, in my case. I intended to understand further the factors that impede consumption and cause demand articulation failure. This consumption occurs at different levels of society. I had come across the concept of transition theory in the course "Sustainable Innovations and Transitions' I followed. These concepts were then linked with consumption and demand articulation using the available literature and logical reasoning.

The research aims to find factors that impede consumption and address these using policies to prevent demand articulation failure. For this, I decided to dive into the case of the fashion industry in the Netherlands. This industry is chosen due to the existing, sustainable issues in the fashion industry. Almost all the papers directed me towards fast fashion, environmental and ethical concerns. The first keywords I used to get the relevant documents were 'fast fashion', fast fashion AND clothing, fast fashion, AND textile. These produced 125 papers on Scopus. I filtered down the documents related to fast fashion and tried to concentrate on the environmental sustainability aspect. I also used Google Scholar and TU Delft Repository to go through master projects like my topic and, for a head-start, went through the references of the papers I found relevant.

While looking through the databases, I came across circular the concept of circular economy in the fashion industry. This aspect was included as an emerging concept and seemed like a long-term solution for the sustainability concerns. I further tried to drive my focus in this area by searching for papers using search strings, "circular economy AND "fashion" between 2015-19. I found a total of 190 articles, out of which 72 were removed due to the repeatability of the same documents. In addition, 23 articles were discarded as they focused on CE and the fashion or textile industry. The next step in selecting the required papers was screening based on titles and abstracts.

Although, environmental pollution caused by the fashion industry is known. The consumption of sustainable fashion is not typical. Hence, I started looking for papers related to sustainable consumption, sustainable fashion, CE in the industry and circular fashion with search terms, 'consumption' AND 'sustainability', 'consumption' AND 'sustainable' AND 'fashion', 'consumption' AND 'circular fashion', 'circular economy AND 'clothing' AND 'consumer' were used on Scopus. The researcher followed this procedure to find the factors influencing consumption.

All these papers were added to the library by me on Zotero. While I collected around 35 articles for my preliminary research, I began writing the proposal in parallel and helped me maintain a flow. The below table shows the inclusion and exclusion criteria for the review. As sustainability is a broad subject with ethical and environmental aspects, I decided to narrow my scope by excluding the ethical

aspects. Moreover, I decided to study the factors that influence circular fashion due to the lack of research on it and the availability of several well-built and validated theories.

The first phase of innovation policy aimed to address market failure by improving Research and Development (R&D) of private firms since several decades. The second phase of innovation policies, on the other hand, focused on reducing losses and strengthening national innovation programs during the 1990s. Both methods emphasized the importance of innovation in achieving economic development (Schot & Steinmueller, 2018). The era of the third generation of innovative policies is 'transformative'. It acknowledges the importance of addressing societal problems and the difficulty in steering innovation in an innovation system influenced by path dependencies (Schot & Steinmueller, 2018). This legitimizes government intervention in controlling the innovation system direction for tackling these problems (Mazzucato, 2018).

The European Commission (EC) is one of the most crucial stakeholders who implemented this shift. The European Program introduced Horizon 2020 as the Research and Innovation. The Horizon 2020 focuses on tackling societal challenges and achieving economic growth (Hekkert et al., 2020). The 'mission' concept is a powerful tool to attain economic growth by utilizing investment, R&I to resolve critical problems or challenges in the context of significant societal and environmental challenges. This is made possible with the contribution of of different actors (public, private, third sector) across various sectors (Mazzucato, 2018; Mazzucato, 2016).

The Mission-oriented Innovation Policies identify and articulate the concrete problems that require a system-wide transformation in the field of production, distribution, and consumption patterns. This process recognizes that economic growth has both rate and direction; innovation involves risk-taking by all stakeholders, private and public, requiring consensus building in society. The state incorporating these policies has a responsibility to fix the market and co-create and shape them (Mazzucato, 2018).

The societal mission is defined as "an urgent strategic goal that requires transformative systems change directed towards overcoming a wicked societal problem" (Hekkert et al., 2020, p.76). It drives EC to formulate the missions as clear targets. The member states have been influenced to reformulate their innovation policies due to the modernization of innovation policy. It is the responsibility of the ministry proposing the mission to complete the mission on time and thereby, by adopting MIP, policymakers become highly motivated to incorporate changes to make the system better.

A Mission-Oriented Innovation System (MIS) is defined as "the network of agents and set of institutions that contribute to the development and diffusion of innovative solutions to define, pursue and complete a societal mission" (Hekkert et al., 2020, p. 77). Since MIS is based on problems rather than solutions, actors from different domains, including public as well as private will contribute to a shared goal depending on the formulation of the mission and the prioritization of the issue (Hekkert et al., 2020).

2.3. Circular Economy

The concept of Circular Economy (CE) is depicted as a combination of reducing, reuse and recycling activities and attracts policymakers and entrepreneurs of both developed and emerging economies alike. Stahel and Reday (1976) founded the circular economy concept in 1976 based on the life extension of products (Stahel, 1976). Although several authors have proposed their idea of the concept, McDonough and Braungart further developed the idea into 'Cradle to Cradle,' which refers to closing the loop in two. These loops are biological (biodegradable) or technological (non-biodegradable) (Peterson, 2004). However, the concept is built around a mixed collection of notions.

from different research fields and the scientific content remains unexplored. The widely accepted definition of CE is,

<u>Working Definition</u>: *"Circular economy is an industrial system that is restorative or regenerative by intention and design. It replaces the 'end-of-life' concept with restoration, shifts towards the use of renewable energy, eliminates the use of toxic chemicals, which impair reuse, and aims for the elimination of waste through the superior design of materials, products, systems, and, within this, business models"* (Ellen Macarthur Foundation, 2013, p.8).

The circular economy concept is depicted in the figure, where the central axis represents the linear design consisting of consumption and waste production. These processes have a single flow (Cooper, 1999; Murray et al., 2015). The CE aims to remove the waste products from the processes in the linear system (Guldmann, 2016). The circularity is incorporated using cyclic material flows, renewable energy sources and recycling energies, as shown in the figure. (Korhonen et al., 2018)

The circular economy, in contrast to the linear economy, does not let the components leak into the landfill or incinerate it. It brings back the materials into the economy to create a profitable arbitrage opportunity by preserving integrated labor, material, and capital costs. The three CE principles formulated by Ellen MacArthur Foundation include-

- First, balancing renewable flows and controlling finite stocks to preserve natural resouces by replacing replenishable resources with renewable energy.
- Second, optimizing resource yields. This could be done by avoiding linear processes and
- Third, eliminating negative externalities related to resource use such as environmental pollution and adverse health effects (Korhonen et al., 2018).
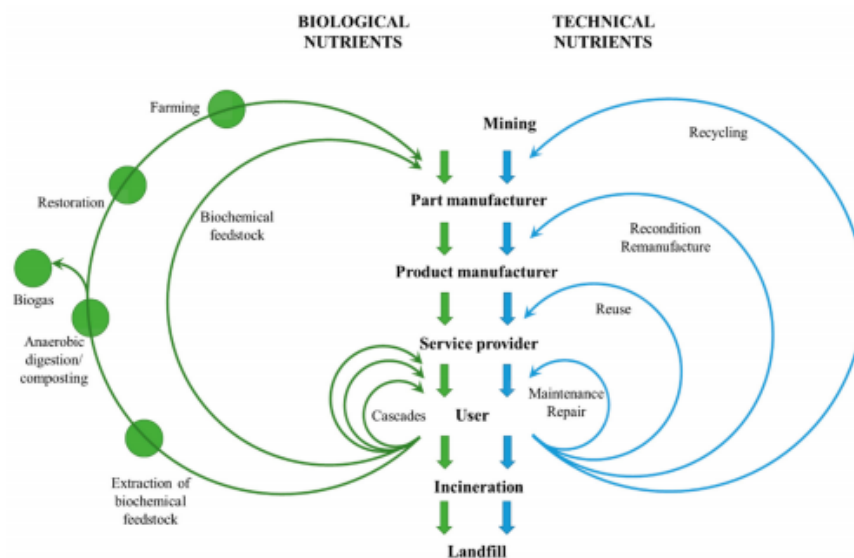
Figure 3: Circular economy concept (based on Bianchini et al, 2019, p.6)

Although the circular economy concept was outlined years ago, it gained momentum in academia, research, and politics recently. The scientific research content of CE remains unexplored mainly (Korhonen et al., 2018).

2.4 Circular fashion consumption

2.4.1. Renting

Renting is a type of collaborative consumption (CC) that prioritizes product utilization over ownership (Lang & Armstrong, 2018). Collaborative consumption is "people coordinating the acquisition and distribution of a resource for a fee or other compensation" (Belk, 2014, p.1597). Through renting, a party offers the product to another party for a fixed time at a specific price without changing ownership. Thus, renting allows maximizing the usage of clothing and reducing landfill waste (Lang & Armstrong, 2018). In addition, these rental models are helpful when the need of the customer is for a short time, for example, maternity wear, fashion preferences, luxury wear.

According to the Textiles tracker survey conducted in the United Kingdom, rental models are suggested to have incredible scope. This study showed that 68% disposed of clothes either due to fitting issues or no longer liking the clothes. Moreover, the consumers only used some clothes during special occasions (Rathinamoorthy, 2019). The rental subscription model allows the customers to access various clothes by paying a pre-defined monthly fee to the retailer. This model is beneficial for customers who follow fashion trends (Rathinamoorthy, 2019). Brands such as Vigga and YCloset already incorporate this business model. In 2017, the Chinese brand YCloset earned a profit of 20 million USD, proving the potentiality of this business model (Rathinamoorthy, 2019). Also, renting allows the consumers to share the cost of products and access luxury products that are not affordable.

2.4.2. Second-hand clothing

Second-hand clothing is the re-use of clothes that once belonged to someone else. It increases the product life of the clothing (Hekkert et al., 2020). This is a means to extend the lifetime of clothing through re-use. The possibility of selling the used clothing increases with the increase in durability, the latest fashion features of the dress, and hygiene (Niinimäki, 2010). One of the first global brands offering customer access to used clothing is the international VF group, Tommy Hilfiger, Vivo barefoot.

 The number of online marketplaces where consumers can serve as both sellers and buyers has been steadily increasing. Vinted and United Wardrobe are some of the Dutch organizations that allow individuals to use its online platform to sell clothing that they do not use anymore with an initiative of making people believe that good clothes should live long (Hekkert et al., 2020).

 Thrift and vintage stores in the Netherlands allow in-person second-hand clothing shopping (Recycle with us, 2021). The information on these second-hand stores is provided on the municipality and store websites (Omrin, 2021). At present, second-hand clothes fulfil an essential societal function by avoiding pollution and are sold at a relatively low margin. Although many commercial parties are active in this field, the market is small (Hekkert et al., 2020). Therefore, understanding consumer behaviour is crucial as it could re-use a growth market (Hekkert et al., 2020).

2.4. 3. Sustainable fashion

Figure 4: Sustainability concept (Calderon, 2020)

Sustainability emerged in the 1960s forming a part of the slow fashion movement when consumers acknowledged the harmful impact of clothing manufacturing on the environment (Jung & Jin, 2014). The co-existence of economic growth, social development, and environmental protection without inflicting negative impacts on each other is termed sustainability (Calderon, 2020). This includes sustainability in the entire supply chain. This starts with sourcing raw materials and ends with consumption and disposal, ensuring good working conditions (Henniger et al., 2016; Hansen et al., 2012).

The concept emphasizes the collaboration between the governments and organizations by implementing strategies (Drexhage et al., 2010). This collaboration was initiated due to the Paris Agreement, where governments worldwide took the initiative to combat climate change and pollution. The facet of sustainability to focus on varies from one brand to another; for example, one brand wishes to minimize the products' environmental footprint while the other puts more effort into ensuring fair trade and good working conditions for its workers (Climate focus, 2015). Shen (2014) categorized ethical clothing production into Environmentally Responsible Business (ERB) and Socially Responsible Business (SRB) categories. According to Zoomers and van Westen (2011), when initiated in Western countries, these production methods influence the environment and climate and people's livelihoods in developing nations. Here, production occurs as the local development opportunities in the developing countries depend on the developed nations based on the capital, goods, information, and workforce flow.

Sustainable consumption goes beyond functional needs and ensures that the needs of future generations are not compromised (Hansen et al., 2012). However, there are no agreed-upon criteria for environmentally safe products (Kumar et al., 2021). Despite the limited literature available in clothing consumption, it is evident that consumers worldwide have more knowledge about the environmental degradation caused by the industry (Shen, 2014). On the one hand, young consumers consider environmental issues before purchasing. In contrast, on the other, most consumers are hesitant to go eco-friendly due to the high price of sustainable clothing (Govind et al., 2017). The product's price was the most important factor affecting consumer behaviour (Devinney et al., 2010).

The above explanation justifies the enormous success and popularity of fast fashion due to its low-priced products. Hence, the ethical market remains a niche with its high brand image and low usage (Beard, 2008).

Hence, sustainable clothing manufacturers are trying to issue clear messages regarding the sustainable materials used in their products to make them aware of the genuine benefits of sustainability in the sector (Bertram & Chi, 2018). However, researchers have identified that the despite attitudes towards ethical consumption, a consumer has virtually non-existent ethical behaviour leading to an attitude-behaviour gap (Terlau & Hirsch, 2015). Nevertheless, research lacks a holistic framework to analyze purchase intention and behaviour under the sustainable fashion domain by compiling preceding findings. According to Niinimäki (2010), consumers would be inclined towards sustainable clothing only if the clothes are available at an affordable price, without losing quality or discomfort in availability. Therefore, further examination is required to understand consumer roles and behaviour concerning eco-friendly shopping.

2.4.4. Recycling

According to the research by Chen & Bruns (2006), textile waste is of two types, pre-consumer and post-consumer. Recycling reduces the harmful environmental impact recovery of materials other than energy (Wagner & Heinzel, 2020). The by-product materials from textile production lead to pre-consumer waste. 73% of this waste is diverted from landfills and recycled.

The consumption of fast fashion, mainly made from synthetic fibres such as acrylic, polyester, and polyamide, adds to toxicity by plastics in microplastics. The production and disposal of these materials cause significant carbon emissions and resource depletion of fossil fuels. These synthetic materials also comprise unsafe chemicals, requiring the need to develop appropriate recycling methodologies (Wagner & Heinzel, 2020). The clothing discarded by the consumers after its usage is post-consumer waste. This waste consists of textiles and worn-out fabrics. Less than one per cent of post-consumer clothing is recycled after its use (Ellen MacArthur Foundation, 2017).

Recycling of the post-consumer textile involves using fibres from post-consumer textiles to produce new clothing. The goal of CE in the fashion sector is to reduce textile waste that goes into landfills. Recycling the waste can prevent the diminution of natural resources and avoid the high cost of waste disposal. Moreover, clothing production through recycling would require fewer resources and energy (Cuc & Vidovic, 2011). The introduction of CE in the fashion industry ensures the incorporation of technologies for using sustainable and zero-waste designs, product-life extension, resource recovery. Multiple organisations like Weekday are part of the H&M group, allowing the consumers to obtain recycled clothing of their own old and worn-out textiles. It also provides consumers with a 10% voucher for their next purchase in return for their old textiles (Recycle with us, 2021). Moreover, this organization produces swimwear from recycled PET bottles, production waste and leftover fabrics to create 100% recycled clothing (Hekkert et al., 2020).

2.5. 9R framework of circularity

Ideally, circularity is achieved when all the raw materials in the production chain can be reused while preserving their original quality. Achieving this is very difficult, and full circularity is the highest level or objective within a Circular Economy. There is a hierarchy of circularity solutions with varying levels to reduce natural resources and commodities consumption while minimizing waste production. Therefore, they can be prioritized based on their levels of circularity (Potting et al., 2017).

The 9R framework ranks the strategies in order of circularity priority with the objective to minimize natural resource consumption and reduce waste production. The circularity strategies in order of importance have been depicted in Figure 14. The level of circularity decreases from top to down, decreasing the environmental benefits (Potting et al., 2017). The strategies are ordered from R0 to R9 in decreasing importance. These include Refuse, Rethink, Reduce, Reuse, Repair, Refurbish, Remanufacture, Repurpose, Recycle, Recover in the order of priority as shown in the figure.

Maximum circularity is achieved by Smarter product use that includes R0, R1 and R2. For example, product sharing is considered better than an attempt to extend the lifetime of a product because a product serving a high number of users has high circularity (Potter et al., 2017). This is followed by lifetime extension, which includes R3, R4, R5, R6, R7 strategies and the final stage is the helpful application of materials which includes R8 and R9 strategies. Energy recovered after incineration is considered the lowest priority in CE as the materials are no longer available for usage (Potter et al., 2017).

Circular Economy ↑ Linear Economy	Smart product use and manufacture	R0 Refuse
		R1 Rethink
		R2 Reduce
	Extend lifespan of product and its parts	R3 Reuse
		R4 Repair
		R5 Refurbish
		R6 Remanufacture
		R7 Repurpose
	Useful applications of materials	R8 Recycle
		R9 Recover
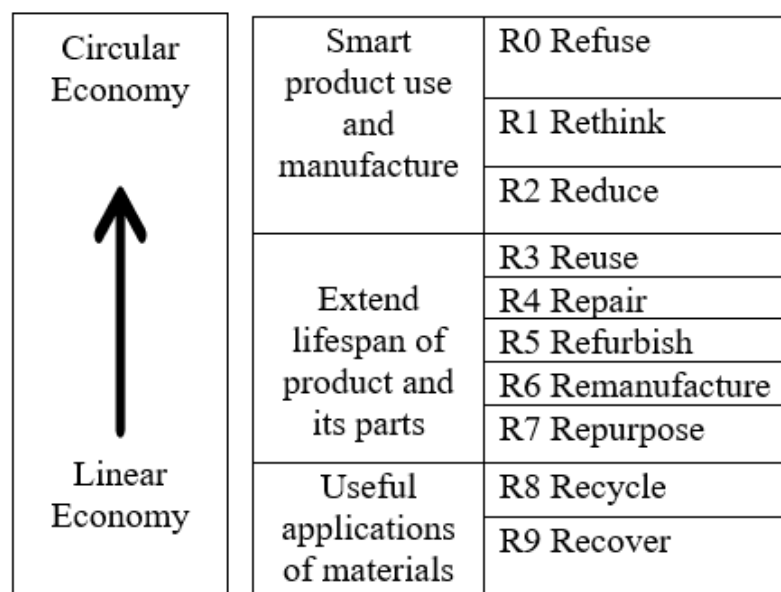
Figure 5: 9R framework of circularity (Adapted from Potting et al., 2017, pg.5)

Ro Refuse: This strategy involves preventing environmental damage by refusing to purchase clothing from brands and companies that produce fast fashion. For example, one could refuse to buy clothing that they do not plan on wearing at least 30 times.

R1 Rethink: The Rethink strategy investigates the presumptions behind the current business and economic logic (Potting et al., 2017). By maintaining the stock of resources, eliminating waste, and enhancing resource efficiency, a consumer could shift the consumption paradigm from linear to circular. The products could be used more intensively by sharing, such as swapping clothes or donating them to the needy.

R2 Reduce: The reduce strategy increases utilization efficiency by consuming products that use fewer natural resources and materials. In the consumption aspect, one could consume less through efficient use. For example, consuming sustainable fashion in case of a need for clothing could be considered a suitable alternative (Niinimäki, 2010). Sustainable brands prioritize quality, utilizing long-lasting materials that are also environmentally friendly. Therefore, one can limit waste and clothing by picking sustainable companies that deliver quality (Niinimäki, 2010).

R3 Reuse: The reuse strategy encourages consumers to reuse a rejected product that is still in working condition and serves its intended purpose by another consumer. Reuse is a practice that enables the customers to use the product for its conventional use or to fulfil another function. For example, an empty plastic bottle could be used to fulfil another function of growing plants.

R4 Repair: The repair strategy is used to restore a product's original function by repairing and maintaining damaged items so that they can be used for their intended purpose. This could also be done by having a contractual agreement for services with the suppliers. For example, consumers could get their torn clothes repaired by a tailor.

R5 Refurbish: Refurbish strategy involves bringing an old product up to date by restoring it. This also brings an aesthetic element to the product. In addition, this process is less time and energy consuming as compared to remanufacturing. For example, a consumer could refurbish their room by making it more attractive through decoration or better equip by updating its functions.

R6 Remanufacture: Using the remanufacturing strategy, components of the discarded products could be used to create a new product that performs the same function. Remanufacturing is the process of dismantling, repairing, recreating, and sanitizing components for resale as a 'new product'. By consuming remanufactured items, consumers contribute to the circular economy by amplifying the lifetime of those elements and making value. In addition, the final product comes with some guarantees and warranties as a new product. For example, a consumer with an emotional attachment to damaged clothing could get it remanufactured into a new piece of clothing (Niinimäki, 2010).

R7 Repurpose: The repurpose strategy allows parts of a discarded product to be utilized in a new product with a different function. Wood waste, for example, can be turned into art or a toy.

R8 Recycle: Materials are processed to achieve the same (high grade) or lower (low grade) (low grade). If products are recycled, the amount of waste generated would be greatly minimized. Some companies, such as Mud Jeans, make jeans out of recycled materials. However, depending on the quality of the raw materials used, the recycled product's quality may vary.

R9 Recover: The recovery strategy is the last stage of the system within production and consumption. This stage is a means to restore energy or materials. Recovering energy and reusing it in new products can could help close the circularity gap.

By adopting these circularity strategies, consumers could contribute towards circularity in the fashion industry. The researcher will segregate the different consumption methods acquired through the existing literature and interviews based on the 9R strategies in the analysis section. Further, the factors obstructing the consumption of these different circular methods will be analyzed.

3. Methodology

3.1. Research Approach

This research is an exploratory study as the current research results are uncertain, and additional information is required to develop the theory (Sekaran & Bougie, 2016). The research used primary and secondary sources of data for data collection. The research questions and theory have been formulated before the data collection phase. The design of the study is summarized in Figure 6.
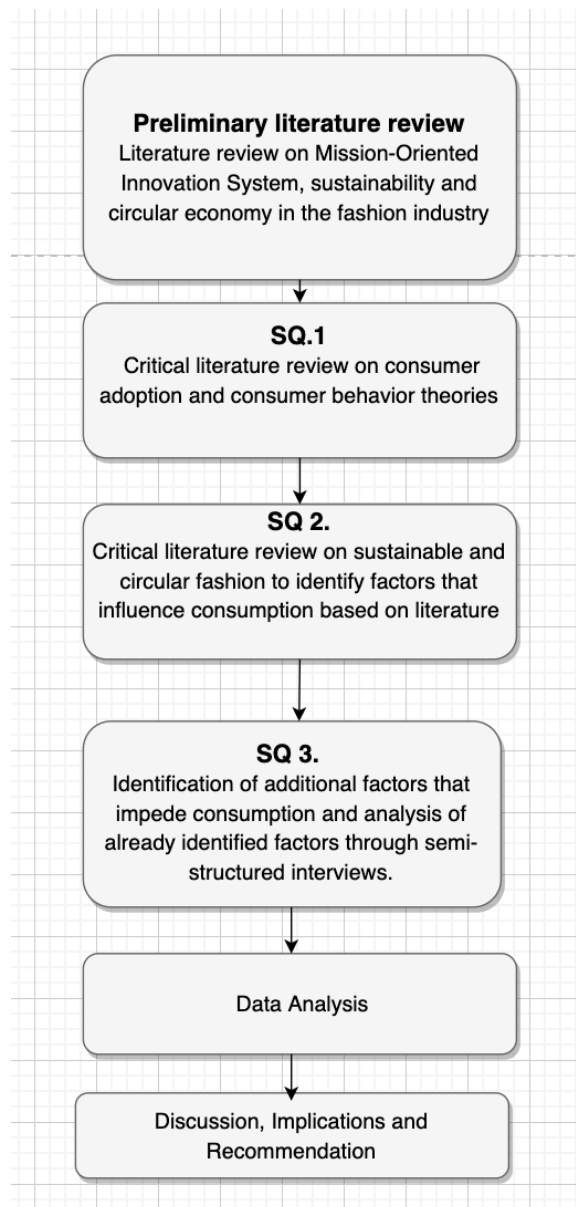

Figure 6: Research Design

Yin (2017) suggests that a case study is an ideal research method if a "what" or a "how" question is dealt with by the main research question. The case study is the study of "a contemporary phenomenon within its real-world context" (Yin, 2017, p.126).

This study answers the research question by considering the case study of the fashion industry in the Netherlands. The research analyzed the real-life context of the fashion industry and identified the micro-factors impeding consumption, further leading to demand-articulation failure. This information has been used to provide implications to policymakers. The case study approach aims to expand and generalize theories without extrapolating probabilities (Yin, 2017). The case study uses either a qualitative or quantitative approach and collects information from a specific unit: an individual, team, organization, or nation (Sekaran & Bougie, 2016).

This research used a qualitative approach. This approach is used to gain a rich understanding of problems that are new and complex. It is a better method when the academic data relevant to the problem emerges and lacks grounded theory (Yin, 2017). For this study, this approach is considered suitable for data collection due to limited empirical data available.

The research starts with a critical literature review on theories that explain consumer adoption, behaviour, and decision-making process as described in *Chapter 4* to answer the first sub-research question. Then, the researcher derives factors that could influence circular fashion consumption from the existing literature in *Chapter 5* to answer the second sub- research question. The research then relies on primary data collection by conducting semi-structured interviews to answer the third sub-research question in *Section 8.2*. The choice of data collection depends on the research objective, research question, type of data required, timespan of study and resources available (Sekaran & Bougie, 2016). The interviews have been conducted with different subjects to understand the current situation better. The discussion involves people from different target groups. This method helped the researcher obtain results by understanding different perspectives as interviews from different target groups are conducted.

To answer the main research question,

"What individual-level factors are responsible for the demand articulation failure as they impede the individual-level consumption of circular fashion in the Dutch fashion industry?"

supporting sub-research questions have been developed. The researcher tries to understand consumer behaviour by analyzing factors that impede circular fashion consumption. The identified factors could be used to provide implications to the policymakers so that circular fashion is promoted.

3.1.1. Sub-question 1

SQ1. Which existing behavioural models are relevant for understanding the consumer consumption behaviour of circular fashion?

This sub-question will be answered in Chapter 4. The researcher conducts a critical literature review to answer this sub-question. The researcher must generate viable alternatives for effective decision-making. This can be done through the second review of literature or critical literature review (Sekaran & Bougie, 2016). This process ensures that the research builds on the existing knowledge and obtains valuable insights for the analysis. The benefit of the critical literature review is that it would allow the researcher to introduce relevant terminologies and define key terms in the study. In addition, the concepts from the existing literature will help the researcher provide a structure to the thesis by developing a theoretical background (Sekaran & Bougie, 2016).

A careful review of relevant books and journal articles ensures a thorough understanding of a critical literature review (Sekaran & Bougie, 2016). The critical literature review builds on the existing knowledge, derives valuable insights into the topic and helps to obtain important variables. Therefore, a critical literature review is required to gather information about existing innovation

adoption, technology acceptance, consumer behaviour, and theories relevant to this research. The study will use Scopus, google scholar, PhD theses and TU Delft library.

The researcher uses the search terms' 'consumer' AND 'adoption', 'technology' AND 'adoption,' 'technology' AND 'acceptance'. The results produced many papers without a specific focus. As the objective is to look for relevant theories that could be used to understand consumer behaviour, the researcher decided to modify the search methodology and review papers on adoption and technology-acceptance theories to understand consumer behaviour.

The researcher uses the keywords 'theories' AND 'consumer' AND 'adoption.' The subject area is limited to Business Management, Social Sciences, and Economics. Then, the keywords' consumer adoption', "technology adoption,' 'consumption behaviour,' 'technology acceptance,' 'review' is selected from the keyword list. The keyword 'review' is used because the objective is to find papers that mention extensively used theories that have been used in the past research that could be used for this study. This produces 45 document results. Then, the researcher scanned the resultant papers and made a list of theories used.

This section will use the most extensively used theories and models relevant to innovation adoption and consumer behaviour. This sub-research question will help the researcher derive generalizable factors and are essential for consuming any product or service. However, there exist pitfalls of building on the work of others. This can include misinterpretation of the work, the author's viewpoints, ideas, findings, and plagiarism (Sekaran & Bougie, 2016).

3.1.2. Sub-question 2

SQ2. What micro-factors can influence the consumption behaviour of circular fashion?

This sub-question will be answered in chapter 5. The process of answering this sub-question allows the researcher to understand the factors that affect circular fashion consumption. This is done by exploring the existing literature. The variables are identified using a case-study design (Yin, 2017). This research has considered the Dutch fashion industry as its single case study with different micro-factors that influence consumption as the multiple units of analysis.

On Scopus, search terms, 'sustainable' AND 'fashion' AND 'consumer' AND 'behaviour', this search is limited to subject area of business, social science, and environmental sciences due to extensive number of papers that appeared, 'circular' AND 'fashion' AND 'consumer', 'sustainable fashion' AND 'consumer' AND 'adoption' and 'sustainable fashion' AND 'consumer' AND 'barrier' are used. These produced 161, 55, 18 and 21 documents, respectively. The list is then sorted based on the citations for every search term. Several papers emerged in this process related to sustainable fashion, consumer attitude, belief, perception. Then the researcher reads the title and abstracts of the papers and excludes the repetitive and irrelevant papers and then goes ahead scanning the papers.

Finally, a list of factors is created after scanning through the papers. To get a unique list of factors, before listing down the final list of factors mentioned in the papers, the factors with closely related or overlapping meanings were dropped. All the papers were scanned to ensure all the factors would be considered. The publications not explicitly mentioning the factors were excluded.

This process helped the researcher derive a list of factors that influence circular fashion consumption for further analysis. These factors will develop the theoretical framework/ conceptual model where the micro-factors would be a function of consumption.

3.1.3. Sub-question 3

SQ3. What are the micro-factors that might act as barriers towards the consumption of circular fashion in the Netherlands?

This sub-question will be answered in Section 8.2. To answer this question, interviews are conducted. The primary purpose of this step is to first analyze the factors obtained in sub-question 2 from the literature, and identify additional contemporary factors that could impede consumption by using interviews as the primary source of data collection. Hence, conducting interviews would add rigor to the study by exploring more factors. All the factors thus derived, through answering sub-question two and sub-question 3, will aid to the proposition development.

Unit of analysis is "the level of aggregation of the data collected during the subsequent data analysis" (Sekaran & Bougie, 2016, p.102). For this research, the unit of analysis is the 'individual'. The researcher gathers the data regarding the factors that impede consumption from the respondents and considers it the data source individually.

Observation and conducting surveys are considered the best methods for understanding consumer behavior (Sekaran & Bougie, 2016). However, for this research, surveys are not a feasible method to understand the circular-fashion consumption behaviour in the Netherlands due to various factors. Finding enough participants for the survey during the pandemic would have been problematic, and the time constraint of the thesis would have made it even more difficult. Hence, this part of the research is focused on interviews. The interviews would allow the researcher to conduct in-depth analysis and obtain rich information.

Thirteen semi-structured interviews are conducted through video-call to identify new factors and analyze factors derived through the literature. This was because respondents' enthusiasm about the topic was less. Out of 237 people contacted on LinkedIn, 43 accepted the researcher's request, 27 replied to the messages, and 18 were enthusiastic about the interview conversation. However, 13 interviews were conducted due to limited respondent availability. The interviews are conducted with people from different target groups: non-consumers, sustainable fashion consumers, CE strategists, fashion designers, fashion entrepreneurs implementing circularity, researchers, sustainability consultants. This method helped the researcher obtain results by understanding different perspectives.

An interview can be defined as "a guided, purposeful conversation between two or more people" (Sekaran & Bougie, 2016, p.113). A semi-structured interview allowed the researcher to have open-ended and structured questions, enabling exploratory research (Sekaran & Bougie, 2016). The interview starts with gathering broad ideas, forming impressions through open-ended questions and then the questions are progressively more focused. This funnelling technique is that the researcher can ensure that the respondents understand the questions and clarifications are provided if required (Sekaran & Bougie, 2016).

Quota sampling is used for the selection of interviewees. This type of sampling falls under purposive sampling, which focuses on obtaining information from specific target groups. The researcher focuses on these target groups as the researcher wants to understand different perspectives. (Sekaran & Bougie, 2016). Although quota sampling is non-generalizable, it ensures that even the minority groups are represented in the study, eventually providing a holistic view.

As mentioned, the interviews involve people from different departments of the fashion industry along with consumers and non-consumers of sustainable fashion to understand the opinions of both groups as well. According to the researcher, people from the fashion industry are considered experts as they

could be considered as essential leads in providing additional information and analyzing the factors identified through the literature.

The experts have been grouped into five different fashion industry departments, namely, researchers, entrepreneurs, sustainability consultants, fashion designers, and CE strategists. The factors that impede consumption would be inductively derived through their opinion, and then the experts are asked to analyze the factors that were derived in sub-question 2.

3.2 Interview Protocol

The interview protocol is developed in four phases using the framework created by Castillo-Montoya (2016): (1) The researcher ensures the alignment of the interview questions with sub-question three. The final list of questions is prepared before the interview. (2) The researcher constructs the interviews questions to ensure that the questions are well understood. (3) The researcher seeks feedback from the thesis supervisors on the interview protocols in the third step (4) Interview protocols are piloted through the first few interviews and the feedback from the respondents would be used for improvement.

The interview process would be conducted as follows:

1. The respondents belonging to the fashion industry are requested to participate in the study through a formal message explaining the research on LinkedIn. These respondents are tailored based on their function and background in the industry. The consumers and non-consumers belong to the researcher's contacts due to accessibility and convenience.
2. An interview schedule is set up if the respondent agrees to participate. A calendar invitation is sent to the respondents on Zoom along with the consent form signed and sent by the interviewee after the interview. Apart from the researcher, only the supervisors will have access to the respondents' full names and the interview videos.
3. On the interview day, the respondent is asked for permission to record the interview. Then, the researcher explains the study background and the interview's goal to provide context and the purpose of the interview data collection. Notes are made whenever the respondents provide crucial information. Follow-up questions were developed immediately if the researcher feels more information regarding it would be significant.

After the interview, summary of the interview is made and sent to the respective respondents for their approval and permission to use their statements in the thesis.

3.3 Data analysis

The data obtained through the thirteen interviews has been transcribed using the software Otter.ai. This software automatically makes the transcript of the uploaded audio. However, it results in inaccuracies. The researcher will fix the software mistakes by reviewing the transcripts while listening to the recordings. The full version of the interview has been listed in Appendix D.

After the transcription, the researcher will summarise the interviews having the key takeaways of the interview. This will be further sent to the respondents for approval to ensure there is no manipulation.

In the analysis, each respondent is given a code. The consumers are represented as C1, C2, Non-consumers as NC1, NC2, CE Strategists as CES1, CES2, Sustainability Consultants as SC1, SC2, Circular fashion Entrepreneurs as CFE1, CFE2, Fashion Designers as FD1, FD2 and Researcher as R.

The qualitative data collected will be quantified using content analysis. This method is useful in determining the presence of themes and concepts (Berhard & Ryan, 2010). In this research, this method has been used to analyze the presence and relationships of factors influencing circular fashion consumption. The analysis consists of a pre-defined list of influencing factors has been identified through the literature. The analysis starts with identifying multiple methods through which a consumer could contribute towards circularity in the fashion industry. Then, based on the information obtained through the interviewees, consumption methods are grouped into the R-strategies. This is followed by identifying the factors relevant to the consumption methods. Finally, to obtain the list of potential barriers, the data is quantified by calculating the frequency of the direction of influence of the identified factors based on the opinions of the interviewees. This would provide a list of potential barriers to provide implications to the policymakers. The analysis will be elaborated in detail in Chapter 7.

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4. Theories

This chapter will help answer the Research Question 1. Various theories related to consumer adoption, buying process and behaviour will be discussed, in this section. The section will deal with theories that could be relevant to consumption behaviour in the circular fashion industry.

There are various models that could explain the adoption process and behaviour of consumers. Only the extensively used models relevant to this research would be used for the conceptual model development. Also, there have been modifications made in several theories and models by researchers over the years. Therefore, for this research, only original models will be used.

Author	Year	Model	Factors influencing adoption
Everett Rogers	1960	Diffusion of Innovation	Innovation system, communication channels, time, social system
A. Fishbein and Ajzen	1975	Theory of Reasoned Action	Behavioral Intention, Attitude, Subjective Norm
Ajzen	1985	Theory of Planned Behavior	Behavioral Intention, Attitude, Subjective Norm, perceived behavioral control
Bandura	1986	Social Cognitive Theory	Social interaction, experience, outside media influence, Affect, Anxiety
Davis	1986	Technology Acceptance Model	Perceived ease of use, perceived usefulness, system characteristics, potential system usage
Thompson et al.	1991	Model of PC utilization	Job-fit, complexity, long-term consequences, affect towards use, social factors, facilitating, conditions.
Davis et al.	1992	Motivation Model	Extrinsic motivation (such as perceived usefulness, perceived ease of use, and subjective norm) and intrinsic motivation (such as perceptions of pleasure and satisfaction)
Venkatesh & Davis	2000	Extended Technology Acceptance Model 2	Social influence processes and cognitive instrumental processes (job relevance, output quality, result demonstrability and perceived ease of use)
Venkatesh et al.	2003	Unified Theory of Acceptance and Use of Technology (UTAUT)	Performance expectancy, effort expectancy, social influence and facilitating conditions
Sykes et al.	2009	Model of Acceptance with Peer Support (MAPS)	Behavioral intention, system use, facilitating conditions, network density, network centrality, valued network centrality, valued, network density.

Table 1: Consumer adoption and behaviour theories

The above table has a list of theories and models developed to understand consumer adoption and behaviour.

4.1. Diffusion of innovation model by Rogers

According to Rogers, "An innovation is an idea, practice, or project that is perceived as new by an individual or other unit of adoption" (Rogers, 2003, p.12). Innovation adoption decision is "full use of an innovation as the best course of action available", and rejection decision is "not to adopt an innovation" (Roger, 2003, p. 177). Although innovation and diffusion are entirely different terms, they are often used interchangeably. Diffusion is "the process in which an innovation is communicated through certain channels over time among the members of a social system" (Rogers, 2003, p.5). Adoption eventually leads to diffusion, and hence in the field of research, both terms play a crucial role. The diffusion occurs in two significant steps: adoption by an individual, followed by group adoption and finally results in mass adoption, causing diffusion of the technology or product (Davis, 1989).

The diffusion theory has been studied for about three centuries now, and one of the most important contributions involves Everett Rogers's work. Rogers' description of the innovation process in his book "Diffusion of Innovation has been used in various fields like technology, public well-being, and economics. However, this theory is mainly used for developing an adoption and diffusion framework (Rogers, 2003). Rogers' diffusion theory constitutes four elements: innovation, communication channel, time, and social system.

Innovation is perceived novel by the adoption units, individuals, or a group (Rogers, 2003). Depending on the discovery, an innovation may vary from one consumer to the other. For example, although an innovation might have been developed in history, it would be an innovation for them if a consumer perceives it as new. Rogers described the advantages and disadvantages of innovation and expressed uncertainty as to the most significant obstructing factor towards the adoption process. This type of roadblock may be avoided if society was made aware of the benefits and drawbacks of the innovation in advance.

The second element, communication deals with achieving consensus amongst the participants through exchanging information or a discussion (Rogers, 2003). The channel refers to the medium of information exchange between a receiver and a sender. Rogers describes interpersonal communication and mass media as the most crucial channels for exchanging information. Interpersonal communication refers to the exchange of words between two parties and mass media could consist of television, radio, or newspaper. Interpersonal communication can lead to a change of attitude, eventually leading to adopting or rejecting innovations. For an adoption, most individuals rely on word of mouth or subjective evaluation rather than evaluating an innovation based on scientific or empirical data produced by experts (Rogers, 2003).

Rogers determined time as the third element of his diffusion model. Acceptance or rejection of innovation is a long mental process, where time plays an important role. This process begins with awareness of the innovation, followed by generating an impression of the innovation, which leads to a decision to accept or reject, and finally, the potential of implementing the new concept, after which the new idea is confirmed.

The final element of the social system. This element aims to achieve a common goal by the collaboration of cross-functional or interconnected problem-solving units (Rogers, 2003). The

adoption and rejection of an innovation depend on the individual behaviour in the social system (Rogers, 2003).

4.1.1 Rogers innovation-decision process

As already mentioned, circularity in the fashion industry is a systemic innovation. The decision process of the innovation will help analyze the cause of consumers decision to reject circular fashion. The Rogers innovation-decision process model explains consumer behaviour that leads to the adoption or rejection of an innovation. The innovation-diffusion process involves the individuals 'seeking information about the product and then processing the information (Rogers, 2003). The process of adoption or rejection is not instantaneous and is carried out in five stages (Rogers, 2003). The various stages of the innovation-decision process are depicted in the diagram and are further discussed below.
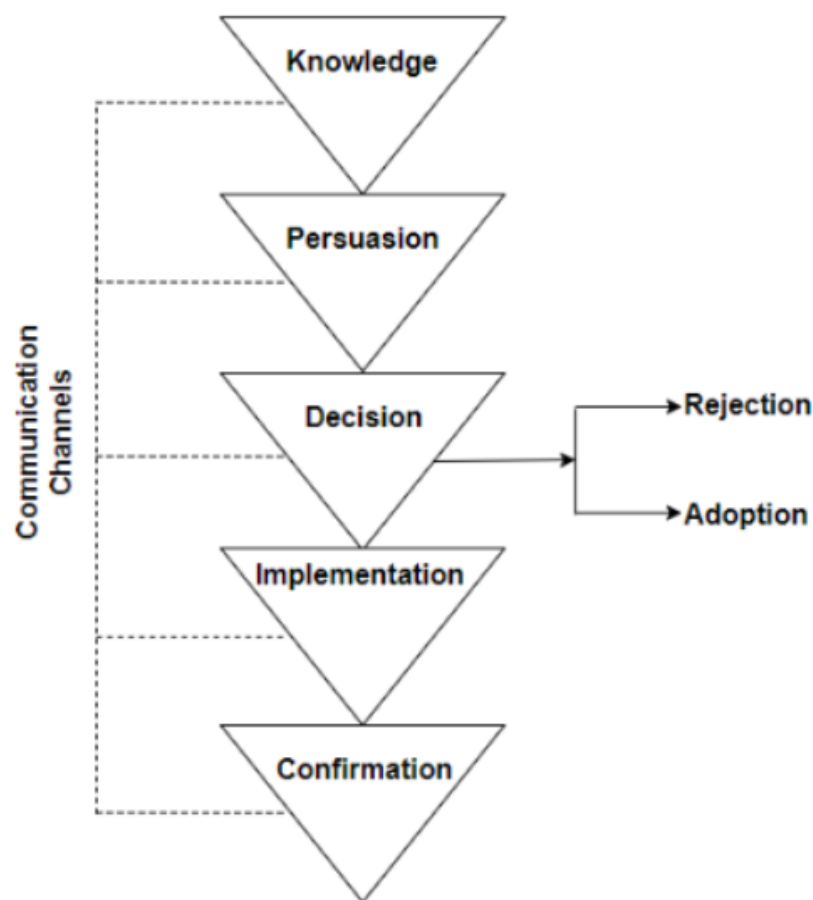
Figure 7: Innovation-diffusion process stages (Adapted from Roger, 2003)

Knowledge Stage
The first stage of the process is termed Knowledge and deals with an individual exploring information regarding the existence followed by the advantages and disadvantages of the innovation. This Knowledge would help the individual make a better decision regarding the adoption or rejection of the innovation (Rogers, 2003). Rogers describes Knowledge that an individual seeks before making an adoption or rejection decision. This includes-

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- The Knowledge of the innovation's nature, i.e., what exactly is the innovation, and encourages people to investigate and learn more about it. This sense of information aids individuals in deciding whether to accept or reject an innovation.

- The how-to Knowledge deals with the working of an innovation. Individuals need to have sufficient Knowledge of the innovation before using it (Wetzel, 1993).

- Finally, the principles of Knowledge is concerned with how an invention works and why it works in the way it does (Rogers, 2003).

Persuasion Stage

These Knowledge may not necessarily direct an individual to adopt or reject an innovation as consumer behaviour also affects individuals' attitudes. The second stage of persuasion deals with the individual having positive or negative attitude towards the innovation. The attitude of the individual is shaped after gaining Knowledge about the innovation. The individuals' beliefs and opinions are affected by uncertainty regarding the innovation functioning, the social enforcement and through colleagues, peers. However, the adoption rate of innovation in the same culture might differ (Rogers, 2003).

Decision Stage

The next stage is the decision stage. The consumers make the final decision to accept or reject the innovation in this stage. The adoption chances increases if individuals are given the opportunity for a partial trial. Rogers, active and passive, have described two types of rejection. According to Rogers, these rejection types have not been discussed enough in the previous literature. Failure to adopt an innovation even after the partial trial is categorized as active rejection, whereas passive rejection is rejecting the innovation without even considering adopting it in the first place. Rogers describes a discontinuous decision as a decision to reject the innovation after initially adopting it. The order of the first three stages could be interchangeable, meaning Knowledge could be followed by the decision and persuasion stages. This usually happens when a consumer adopts innovation and other influences a group, leading to a collective adoption decision (Rogers, 2003).

Implementation Stage

Along with the newness that is associated with innovation comes uncertainty. This uncertainty could be in the form of technical issues but could also include non-technical issues. The distinctive newness of the innovation is thus lost, leading to the end of the innovation-decision process (Rogers, 2003).

In the implementation stage, an innovation is put into action. The stage also encounters reinvention. Reinvention is the modification of the adoption process and implementation based on the requirements of the user. Rogers describes invention as the process of coming up with or discovering a new idea. In the context of increased reinvention, rapid adoption of innovation occurs (Rogers, 2003).

Confirmation Stage

The fifth stage is the confirmation stage. In this stage, the individuals seek support for their adoption or rejection decision. Rogers states that if the individual is given contradictory information regarding the innovation, his or her decision may be reversed.. Depending on the kind of support the individual receives, they could continue or discontinue the adoption of the innovation (Rogers, 2003).

4.2 Consumer decision process

To analyze factors that influence circular fashion consumption, Kotler's theory of the consumer decision process (2008) would be interesting. This model aligns with Rogers (2003) model of innovation diffusion. Kotler's 'Consumer decision process' consisting of five stages. This model explains complex consumer purchase decisions that start before and last after the purchase (Kotler et al., 2008).
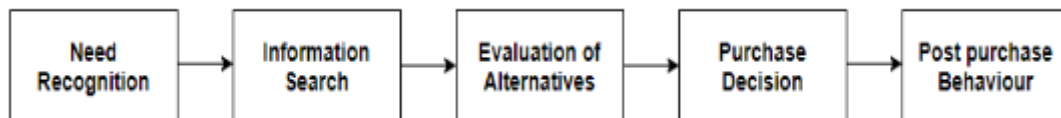
Figure 8: Buying Decision process. (Source: Adapted from Kotler et al., 2008)

The consumer's decision to buy a specific product starts way before making the actual purchase and might even continue after the purchase. However, consumers might also skip the stages or follow a different sequence. For example, if a person knows what to buy exactly, they will skip need recognition and information gathering.

The buying or consumption process starts with the need-recognition. The problem or need of the consumer is triggered by internal or external stimuli, where internal refers to an individual's primary need like hunger or shelter and external refers to a need triggered by promotion or advertisement (Kotler et al., 2008). Once the consumer has identified the need, the consumer reaches the information search stage. They will look for information that would satisfy their need or could buy a product that fulfils their need and is readily available in the same step. This stage aligns with Roger's first stage of diffusion theory consisting of the decision-making process where consumers look for innovation or product-related information through personal or public means. This information can be gathered through family and friends as personal means or public information through mass media or commercial channels of advertising.

The gathered information helps the consumer to make a better decision. Researchers Kotler et al. (2008) mention word of mouth and mass media as crucial driving factors to purchase decisions. This is like the interpersonal communication of Rogers (2003) diffusion model that influences the adoption or rejection of a product.

After the identification of needs and search for relevant information, the consumers reach the third stage of evaluation of the alternative options available to arrive at a final decision (Kotler et al., 2008). This stage resembles Rogers (2003) persuasion stage, where consumers evaluate and form an attitude towards alternative innovation. The evaluation method varies from one consumer to another; some might follow their intuition and not rely on expert opinion, while others rely on closely studying the alternatives and then deciding.

The fourth stage deals with the purchase decision based on the evaluation of choices and the intention of others towards the product. Some factors that may affect the purchasing behaviour at this stage could be situational factors like discounts or sudden unexpected rises in the price. The final stage is considered the post-purchase behaviour that deals with the consumer's level of satisfaction after the consumption (Kotler et al., 2008). This is an important stage as it influences the consumer's expectations and long-term commitment towards the product leading to acceptance or rejection of similar products in the case of a need in the future.

4.2.1. Factors influencing buying decision process.

The consumer behaviour cannot be accurately explained with this conventional model by researchers Kotler et al. (2008) as the decision process does not work linearly. The reasons might include incomplete information availability, complex decision process, or jumbled human ideas. It is assumed that the consumers have the required information available. Hence, consumer behaviour is a "black box" (Paczkowski & Kotler, 1991).

It is not easy to analyze consumers decision to buy or reject a particular product. Researchers Kotler et al. mentions the influencing factors of a consumer's buying decision process. These include demographic factors, psychological factors, cultural factors and social factors. These factors could help develop the conceptual model to understand circular fashion consumption.

The decision process could be influenced by age, gender, income, occupation, education and personality, falling under the category of demographic factors. Also, the preferences of the goods and services change over time; for example, consumers may consume clothing based on the current trend. When it comes to gender, different gender has different preferences (Kotler et al., 2008). Income also plays a huge role in the consumption process; for example, an executive will look for expensive and good quality suits, whereas a blue-collar worker will look for decent clothes and affordable clothes. Similarly, a consumer's economic stability in terms of personal income and savings mediates consumer and behaviour. Kotler also states that consumers buy a product to fit their lifestyle and the values they represent. Therefore, lifestyle could be the way of living in terms of his interest (fashion, food), opinions (social, cultural) (Kotler et al., 2008).
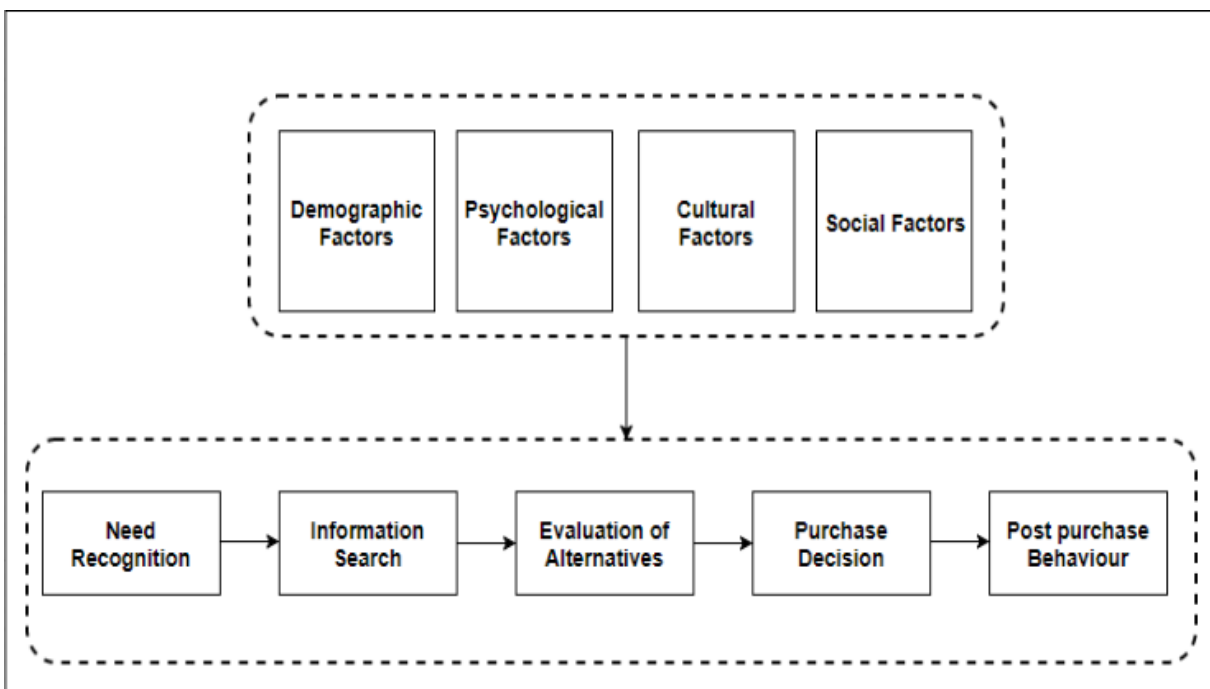
Figure 9: Factors affecting consumer decision process to buy (Adapted from Kotler et al, 2008)

Kotler et al. emphasize the buying behaviour is affected by psychological factors like attitude, belief, and perception (Kotler et al., 2008). Consumer perception is how an individual forms a meaningful image of the world based on the selected and interpreted information (Kotler et al., 2008). This perception regarding a product varies from one person to the other. To form perception, the consumers undergo three stages—first, selective screening, which is sorting the most relevant

information based on the consumer's ability. The next stage is a selective distortion which is the human tendency to form an ideology about the product based on the existing beliefs, followed by selective retention, which is retaining information based on the consumer's belief or attitude (Kotler et al., 2008).

Customer beliefs can be based on facts that influence consumer behavior and the level of liking or disliking a product, or they can be based on a preset image that the individual possesses. Consumer attitude depends on an individual's consistent evaluation that defines the feelings of the consumers towards the product (Kotler et al., 2008). According to Kotler's research, it is not easy to alter these beliefs and attitudes because they follow a pattern. For example, sustainable clothing tries to fulfil consumers' attitudes towards consumption as ethical and environmentally less harmful.

An individual's culture majorly shapes their consumption behaviour (Kotler et al., 2008). This is the basic set of needs, values, and wants to be acquired by an individual from a family. This culture varies depending on nationalities, geographies, and religions-people belonging to the same subculture share similar values and attitudes (Kotler et al., 2008). The individual's behaviour is also affected by social factors like family members, member groups. For example, in developed countries, women are responsible for most of the household spending.

4.3 Behaviour models

Behaviour models can be broadly classified into normative behavioural models and rational models. The rational model is based on the individual's self-interests. This implies that if a consumer feels that acting in a specific manner would benefit them, their attitude would be positive towards that behaviour. Hence, this model suggests that an individual's behaviour is after weighing the costs and benefits.

For this research, the Theory of planned behaviour (TPB) will be used as the rational choice model, which is an extension of the Theory of Reasoned Action (TRA) (Hill et al., 1977; Ajzen, 1991). This model was developed to overcome the barriers of TRA and considers most of the factors that affect consumption as presented by Kotler et al., which is formulated based on rational decision making of consumers (Kotler et al., 2008). The aspects of rational, normative, and Kotler models are considered to ensure reliability.

Sustainable consumption is based on moral beliefs attitudes, and hence normative models for an individual's behaviour have been included in the conceptual model. These normative models are a function of the individual's normative beliefs. The obligation of a consumer to behave in a certain way depends on how they believe their behaviour will cause public benefit. Prosocial behaviours are commonly explained by Norm-Activation Model (NAM) and Value-Belief Norm (VBN) (Schwartz, 1997; Stern, 2000). Out of these, VBN will be integrated with Rogers, Kotler and Ajzen's TPB theories.

Many of the models listed above have been commonly used to research individual consumption patterns. However, only original models were considered in this paper for objective analysis.

4.3.1 Theory of Planned Behaviour

The Theory of Planned Behaviour (TPB) was developed by Ajzen & Fishbein (1977). The model analyzes human behaviour performed under self-control better than other models. This behaviour occurs with the individual's choice and commitment to conducting the behaviour (Armitage et al.,

1999). The TPB model is adequate when individuals have sufficient control over their behaviour (Ajzen, 1991). Moreover, the model has been successfully applied to analyze behaviours in social and environmental issues (Chan and Lau, 2002) but fails to explain habitual behaviours (Steg & Vlek, 2009).

TPB explains an individual's Behavioural Intention (BI) based on three factors. The willingness and eagerness with which an individual performs a given behavior is referred to as BI. Attitude towards the behaviour, Subjective Norms and the Perceived Behavioural Control(PBC) are the three constructs influence the Behavioural Intention (BI) that further shapes the individual's behaviour (Ajzen, 1991). The three factors are resultant of the individual's specific beliefs.
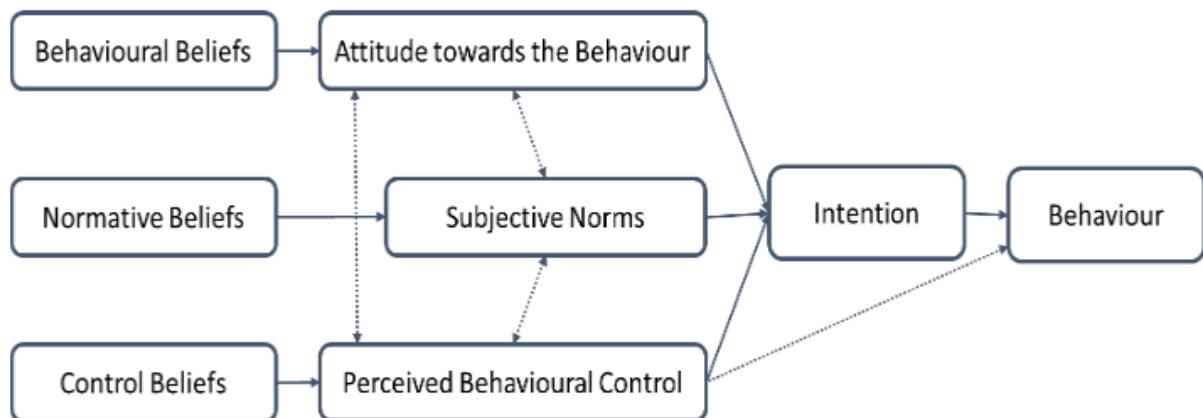
Figure 10: Theory of Planned Behaviour (Adapted from Ajzen, 1991)

As shown in the illustration above, Behavioural, Normative and Control beliefs cause the factors attitude, subjective norms and perceived behavioural control respectively that lead to a certain behaviour.

Attitude towards behaviour
The behaviour is valued positively or negatively based on an individual's psychological emotion or attitude towards the act. Behavioural belief influences the attitude and determines an individual's belief about the positive or negative outcome of the behaviour, thereby developing the consumer's attitude towards the behaviour (Ajzen, 1991). The attitude represents the individual's judgment of the situation by considering the behaviour as good or bad. Based on the judgment, the individual decides if they would want to perform the behaviour. Behaviours with favourable outcomes are preferred over adverse outcomes.

The Theory of Planned Behaviour captures the consumer's attitude as mentioned by Kotler in the psychological factors and Rogers in his theory of diffusion as an influencing adoption or rejection factor.

Subjective Norms
The second factor influencing the individual's behaviour is Subjective Norm. Subjective norm is based on the perceived social compulsion that influences an individual to perform a specific behaviour. It involves the normative belief of what the people important to the consumer would feel about their behaviour. The buying behaviour can be influenced by the individual's friends, relatives or colleagues, whether the behaviour will be opposed or endorsed (Ajzen, 1991). The culture and social aspects explained by Kotler et al. (2008) influence the subjective norm of the consumers and determine the consumer's buying decision (Khare, 2015)

Perceived Behavioural Control

The extent to which a person believes that they will behave in a specific manner is depicted by PBC (Ajzen, 1991). It is the perceived difficulty or ease with which a behaviour would be performed.

PBC is influenced by external factors like anticipated obstacles, resources, and experiences in the individual's past. For example, a person anticipating the ease or difficulty of extensively working out in the next 15 days.

Perceived Behavioural Control is a function of control beliefs that deal with the possibility of a factor acting as a facilitator or preventing a behaviour (Ajzen, 1991). For example, the perceived control behaviour is high when a consumer believes he has the opportunities and resources with fewer obstacles.

Behavioural Intention

Behavioural Intention (BI) is the individual's choice to act in a certain way. Therefore, BI is the immediate antecedent of an individual's behaviour as individuals tend to carry out their intentions, provided adequate control over a particular behaviour (Ajzen, 1991). However, intention cannot be considered as a reliable measure as individuals, at times, do not perform a specific behaviour even if they have a solid intention to do so.

4.3.2 Value belief norm model.

According to the researcher Stern (2000), Environmentally Significant Behavior (ESB) is an essential factor influencing sustainable and/or circular fashion consumption. This could be used to explain pro- environmental behaviour.

For analyzing the environmental behaviour, the Value Belief Norm (VBN) model will be studied. Researchers Stern et al. (1999) established the VBN theory to determine human behaviour in an environmental context. The VBN theory is based on an individual's ESB. This behaviour defines an individual's action to protect the environment or a part of its ecosystem from human destruction (Kaitwsin & Han, 2017). According to the VBN model, there is a higher possibility of eco-friendly behaviour when causal series of values, beliefs and personal norms exist. Personal s have been considered the immediate antecedent of environmental behaviour. According to recent studies, social and personal norms influence consumer behaviour (Choi et al., 2015). The studies show that individuals are likely to perform a specific behaviour if the people important to the individual value their behaviour (Ajzen, 1991). Although, VBN theory promises to directly predict the ESB rather than intentions (Stern, 2000).
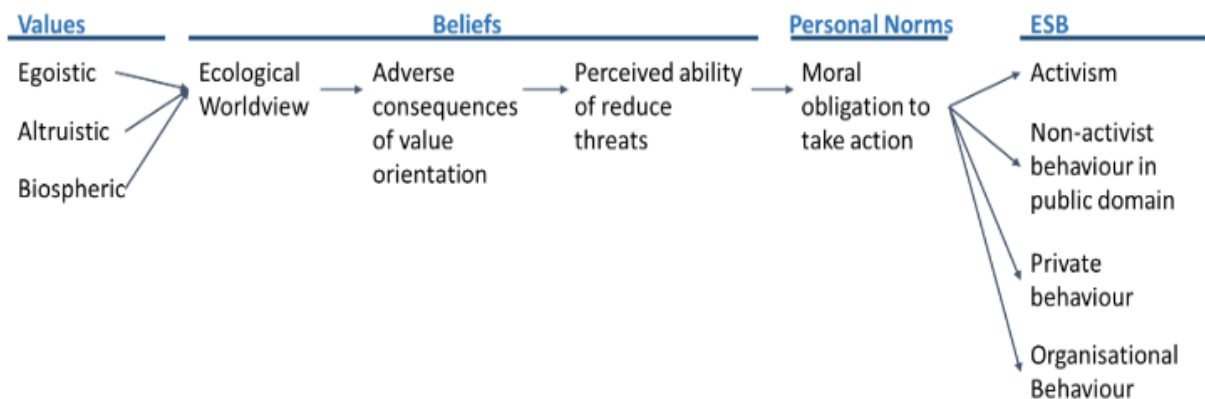
Figure 11: Value-Belief-Norm model (adapted from Schwartz (2000)

The personal norms deriving from pro-environmental action result from belief in one's ability to reduce risk (AR) and adverse consequences (AC) of valuable objects. AR and AC are general beliefs concerning the relationship between humans and the environment.

Values

The first stage of the model begins with various values, including egoistic, altruistic, and biospheric, that affect adverse consequences of valued objects, the ability of an individual to reduce risk and personal norm. These values are considered the guiding principle for any individual behaviour that could vary based on comparative importance. This further influences AR and AC. This consequently affects the ESB behaviour of an individual, which means that the values of an individual directly affect their behaviour (Stern, 2000**).**

The values are are less likely to differ and are considered stable (Schwartz, 1992). Stern (2000) segregated the values into egoistic, hedonic, altruistic, and biospheric. According to Gieger & Keller (2017),

- Egoistic values provide a sense of achievement or power to people who intend to contribute towards social well-being. This value denotes self-interest and deals with egoistic tendency.
- Biospheric values arise from compassion towards the biosphere, for example, contributing towards environmental protection and preventing pollution.
- Altruistic values deals with the welfare of others. This component of VBN is considered selfless for more significant common benefit.

There has been little empirical evidence to support these values, but the values have been considered an important aspect to analyze human perceptions of the environment (Stern, 2000).

Beliefs

The ecological worldview is the first part of the belief that follows the value aspect along the causal chain of VBN. Belief is also a measure of the New Ecological Paradigm (NEP). NEP is a measure of support for a "pro-ecological" viewpoint (Dunlap & Van Liere, 2008).

The second component of the Beliefs factor is adverse consequences (AC) of valued objects. The threats could emerge to the valuable objects due to human interactions (Stern et al., 1999). One could reduce the negative consequences if one is aware of the AC of their actions. Therefore, the second element of belief, the perceived ability to reduce threat (AR), is the individual's ability an individual's ability to mitigate unfavorable repercussions.

Personal Norms

According to Stern (2000), the personal norm is the individual's moral obligation to act in a certain way. Values and beliefs influence the personal norm.

According to Stern (2000), Values directly influence personal norms , and beliefs act as the mitigating variables. Hence, only the direct relationship between the values and personal norms would be considered for this research.

5. Identifying influencing factors at an individual level that could influence circular fashion.

This chapter will answer the Research Question 2 by identifying the factors that could influence circular fashion consumption through the literature related to sustainable consumption, sustainable fashion and circular economy in the fashion industry.

The basic structure of the conceptual model will be adopted from the Theory of Planned Behaviour (Ajzen, 1991). According to the model, its three components, Attitude, Subjective Norm and Perceived Behavioural Control mainly influences the behaviour of an individual. The micro-factors influencing the three aspects of Theory of Planned Behaviour will be derived through Rogers theory of diffusion, Kotler's buying decision process (Kotler et al., 2008), Value Belief Norm model (Stern, 2000), and literature on sustainable and circular consumption. Finally, the section will describe the constructs.

5.1 Attitude

According to Rogers (2003), consumer behaviour is affected by an individual's Attitude that could be positive or negative towards the product or process. Researcher Kotler also emphasizes the importance of Attitude as a psychological factor that depends on the individual's consistent evaluation that defines the consumers' feelings towards the product (Kotler et al., 2008). This Attitude is affected by behavioural belief which is the belief of an individual about the positive or negative outcome of the behaviour and hence develops the consumer's Attitude towards the behaviour. If an individual believes the outcome would not be favorable, the behaviour would not be preferred. Consumer attitude toward sustainable consumption is determined by how concerned they are about society and the environment in their daily lives and whether they have taken previous measures in the area (McNeil & Moore, 2015).

Based on the literature conducted on sustainable consumption, sustainable fashion and circular fashion, Attitude is influenced by Demographics, garment characteristics, and consumers' awareness. These aspects will be explained in detail below-

5.1.1. Demographic factors

Age
Age is considered an essential factor that influences the consumption (Kotler et al., 2008). It has an impact on a person's preferences leading to a specific buying behaviour. Change in interest occurs at different stages of their life cycle.

According to researchers Auty & Elliot (1998), younger people are more fashion conscious. This makes them more involved in fashion than the older age groups. Also, based on the research, the younger generation shows more concern towards the environment. Researchers Joy et al. (2012) suggest that even though young consumers support the sustainability concept but they do not consume sustainable fashion. Sometimes, they are not able to contribute by consuming sustainable fashion that is high priced, but they contribute by consuming secondhand products that are less expensive. This initiative reduces landfill waste (Reiley & Delong, 2011; Xu et al., 2014). Hence, young consumers could be the main target market for secondhand fashion. According to the study by researchers Xu et al. (2014), young consumers in the US and China consume secondhand fashion.

Gender

Researchers Kotler et al. (2008) determine gender as a crucial demographic factor that influences the buying decision. Several research studies show that women are fashion conscious and involved in buying clothes as compared to men (Browne & Kaldenberg, 1997; Auty and Elliott, 1998).

Based on historical, social context, fashion belonged to women, and young female consumers exhibit high consumption for new fashion items and have little or no awareness regarding the social impact of the consumption (Bakewell et al., 2006).

Income

Originally, secondhand clothes entered the market to meet the needs of less privileged customers who wanted to dress affordably. People buy secondhand clothes for a variety of reasons, including lower prices. Buying secondhand inexpensive fashion pieces is often associated with frugality (Roux & Guiot, 2008). As a result, the consumption of secondhand goods is often closely correlated.

With an improving income, an individual's standard of living and status and purchasing power increases. This improves the possibility of consumers buying high-quality sustainable fashion (Niinimäki, 2010).

5.1.2. Awareness and knowledge

It is assumed that consumers would act in favor of the environment if they knowledgeable and aware of the environmental issues. This knowledge positively influences consumer intention to buy and actual buying behaviour (Chen & Chang, 2012). Conversely, with a lack of information, while buying, consumers are not keen to buy products that have a positive impact on the environment (Connell, 2010).

With increased awareness towards sustainable clothing, over the years, consumers' purchasing decisions are only partially influenced by the criteria of sustainability (Connell, 2010). CE success in the fashion industry lies with conscious consumption. However, consumers often lack awareness of the harmful environmental impact of fashion consumption and production (Connell, 2010). Research done previously show that consumers do not connect fast fashion with its negative consequences (Goworek et al., 2012; Hobson, 2004; Han et al., 2017; Moon et al.,2014).

Moreover, most of the impact on sustainability occurs at the end of the product lifecycle. Consumers are not aware of the impact they could create based on their purchasing, usage, and disposal habits (McNeil & Moore, 2015). The environmental impact awareness could influence the pro-environmental behaviour (Kaiser & Fuhrer, 2003; Mobley et al., 2009; Vicente- Molina, 2013). Such awareness will most likely appeal to conscientious buyers on the lookout for new products.

However, the consumers awareness of the environmental impacts and a positive attitude towards the concept of sustainability might not always lead to the purchase intention, causing the attitude-behaviour gap (Terlau & Hirsch, 2015).

5.1.3. Garment characteristics

Price

Price is a vital factor in consumer purchasing decisions, and it is often prioritized over sustainability (Butler & Francis, 1997; Grasso et al., 2000). Clothing consumption cannot be influenced solely by the sustainability factor (Harris et al., 2016). Despite the environmental benefits associated with

sustainable fashion, due to the need to get the best deals, consumers prefer fast fashion that is available at low prices (Goworek et al.,2012). The majority of customers place a higher value on price, quality, and style than ethical considerations (Joergens, 2006). As a result, price sensitivity will have an influence on the sustainable fashion behaviour. However, based on the literature on eco-friendly marketing, consumers concerned about the environment would consume sustainable products even if they are available at a high price (Kim & Damhorst, 1998). According to a study conducted by Gleim et al. (2013), the perception of high prices for sustainable clothing is linked to high levels of price sensitivity. This makes it difficult for customers to switch to environmentally friendly items. Consumers are usually reluctant to consume these products even after paying a high price for some clothing as the choices are limited (Gleim, 2013).

The second-hand clothes sector is known for its inexpensive costs and the ability to prevent environmental damage generated by garment disposal (Xu et al., 2014). According to the study by McNeil and Moore (2015), consumers purchase second-hand clothing not because they are sustainable but because they are affordable. However, eco-friendly consumers are less price-sensitive and are willing to spend money on products that are not environmentally harmful.

Product Attributes: Quality, style, variety
Sustainable fashion behaviour is influenced by the product attributes and the quality of the clothing. Consumers seek these functional features in a product, and it determines a consumer's purchasing decision (Chi, 2015). If a clothing possesses a good quality, it would positively influence the consumer's buying behaviour. Conversely, poor-quality clothing in the form of recycled or second-hand fashion can negatively influence the purchase behaviour of the consumer (Achabou & Dekhili, 2013).

When addressing circular clothing, the main concerns were quality, design, and comfort. Circular clothing consumers demand high quality, as well as luxury and trendy fashion. In reality, these are the same qualities that customers demand from luxury brands. Consumers required second-hand or recycled to be of the same quality as new garments made from raw materials. However, some findings show customers' wrong perception of recycled textiles (Achabou & Dekhili, 2013). Moreover, research on sustainable clothing consumption in the UK shows that high price of clothing is associated with high quality (Carey & Cervellon, 2014).

When it comes to fashion, buyers pay special attention to product aspects such as style, fit, and quality, which substantially impact their purchasing choice (Ko et al., 2011; Niinimäki, 2010). However, these features are not necessarily correlated with sustainability (Harris et al.,2016). Sustainable clothing design has a stigma for being unattractive, dull, or having few varieties and options (Moon et al., 2014), pushing demand away from environmentally friendly items. Furthermore, some consumers equate the second-hand market with a lack of choice and a sense of outdated style (Diddi et al., 2019), leading consumers away from sustainable fashion. Moreover, according to the researchers Cervellon et al. (2010), consumers from Italy and France considered sustainable clothing as dull and lacking style. Also, according to the research by Joergens(2006), sustainable fashion provides limited choices to the consumers and does not provide clothing at affordable prices, as in the case of fast fashion. According to this research, consumers believe that a sustainable style does not satisfy their needs and are usually unattractive. Consumers need the clothing to add an aesthetic value and not just be ecofriendly (Jeorgens, 2006).

Ko et al. (2019) looked into the impact of product attributes further and found that intrinsic cues (i.e., aesthetics and functionality) influenced the repurchase intention of such products indirectly.

5.2. Subjective norm

The social pressure that a person feels about a certain action is referred to as the subjective norm. If the customer perceives this activity as having positive effects, he will feel guilty or anxious about not doing it and instead opting for a worse behavioural choice. When compared to fast fashion, eco-fashion consumption is a safer option. Hence, the government plays a vital role in promoting sustainable fashion (Han et al., 2010).

If a customer sees advantages in purchasing sustainable clothing over conventional clothing, he will encounter cognitive dissonance or social pressure if he does not act accordingly. Therefore, consumers who have positive subjective norms against a given action are more likely to behave positively (Han et al., 2010).

5.2.1. Culture

Cultural beliefs have a considerable impact on consumer behaviour (Kotler et al., 2008). This aspect is also like the interpersonal communication that influences the purchase behaviour (Rogers, 2003). Cultural differences may affect consumer's buying behaviour (Carey & Cervellon, 2014). A higher price for a clothing, for example, in the United Kingdom denotes higher quality, whereas in France, it denotes the pursuit of higher prestige (Carey & Cervellon, 2014). These variations were also observed in the consumption of used garments in China and US. According to the study by researchers Xu et al. (2014), cultural differences play a significant role in consuming second-hand fashion. The majority of the respondents in the US consumed second-hand fashion, whereas only 10% of the respondents in China consumed the used clothing.

5.3. Perceived Behavioural Control

Perceived Behavioural Control is the control of an individual to perform a given behaviour by having control over their actions (Ajzen, 1991). Perceived Behavioural Control (PBC) is positively related to behavioural intention in various research contexts, including recycling and green goods in general. In addition, PBC influences consumers' intention to buy and, finally, purchase decisions (Taylor et al., 1995; Moser, 2015).

Availability
Sustainable fashion has been a part of the niche market since a long time. As a result, customers needed to know where to look for it (Han et al.,2010).

Due to the limited availability and accessibility of sustainable and ethically created textiles, optimum sizes and fits, second-hand shops, and repairing services, consumers see sustainable and circular fashion consumption as extremely inconvenient (Diddi et al., 2019). Sustainable consumption is hampered by a lack of sources or awareness of where to find sustainable fashion (Moon et al.). This is because consumers prefer convenience when looking for a product (Connell, 2010). Usually, consumers are unwilling to invest the time and effort required to find and purchase sustainable items.; readily available products are preferred over considering the sustainability aspect (Young et al., 2010). Consumers usually seek an effortless and convenient shopping experience (Diddi et al., 2019).

This perceived lack of availability and preference is regarded as a barrier for general eco-friendly items, causing discomfort and lowering purchasing intent (Barbarossa & De Pelsmacker, 2014). In

the case of recycling, McCarty and Shrum (2001) discovered that consumers who feel uncomfortable finding a way to recycle are less likely to do so.

Transparency in sustainability

Besides availability being a barrier, consumer awareness and trust in selecting eco-friendly clothing and avoiding greenwashing is a barrier to purchase purpose (Connell, 2010). Furthermore, consumers reported being perplexed by current eco-fashion brands (Niinimäki, 2010). Sometimes, doubt legitimate, sustainable supply chains especially in the fashion industry (Connell, 2010).

Consumers have trust issues towards the green claims in terms of eco-labelling and certification factor specifically. These certifications are a means to communicate reliable information to consumers and encourage them to buy sustainable clothing (Young et al., 2010). However, it is common to see some companies begin to green their targeted advertising by using social or environmental claims (Chen & Bruns, 2006). (Chen & Bruns, 2006). Greenwashing is regarded as the false advertising of green credentials (Delmas & Burbano, 2011). There is no consistent law that prohibits greenwashing (Young et al., 2010). As a result, people are skeptical of environmentally friendly products (Diddi et al., 2019; Harris et al.,2016). Consumers are hesitant to purchase sustainable items due to a lack of trust in production transparency and mistrust of the company's promises (Bly et al., 2015). As a result of this skepticism, a negative attitude toward sustainable fashion consumption is likely.

5.4. Personal Norm

The positive relation of biospheric values (Gieger & Keller, 2017) causes sustainable fashion consumption. It can be defined as a consumer's belief that choosing a green product over a conventional product will improve existing environmental or social challenges in the context of sustainable consumption (Diddi et al., 2019)**.** According to the researcher Chi (2015), consumers purchase sustainable clothing to gain social approval and create a positive impression on others. This is associated with the egoistic value that an individual possesses. Individuals who firmly support values that represent any type of self-interest are less likely than those who oppose such values to engage in pro-environmental activities (Steg et al., 2011).

Through this section, the potential factors that could influence circular fashion consumption have been identified. The researcher will further look through the interviews if the respondents recognize these factors as potential factors that could influence the consumption process and further identify additional factors that might inhibit the circular fashion consumption.

5.5. Conceptual model

Based on the identified factors from the existing literature, the researcher has formulated a conceptual model with factors that might influence circular fashion consumption. This conceptual model will be further modified based on the opinions of the respondents.
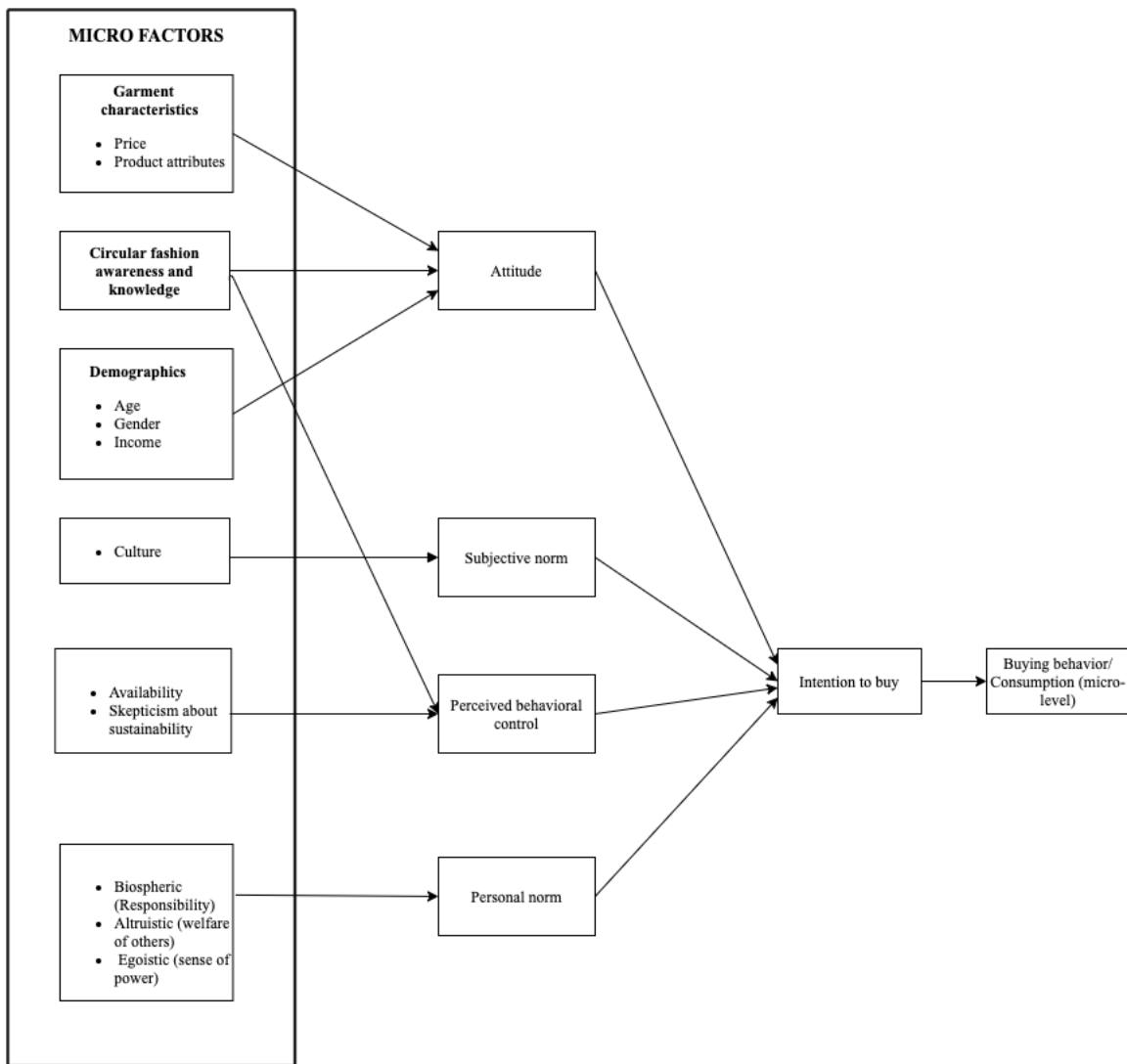
Figure 12:: Theory based initial conceptual model.

6. Empirical Research

This thesis section deals with empirical data collection by conducting semi-structured interviews. 13 interviews were conducted with seven target groups: consumers of sustainable fashion, non-consumers, CE strategists, sustainability consultants, circular fashion entrepreneurs, fashion designers and researchers in the field of fashion. The full version of the interviews is provided in Appendix D.

The semi-structured interviews' objective is to understand the interviewees' opinions on the identified factors based on literature and identify additional factors that could impede circular fashion consumption. In the coming sections, the representation of the respondents will be as follows-

- Consumers: C1, C2
- Non-consumers: NC1, NC2
- CE Strategists: CES1, CES2
- Sustainability Consultants: SC1, SC2
- Circular fashion Entrepreneurs: CFE1, CFE2
- Fashion Designers: FD1, FD2
- Researcher: R

6.1. Consumption methods

The respondents were asked the following question-
"What are the different circular fashion consumption methods you are aware of?"

The perspectives of the respondents were-

Consumer 1: Although, secondhand clothing is better than buying something, it might still be fast fashion and might not last long and end up in landfills. Consuming vintage pieces are more circular option.

Consumer 2: There are various circular types. And they all start with 7 R' Strategies. It includes refuse to use new items, reduce your consumption behaviour, reuse the items you already have, recycling the clothing after use. After the maximum personal usage, one could sell it, rent it, and finally when it is completely worn out, it should be recyclable and returnable to the loop.

Non-Consumer 2: The circular fashion clothing use recycled materials. Also, when it comes to consumers, they can buy secondhand clothing.

Circular Economy Strategist 1: You can send back your old, branded clothes, they will either remake them, refurbish them, or they will upcycle them into something new. For example, taking back, a pair of jeans making it into a skirt.

Circular Economy Strategist 2: Circularity is something that starts at beginning of the product. In terms of circular models, MUD Jeans in the Netherlands sells recycled clothing. Also, Brightloops makes a wool jumper as circular as possible.

Sustainability Consultant 1: Offers in the circular fashion principles are close to the 'R' strategies. One should decrease the resources use, increase the usage of clothing, and other principles include renting, but also repairing and sharing. On could also use apps like Vinted for doing swaps.

Sustainability Consultant 2: Through leasing model, one could pay a rental fee every month and get different clothing. Another type could be second-hand clothing.

Circular Fashion Entrepreneur: There is a hierarchy of sustainability in textiles based on the impact that includes the 7 R's like reduce, reuse, recycle, etc. It starts with reduce buying or using textiles, then buy less, buy better quality clothing that might last longer, and then reuse.

Circular Fashion Entrepreneur 2: First, recyclable clothing is usually designed and developed with circularity in mind, that means that they are either biodegradable or mechanically/chemically recyclable. Second, Swap Shop idea where the company owns an inventory of garments and then swaps it out amongst its consumers. Third example would be just rental models. Also, there is an online platform Vinted in Europe, big in the Netherlands as well, which is all about reselling your old. Finally, garment repair and tailors have a crucial role to play in circularity as well.

Fashion Designer 1: There are circular aspects in terms of buying recycled products. It begins with the raw material entering the circularity loop, it is of the highest possible quality in to keep it circling for as long as possible. and then the second loop that will be slightly degraded, etc. Moreover, it is important to keep your clothes for a long time. Buying a good quality sustainable clothing and consuming clothes that are already recycled can help.

Fashion Designer 2: On the Vinted app and eBay, used clothing can be sold. Moreover, clothes can be recycled if they are made of a single material. Also, it is important to consume good quality clothing so that it could be used for years rather than focusing on quantity.

Researcher: The 'R' methodology describes several levels of circularity, you could also say and the more at the top you are of the ladder, the more circular it is. Also, in the Netherlands, we have quite a few clothing libraries in Hague, Arnhem, and Amsterdam mainly for second-hand and rental. And it is a way to make sure you consume less but keep that interesting change of clothes.

6.2. Consumer/ Non-consumer of circular fashion

The respondents were asked the following question-
Do you consider buying circular fashion? Why/ why not?

6.2.1. Consumers of circular fashion

Consumer 1: I would love to buy circular fashion when I can afford to spend that extra money, but it must be comfortable, wearable, fashionable and practical.

Consumer 2: At this point, I buy more sustainable fashion, and I recently shifted into buying only things secondhand and rental rather than buying it new in terms of fashion.

Circular Economy Strategist 1: I have recently found a UK brand from where I ordered dungarees that had no metal, no hard trims anywhere. But it is made up of all organic cotton.

Circular Economy Strategist 2: I check materials and composition of the things I buy on durability. I first try to see which labels make things that I could fit in and that I like. Then, I go see the composition of the material and make a choice based on that. And I spend money on my clothing because I do not buy much to ensure it is good quality.

Sustainability Consultant 1: I often use second-hand clothing. And I also really like to swap clothing.

Sustainability Consultant 2: I buy secondhand mainly online through Vinted and the Next Closet and if I cannot buy secondhand, then I buy the new clothing through sustainable brands. And I also pay attention to the materials the clothing is made from because materials like polyester are clearly cause a lot of waste and micro plastics. I try to avoid fabrics that are made from material blends as they are difficult to recycle.

Circular Fashion Entrepreneur 1: I buy items made from recycled material, if possible, but it is more expensive than then noncircular items and that is a big issue.

Circular Fashion Entrepreneur 2: I have bought a circular pair of jeans from Mud Jeans. The last product I bought was a pair of shoes from Adidas and they used like recycled content. And they applied Zero Waste pattern design.

Fashion Designer 2: I contribute towards circularity by consuming high quality, basic coloured clothing. The basic colour enables the recycling process in future. And I sell it on Vinted if it is too new to be recycled. I also donate clothes to the needy, this also extends the lifetime of the product.

Researcher: I mostly only buy secondhand or vintage. I started buying vintage and secondhand clothing, because it was a way for me to stand out, without following the trends of the high street. I also buy something with either great quality in terms of material or buy something with a great brand. But also, I look at materials, I never buy anything with polyester, or anything that is fossil fuel based.

6.2.2. Non-consumers of circular fashion

Non-Consumer 1: There are two main factors for it. First, I am not aware from where to buy and how to approach the shops that have secondhand clothes. The second factor is that I am skeptical about the hygiene that is maintained. There is lack of transparency between the retailer and consumer regarding this.

Non-Consumer 2: I am not comfortable to buy secondhand clothes, for hygiene reasons.

6.3. Opinions of the experts on the non-consumption reasons

The respondents were asked the following question-

Why do you think others do not consume it?

Consumer 1: Lack of awareness and ease. I do not know any brand that is circular. There is a big lack of awareness on what it is. Usually anything that is sustainable, or circular is expensive, this leads to an accessibility issue. Moreover, small brands who do it have to add a lot of markups for the quantities making it expensive.

Consumer 2: One of the reasons is the availability of circular fashion is very little very limited and probably people need to change their mindset to not own anything anymore. Also, most of the things that are circular only happen to be online which is not convenient.

Circular Fashion Strategist 1: Money, social background and your education are the main factors. Clothing is a way to express yourself through your clothing and that is not always available in a circular clothing.

Circular Economy Strategist 2: People who are involved in the fashion industry should take the responsibility and change the system. Focusing on the consumer is postponing the responsibility of the production side.

Sustainability Consultant 1: Circular fashion is not easily accessible. It costs me much more time. Also getting clothes in terms of color or type preference is not easy.

Sustainability Consultant 1: It is not easy. You cannot just go into the shopping street and buy whatever you want.

Circular Fashion Entrepreneur 1:One is unawareness. Second, could be non-availability of circular items. third item would be price.

Circular Fashion Entrepreneur 2: If you would want to consume a circular product, your options would be limited, relatively.

Fashion Designer 1: If you have no idea about clothing technology, or textile technology, textile properties it is difficult for consumers to identify a good quality product. If you want to have a good quality product, you tend to go to the more expensive brands. But sometimes those expensive brands do not offer better quality. So, it is a bit difficult to tell. Also, recycled clothing has a downside that it does not look that good.

Fashion Designer 2: People are not into circular fashion because they do not care about the environment, they are not into ethics.

Researcher: Many consumers do not wish to pay a higher price for more sustainable garments. Also, people do not want to go out and look for certain things that have sustainable attributes due to the effort it requires to search.

6.4. Consumption in the Netherlands

Certain factors that influence consumption were identified in the previous sections based on the existing literature. The respondents were asked the following question to understand their opinion on the factors-

What do you think about the circular fashion consumption in the Netherlands? Are people consuming it actively or avoid consuming it?

Consumer 2: I think circular fashion is far away from most of the consumers but it is on the rise, especially with web-applications such as Vinted, the Next Closet that encourage secondhand shopping. This can be considered as circular fashion as this extends the lifetime of the product but does not necessarily close the circular loop.
Non-consumer 1: People rent out clothes on Facebook, thrift shops are quite common and second-hand clothing stores have first-hand as well as second-hand clothes.
Non-consumer 2: People are willing to buy secondhand through apps like Vinted that allows consumers to buy and sell secondhand clothing. However, there are a few brands that work on these circular concepts.
Circular Economy Strategist 1: Dutch are lagging in terms of recycling. Despite some stores like H&M taking back clothes for recycling, I think overall there should be bigger transparency on the end of clothing life.
Sustainability Consultant 1: The Dutch are a little bit more aware about these topics. And I know that they partially buy secondhand just because they like the vintage style. I think the consumption is low because of the accessibility and because it really needs that intrinsic motivation.
Sustainability Consultant 2: I think that it is moving very slowly. And in a world where the materials are so sparse, fast fashion is still being promoted.
Circular Fashion Entrepreneur 1: I think it is increasing but is still very low.
Fashion Designer 1: Based on the information from media, this group is growing.
Fashion Designer 2: Netherlands has clothing libraries, where you can rent and buy clothes.
Researcher: The resale market is growing. But with regards to circularity, I do not think we have anything we can purchase that is 100% circular. A very few people have subscriptions to the fashion libraries. The clothing might not match the aesthetics of the people. Tese options are not available for men and children. And the things we can recycle at the moment are not being upcycled because the technologies are too expensive. However, people are willing to consume second-hand clothing.

6.5 Opinions on the identified factors

The researcher identified a list of factors through the literature available on sustainable consumption, sustainable fashion, and circular fashion. The researcher asked the following question to the interviewees'-

Based on the factors listed on the screen, I would like to know your opinion on the factors. Do you believe 'factor 1' to influence (positively/negatively) consumption? If so, how, and why?
The responses are as follows-

Age

Consumer 1: Age is related to the awareness and spending power. Young people like Gen Z might have the awareness, but they might not have the money to spend on sustainable fashion that is more expensive.

Consumer 2: I think people from those from the age group of 12-17 consider buying less or to buy secondhand, also because they are dependent on their parents. With an income, in their 20s, they could afford high quality sustainable fashion.

Non-Consumer 1: Age of consumer is a neutral factor for fashion industry.

*Non-Consumer 2- *: Younger generation has more acceptance of the circular concept.

Circular Economy Strategist 1: Younger consumer is more aware and are looking for traceability.They are more conscious and are trying to change the current system of unsustainable clothing.

Circular Economy Strategist 2: Younger people learn in school about sustainability and are conscious.

Sustainability Consultant 1: The *age* of the consumer, positively influences the circular fashion consumption because I think the younger generation X, Y, Z is much more into awareness of climate and the impact of fashion.

Sustainability Consultant 2: In general, the younger people from the millennial generation commonly make sustainable choices as compared to the older generations.

Circular Fashion Entrepreneur 1: Younger population is more aware of sustainability.

Circular Fashion Entrepreneur 2: Younger population is more sensitive to what peers in high school were wearing but as you get older, you might look for *quality*, and for longevity in general.

Fashion Designer 1: The answers depend on which kind of circular fashion we are talking about. This can be in terms of high-quality-start cycle and low quality recycled follow up circle. For the high quality, aged 30 plus with money to spend would spend on it. For the second subsequent loop the age could be younger.

Fashion Designer 2: When you are a teenager, you have this obsession to look good and you buy what looks good. But on the other side, people in their 30s might have trust issues in trying something new and maybe they would be too attached to the tradition. Older people are easier to educate on this topic as they are more sensible in comparison to a teenager.

Researcher: Based on our research, older *age* groups have more clothing items than the younger age groups. Probably consumers with the higher age are more easily able to buy sustainable fashion than the younger generation just because it is more expensive.

Gender

Consumer 1: A lot of marketing is focused on women. There are not many men brands that is focused on sustainability in their marketing.

Non-Consumer 1: Females would have a more positive impact in circular fashion than male due to more options and variations for female than that of males.

Circular Economy Strategist 1: Women tend to look for more sustainable garments.

Circular Economy Strategist 2: I see fashion influencers on Instagram are all women. Men may start a little later, but they are very loyal to brands. So, they could be a good target group for sustainable fashion.

Sustainability Consultants 1: Gender could be considered neutral.

Circular Fashion Entrepreneur 1: Female population is more into fashion and more aware.

Circular Fashion Entrepreneur 2: Gender does not play a role.

Fashion Designer 1: Gender does not matter.

Fashion Designer 2: In terms gender, psychological factor plays an important role. Women dress to look good. And this pushes the women to buy instead of buy good. On the other hand, men buy clothes and use it for years.

Researcher: We do not have a lot of sustainable options for men now. Gender makes a difference here. In clothing libraries, we do not have any specifically male items there. We have unisex items but not male.

Income

Consumer 2: When you have a higher income, you are able to afford circular fashion more, because it is more expensive. And it also depends on what type of circular fashion, if it is renting, it could come across as more expensive to people.
Non-consumer 1: If I earn low, I will buy a secondhand cloth, or a fashion that is currently trendy.
Non-consumer 2: I think people who have lower income consume secondhand because they have no option. But people have very high income, might feel that they need to bring something to society.
Circular Economy Consultant 1: An individual would pay more for circular or sustainable clothing that lasts longer if they have high income.
Circular Economy Consultant 2: Income is a key factor and not only because sustainable fashion is more expensive, but it is just about headspace.
Sustainability Consultant 1: If you have a lower income, you would go for second-hand items. And if you have a high income, you might buy expensive new stuff like high quality sustainable fashion.
Sustainability Consultant 2: People with low incomes can consume second-hand clothing. But in general, people with higher incomes, have more abilities to adopt something new like Mud Jeans, for example.
Circular Fashion Entrepreneur 1: As recycled fashion is more expensive relatively, more income will help to buy more circular items.
Circular Fashion Entrepreneur 2: If you have very low income, the sustainability aspect will be less important. Higher income will give you more freedom to base your purchasing decisions on different factors.
Fashion Designer 1: Income should be high if the consumer wants to buy the high-quality recycled clothing.
Fashion Designer 2: Income is one of the most important factors as sustainable clothes cost more as the brands pay their workers well, produce ethically.
Researcher- Income is the main trigger for being able to buy sustainable fashion because sustainable fashion costs much more.

Awareness and knowledge about circular fashion

Consumer 1: Circular fashion awareness does not exist unless you are in the world of sustainability and circularity.
Consumer 2: Awareness and knowledge about circular fashion can really influence circular fashion behaviour. But, acting upon it is something completely different because all the other factors come into play like income, availability of the product might be an issue, creating an attitude-behaviour gap.
Non-consumer 1: It is the most important factor because the more people are aware about it, the more they will put in their opinions, and that will ultimately help circular fashion to grow.
Non-consumer 2: I do not think awareness and knowledge plays a role.
Circular Economy Strategist 1- It has a huge impact. The Fashion for Good in Amsterdam is an opportunity to bring about the awareness. People do not realize that piles of clothes go into the landfill.
Circular Economy Strategist 2:Awareness and knowledge about circular fashion is important. But it is not necessary to create a new system.
Sustainability Consultant 1: If you have awareness and knowledge about not only circular fashion but also about the impact people would certainly act differently.

Sustainability Consultant 2: Just the criteria of sustainability itself does not sell.

Circular Fashion Entrepreneur 1: Awareness and knowledge about circular fashion plays an important role but it is difficult to understand where it is available.

Circular Fashion Entrepreneur 2: Knowledge about sustainable and circular fashion in general is limited.

Fashion Designer 1: Awareness and knowledge in the first high quality loop are not that important. We can sell people these high-quality clothes just because of the brand's experience although they do not even need to care about circular fashion. And new awareness and knowledge about circular fashion would not be the main reason for the younger groups to buy from the second loops, because they will consume second-hand because it is inexpensive.

Price

Consumer 1- Price of clothing depends on the income and age. Price of clothing in that sense depends on what people are buying, however, if somebody buys from H&M or Primark, they might not be able to afford sustainable clothing.

Consumer 2- I do think that is a factor. In general, environmentally friendly products, is perceived as being more expensive.

Non-Consumer 1- If the price difference between the original piece of fashion and the second-hand piece of fashion is minimum or very negligible difference. I would personally prefer the new one.

Non-Consumer 2- If the cost for buying the same clothes with recycled materials is doubled/tripled, I personally would have doubts over consuming it.

Circular Economy Strategist 2- In terms of price, I do not think if sustainable fashion is cheaper, it will sell more. It is just a mind shift that you can make.

Sustainability Consultant 1- I think if the price is lower, consumers will buy more.

Circular Fashion Entrepreneur 1- It has a negative influence. Higher the price, lower will be the consumption of circular fashion.

Circular Fashion Entrepreneur 2- If I pay a higher price, I will consume it much more mindfully. Because an expensive jacket is worth more to me than a than a cheap one. Price positively influences my own consumption pattern, up to a maximum because once it is out of my threshold, it no longer becomes an option for me to purchase.

Fashion Designer 1- The price would depend on the loops.

Fashion Designer 2- Price of the garment has an influence. The same white t-shirt would be way cheaper in Zara as compared to a sustainable store. This might create some resistance on the instinct to buy because the sustainable clothing is expensive.

Product attributes: Quality, Style, Variety

Consumer 1: Sustainable fashion clothing has really great quality.

Consumer 2: Product attributes like quality, style and variety influences your consumption behaviour. If the product is something you do not like, then you will not lease or rent it.

*Non-consumer 1***:** For second-hand clothing, I expect at least a usable quality. When it comes to renting, I would prefer the latest styles.

Non-consumer 2: Attributes play an important role. I do not think brands face difficulties to make recycled materials look fashionable.

Circular Economy Strategist 1: Many people have thought of sustainable clothing as hippy clothing. Recycled fibers are not as strong, they do not last as long, and the color runs out quicker. Quality wise, recycled fibers are not as strong. So, there's issues with durability and recycled fibers breaks down faster.

Circular Economy Strategist 2: There are very few brands that make sustainable fashion So there is no sustainable fashion for every style, body type, age. Most of the brands make things that I would not wear. Sustainable clothes for the younger generation are available but for women beyond 35, it is very difficult to buy well-made, well fitting, sustainable fashion. Quality style, and variety is a huge issue right now.

Sustainability Consultant 1: Before when something looked recycled, second-hand or reused, people were less likely to buy it as quality is an important factor. However, Nowadays, people are into vintage due to a different style.

Circular Fashion Entrepreneur 1: Quality is lower in most recycled items. Recycling damages the fibers, in general. So, lack of quality has a negative influence on the consumption. Circular products obviously have less variety as compared to mainstream fashion.

Circular Fashion Entrepreneur 2: In terms of quality, recycled clothing has less quality. Quality is determining feasibility for circularity. A style like a timeless design would positively influence circularity. Circularity would be positively influenced by high quality and timeless design and material recyclability would be positively influenced by a lower variety of items in the clothing.

Fashion Designer 1: Providing variety in circular clothing is difficult. Right now, there is lack of style and trends.

Fashion Designer 2: Sustainable fashion produce more quality garment. Style could be in terms of timeless fashion, buying basic clothes that would not go out of fashion also form a part of the circular system. But, variety becomes an issue in the circular fashion system. However, brand like H&M encourages the consumers to return their used clothes and get compensation.

Researcher: Fashion is identity. Depending on what you think circular fashion is, for example, renting clothes through clothing libraries, one can have a lot of variety within your wardrobe without owning them.

Culture

Consumer 1: In developing nations buying firsthand clothing is portrayed as being able to afford to buy new things, because secondhand was their reality without choice.

Consumer 2: Buying is associated with culture, especially with status and some people buying something is a way for them to show that there is wealthy.

Non-consumer 1: My family believes consuming used-clothes brings bad-luck. Hence, I never consumed second-hand clothing.

Circular Economy Strategist 1: It all depends on who you hang out with, and what is available around you, and this influences you and how you buy.

Circular Economy Strategist 2: The culture of your social group influences it. If your friends and family is not interested in it, you probably do not go to shops that produce the sustainable clothing.

Sustainability Consultant 1: The culture you are surrounded with will have an influence on knowing about it and having interest in it.

Sustainability Consultant 2: To fit a group that you want to belong, culture is a very important aspect.

Circular Fashion Entrepreneur 1: People in US people do buy secondhand clothes, and it really is not because they have low income. But back in China, buying secondhand clothes is kind of a degradation.

Circular Fashion Entrepreneur 2: If you see the Dutch, consumers would be much more willing to switch to a recycled products whereas the culture in Italy would be more hesitant, to circular consumption.

Fashion Designer 1: I do not think it matters.

Fashion Designer 2: Culture plays an important role. For example, in Italy, people are very to historic brands, and they always trust new brands and innovation. In Netherlands on the other hand, new brands with approach to ethics are very welcomed.

Availability

Consumer 1: People living in small towns do not have a choice but to buy something online. And because sustainable clothes are expensive, one might not want to buy without trying.

Consumer 2: Sustainable and circular fashion should be available to everyone and not only to a specific group as it is mostly expensive.

Non-Consumer 1: The availability of sustainable or circular fashion depends upon the awareness of the second-hand shops in the locality, these two quantities are interdependent. If I am not aware of them, I would say they are not accessible.

Non-consumer 2: I am not going to especially search and buy clothes that are circular.

Sustainable Consultant 1: When the availability is easy and accessible, and the consumers know how to find it, it influences their consumption. So, it positively affects the consumption.

Circular Fashion Entrepreneur 2: It is difficult to determine the definition of a circular product. Because it also has a lot to do with what you do with it, where you buy it, how you maintain it and where you repair it. From that perspective, the availability of circular products might be limited at this point.

Fashion Designer 1: Transparency is important, because perhaps they are available, but we do not know about the level of sustainability or clarity on the usage.

Fashion Designer 2: I do not think there is a lot of availability of circular fashion. The availability is a big obstacle. Moreover, I am not aware of an e-commerce that is just meant for sustainable brands.

Transparency

Consumer 1: Regarding transparency, I do not think a lot of people care.

Consumer 2: If you are talking to the green group, they would be quite critical and would want to know all the details related to production, but the mass would not be so much interested.

Non-consumer 1- I think the lack of transparency will have a negative impact. Because if you are not transparent about your manufacturing of the clothes, then customers would be skeptical about buying it.

Non- consumer 2: I do not think a big group of people going to really dig into the transparency aspect.

Circular Economy Strategist 1: When I recycle the clothes, I put them in a green bin. And I also think there should be more ways to be able to pass on clothing like donation or charity. You must be on social media to know these things and I am not on Facebook. So, it is word of mouth for me. There are lack of opportunities.

Circular Economy Strategist 2: For the group of people that is consuming sustainable fashion, transparency is important. And transparency, and circularity go hand in hand.

Sustainability Consultant 1: Transparency also increases awareness which is important to change consumption patterns. So, if brands are transparent, people get more aware. And with that awareness, they can make different choices.

Sustainability Consultant 2: Transparency is never the first reason to buy something. People will only buy fashion products in relation to quality, style, variety.

Circular Fashion Entrepreneur 1: It is hard to trust claims, even with certificates. More transparency will influence positively the use and consumption.

Circular Fashion Entrepreneur 2: There is marketing budget being invested into communicating sustainability to customers. However, greenwashing is really destructive in general, because it changes the perspective of the market causing skepticism which is one of the biggest challenges that brands must overcome.

Fashion Designer 2: There is not so much transparency for big brands. I believe that they use it as a marketing strategy to attract more consumers.

Researcher: Transparency is important. But we need to find a way to make sure that the right information reaches the right consumer. And currently as there is no lead in this, companies are greenwashing.

Values

 a. Egoistic

Consumer 1: Sometimes consuming sustainable clothing is just to make yourself feel better. For example, people do not use leather because they feel, they care about the animals and the environment.

Sustainability Consultant 1: Egoistic value plays a role, as it adds to an individual's social status.

Non-Consumer 2: If you go more towards Asia, people care how other people think of them and they want to have certain status in the inner society.

Circular Economy Strategist 1: The fashion influencers on social media influence a lot of young kids and it is not always just to be ecofriendly. It is probably to gain as many views and shares.

Researcher- Some people feel comfortable walking around on the street with a with a high-end brand fashion bag.

 b. Biospheric

Non-consumer 1: People are convinced on the point that buying secondhand clothes will save environment.

Non-consumer 2: The values (biospheric and egoistic) depend on a culture for instance, for example, in the Netherlands, people are very individual. They do not really care how people look at them. There is no pressure from society.

Sustainability Consultant 1:The biospheric value plays a role for people who are already very aware and eco-friendly in general.

Circular Fashion Entrepreneur 2: Our rational decision making now, is a lot more biospheric.

Fashion Designer 2: There is a group of people who would consume based on biospheric value because they are really committed in the topic.

6.6. Additional hindering factors

The researcher aimed to identify additional factors that impede consumption through the response of the interviewees. The responses are as follows-

Consumer 1: Firms that produce these circular products are small businesses, so they do not have the marketing powers, like Zara or H&M does.

Non-consumer 1: I am skeptical about buying second-hand clothing due to hygiene reasons.

Non- consumer 2: Hygiene plays an important role, because second-hand or recycled need to be cleaned thoroughly.

Circular Fashion Entrepreneur 2: I tried to buy secondhand. But one cannot buy a specific brand when consuming reused clothing.

Fashion Designer 1: Lack of marketing is one of the main factors.

7. Analysis

In the previous chapter, through the empirical data, it has been identified that there exist different circular fashion consumption methods. These will be elaborated more in this chapter. Also, the opinions of the respondents varied depending on the circular fashion consumption methods and also the influence of factors on consumption. This chapter of the study will analyze the influence of the factors based on the consumption method and formulate propositions that could be tested in future. This will be done by quantifying the primary data collected so that potential barriers can be identified.

As there exist diverse interviewee perspectives on circular fashion consumption methods, the researcher has decided to associate the consumption methods based on the 9R framework proposed by Potting et al. (2017). It was decided to use the 9R framework as this provides information about different levels to achieve circularity and also because it was suggested as a medium to achieve circularity by four interviewees.

Circular Economy	Smart product use and manufacture	R0 Refuse
		R1 Rethink
		R2 Reduce
	Extend lifespan of product and its parts	R3 Reuse
↑		R4 Repair
		R5 Refurbish
		R6 Remanufacture
Linear Economy		R7 Repurpose
	Useful applications of materials	R8 Recycle
		R9 Recover
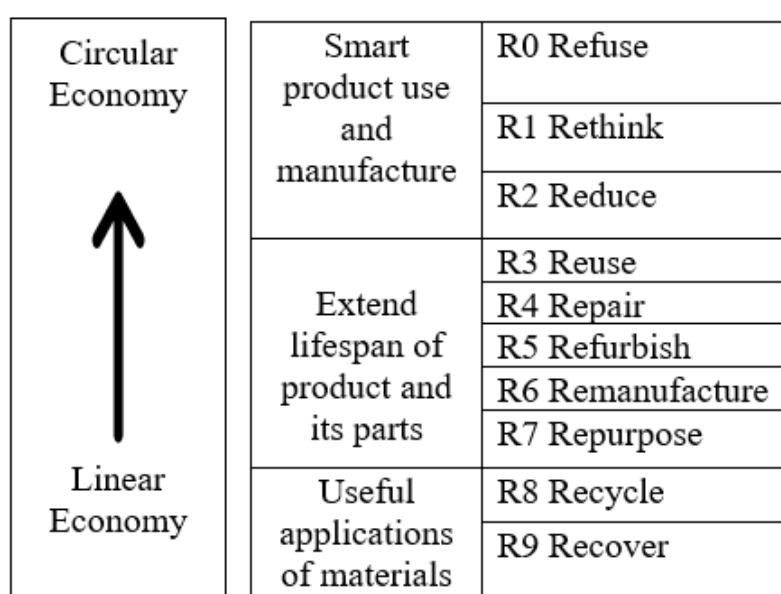
As stated above, some interviewees' (4 out of 13) emphasized the significance of the 9R circularity framework as an essential criterion for consumption. Potting et al. (2017) created this framework at the request of the Dutch Ministry of Infrastructure and Environment, Netherlands. This framework helps to measure the progress of CE transitions in product chains. Through this framework, the researcher will try to group the consumption methods based on the level of circularity associated with the consumption.

7.1. Consumption methods based on the 9R framework.

As already mentioned, the consumption methods are grouped into the R-strategies using the obtained empirical data in Chapter 6. Grouping consumption methods based on the R-strategies would also help in drawing similarities in the direction of influence.

The methods suggested by the interviewees did not necessarily require the consumers to buy. The consumers could also contribute towards circularity by reducing the consumption, and by sharing, donating and repairing clothing instead of buying. As there exist diverse methods, various

methods through which consumers could contribute towards circularity have been grouped based on the 9R strategies. The identified methods through which a consumer could contribute towards circularity include refusing to buy, sharing, donating, reducing consumption, buying sustainable clothing, consuming reused in the form of second-hand, rental, vintage, upcycling and finally buying recycled/ recyclable clothing.

In the following tabulation, the interviewees are represented as: Consumers: C1, C2, Non-consumers: NC1, NC2, CE Strategists: CES1, CES2, Sustainability Consultants: SC1, SC2, Circular fashion Entrepreneurs: CFE1, CFE2, Fashion Designers: FD1, FD2 and Researcher: R. The tabulation has information of the consumption methods that have been grouped per R-strategies along with the comments by the interviewees which act as the reasoning to consider the respective consumption method.

Category	Strategies	Consumption Method	Interviewee	Comments
Smart product use and manufacture	R0 Refuse		C2	Refuse usage of new items.
			R	Start with refusing fast fashion consumption.
	R1 Rethink	**Sharing**	CES 2	Exchange clothes at Marktplats or Vinted.
			CFE2	Swap Shop idea is where the company swaps the clothing amongst its consumers.
		Donate	FD2	I donate clothes.
	R2 Reduce	**Reduce consumption**	C2	Reduce consumption behaviour.
			CES2	Consumers should buy a regular jean and wear it forever.
			SC1	Decrease resource use.
			FD1	It is important to keep your clothes for a long time.
		Reduce consuming fast fashion and buy Sustainable clothing	SC2	Some brands are on the forefront of sustainability, Patagonia, for example.
			CFE1	Buy better quality sustainable clothing that might last longer.
			FD1	Buy a good quality sustainable clothing.
			FD2	Consume good quality clothing so that it could be used for years.
Extend lifespan of product and its parts	R3 Reuse	**Vintage**	C1	Vintage is more circular than second-hand.
		Second-hand	NC2	Consumers can buy second-hand.
			SC1	Use Vinted app for reselling clothes.

			SC2	Secondhand chain could collaborate with known brands.
		Rental/ Lease model	CFE1	On the Vinted app, used clothing can be sold. LENA, for example, in Amsterdam allows clothing leasing.
			SC2	One could pay the rental fee and avail different types of clothing. For example, Mud Jeans.
			CFE2	There is an online platform Vinted in Europe, big in the Netherlands as well, which is all about reselling your old clothing.
			R	There are a few clothing libraries in Hague, Arnhem, and Amsterdam mainly. And it is a way to make sure you consume less but keep that interesting change of clothes.
	R4 Repair		CES1	Old clothes can be repaired.
			CFE 2	Garment repair and tailors have a crucial role to play in circularity.
	R5 Refurbish		CES1	Old clothes can be refurbished.
	R6 Remanufacture	**Upcycle**	`CES1	Old clothes can be made into something new. For example, jeans into skirt.
			CFE1	There is a model, Vanhulley, for example, where you can recycle your clothing.
Useful applications of materials	R8 Recycle	**Recycled and Recyclable clothing**	C2	Recycle clothes when they wear out.
			NC2	The circular clothing has recyclable materials.
			CES2	MUD jeans and Brightloops sell recycled clothing.
			CFE 1	MUD jeans make jeans using recycled materials.
			CFE2	There are a lot of start-ups that have a deposit system.
			FD1	Recycling starts with the raw material entering the circularity loop.For example, super high-quality products could be in the first loop, and then the second loop that will be slightly degraded.

			FD2	Clothes can be recycled if they are made of a single material.

Table 2: Consumption method based on the 9R framework.

After grouping the consumption methods based on the R-strategies, it was observed that interestingly, the findings differ per R-strategy. For instance, a consumer can attain maximum circularity by first refusing to consume new clothing, especially when the items are fast fashion. This could be grouped under the R0 strategy that suggests refusing to consume new products (Potting et al., 2017). If a consumer decides to refuse consuming, it is obvious that no raw materials would enter the circularity loop in the first place. However, this is an ideal condition, people would not stop consuming clothes.

Some of the interviewees suggested sharing as an option of interchanging clothes with other customers without owning them. This could be done on online platforms like Vinted, Marktplats or swap shops. This way to achieve circularity has been grouped under the R1 Rethink strategy which is switching to alternative methods without actually paying for the clothing.

The third R strategy, 'Reduce', mainly suggests resource utilization by reducing natural resource consumption, avoiding items that are not eco-friendly, and consuming sustainable items. For example, C2, CES2, SC1, FD1 indicated that consumers should reduce their consumption behaviour and try using their clothes for a long time. Interviewees', SC2, CFE1, FD1, and FD2 emphasized high-quality, sustainable clothing usage. According to them, it is vital to have quality sustainable clothing rather than consuming fast fashion that harms the environment.

Vintage, Second-hand, and rental models align with the framework's R3 strategy, which focuses on the 'Reuse' aspect. Vintage consumption was not a part of the literature study and hence was added as a consumption method as suggested by the C1 interviewee. Vintage clothing represents its producing era, which might be before 20 to 100 years of the contemporary time. The clothing strongly reflects styles and trends associated with that era. Moreover, vintage clothing is known for its quality. The definition of the term varies as every decade might have their new items to fit into the Vintage category (DeLong et al., 2005). C1 stated that consuming vintage clothes is more circular than consuming second-hand. However, it is clear from Table 2 that NC2, SC2, FD2 are in favor of second-hand clothing consumption to achieving circularity. They suggested second-hand consumption stores such as Zeeman in the Netherlands and online platforms such as Vinted, which could be used for second-hand consumption. Another type of consumption method that could align with the Reuse category is the Rental model. CFE1, CFE2, SC2 and R considered this model as a system to contribute towards circularity. They suggested various platforms, online and offline, to access rental clothing. This included Vinted applications and organizations like Mud Jeans and LENA.

The fourth R strategy is 'Repair'. CES1 and CFE2 suggested that garment repairs have a crucial repair to play in circularity. Appendix C, consisting of interviews of CES1 and CFE2, suggest that children should be taught to repair garments in school, and people tend to ignore the repair aspect in circularity.

CES1 and CFE1 suggest Upcycling to consume circular clothing. The upcycled fashion was not considered as a consumption method for this study as none of the interviewees associated the influencing factors with the consumption method. However, it is a sustainable design alternative that allows reuse techniques to be used for maximum social and environmental advantage. Used

clothing is sourced for the manufacturing of newly designed fashion products (Han et al., 2016). As mentioned in the Appendix, CFE1 suggested a model Vanhulley, which enables the upcycling of old clothes into a new one that could be used to gift someone.

To contribute towards circularity, it is also vital to consume recyclable clothing. Recycling ensures that the circularity loop closes. According to CFE2, recyclable clothing is chemically or mechanically recyclable. The empirical research data of CFE1, FD1, CES1 suggest that for an item of clothing to be recyclable, it should not be made of mixed fabric but of a single material. It should not have attached metals or decorations. Most of the respondents, 8 out of 13, suggested Mud Jeans as one of the most popular organizations that make recycled clothing. Moreover, CFE1 has a business of manufacturing clothing that are recyclable.

FD1 suggests that recycling starts with the raw material entering the circularity loop; the materials are of the highest possible quality to keep it circling for as long as possible. For example, super high-quality products could be in the first loop, and then the second loop that will be slightly degraded. The clothing consisting of lower quality materials enter the second loop as the quality of the produced clothing through these materials is slightly degraded.

7.2. Factors influencing different circular consumption methods.

It has been observed in Chapter 6, that opinions of the interviewees on circular fashion consumption was not holistic although similar. In section 7.1, researcher grouped all the identified circular fashion consumption methods based on the 9R strategies. Thus, in this section, the researcher will try to identify the influence of the factors based on the consumption method.

It was observed that all the interviewees did not suggest the same consumption method. Hence, when their opinion on the identified factors were asked, they associated the factors with their suggested consumption method. Thus, in this section, the researcher would list down all the identified consumption methods through the empirical data and the opinions of the factors associated with the consumption method. This step has been taken so that all the methods to achieve circularity suggested by the interviewees along with the influencing factors are covered in the study. After, this is done, the researcher will try to identify similarities in the influence per R strategy so that a generalized influence can be obtained and barriers in consumption associated with the R-strategies can be identified.

As already mentioned, the factors identified through literature are age, gender, income, awareness and knowledge, price, product attributes (quality, variety, style), transparency (no greenwashing) and values (biospheric and altruistic) and the additional identified factors include marketing power and brand. In the below table the consumption methods grouped under the particular R strategy is listed along with the factors that could play a role in its consumption.

Consumption Method	Factors	Interviewee	Influence
Sustainable Clothing (R2 Reduce strategy)	Age	C1	Gen Z might not have the money to spend on sustainable fashion.
		C2	When people have an income, they can afford high quality sustainable fashion.

			CES1	Younger consumers are looking for traceability.
			CES2	Younger people learn in school about sustainability.
			CEF2	In early 20s, people might shift to environment-based consumption where they might look for quality, and longevity.
			R	Consumers with the higher age cosume because it is more expensive
		Gender	NC1	Women are into circular clothing.
			C1	A lot of marketing is focused on women.
			CES1	Women tend to look for more sustainable garments. Females are more compassionate.
			CES2	Fashion influencers on Instagram are all women.
			R	We do not have a lot of sustainable options for men.
		Income	C1	If you do not have the money, you cannot buy sustainable fashion.
			NC2	People with high income might want to bring something to society by consuming sustainable.
			CES2	Sustainable fashion is more expensive.
			SC1	If you have a high income, you may buy expensive new clothing like high quality sustainable fashion.
			CFE2	With more income, more spending freedom you have.
			FD2	Income is one of the most important factors as sustainable clothes cost more
			R	Sustainable fashion costs much more as compared to fast fashion.
		Awareness	C1	People do not know it exists unless you are in the world of sustainability.
			NC2	Only people who are eco-conscious consume sustainable clothing.
			CES2	Not everyone should have that knowledge or awareness.
			CFE2	Knowledge and awareness about sustainable fashion in general should not be limited.
		Price	C1	Anything that is sustainable is more expensive.

		C2	Environmentally friendly products are perceived as more expensive.
		CES2	I spend money on my clothing because I buy less but ensure good quality.
		CFE2	Sustainable clothing is perceived as being more expensive but provides a true price.
		R	Consumers would not want to pay higher price for sustainable clothing..
	Product attributes	C1	Clothing of all sizes is not available.
		C2	People find it difficult to portray their image due to lack of variety.
		CES1	Many people have thought of sustainable clothing as hippy clothing.
		CES2	Sustainable fashion for every style, body type, age does not exist.
	Culture	C1	In developing nations, buying firsthand clothing is portrayed as being able to afford to buy new things.
		C2	For some people buying something is a way for them to show that there is wealthy.
		CES2	Culture of your social group influences
	Availability	C1	People living in small towns do not have a choice but to buy something online.
		C2	Sustainable and circular fashion should be available to everyone and not only to a specific group.
		FD2	In the Netherlands if you are looking for a sustainable brands shop, you must do some research. And there does not exist any ecommerce website meant only for sustainable clothes.
		R	It requires effort it to search.
	Transparency	C1	Not a lot of people care.
		C2	Mass would be interested in availability and pricing and not transparency.

		NC2	I do not think a big group of people going to really dig into the transparency aspect.
		CES2	Circularity is limited due to lack of transparency.
		R	Brands are not transparent due to their long value chain.
	Values	SC2	Values depends on a culture. The Dutch are very individual but in Asia people care how other people think of them.
		CES1	The fashion influencers on social media influence a lot of young kids. Going ecofriendly is sometimes to get many views and shares as they on social media. So *egoistic* value plays a role.
		NC1	Most people I know consume sustainable fashion for biospheric reasons and not for egoistic reasons.
	Marketing power	CES2	Firms that produce these circular products are small businesses, so they do not have the marketing powers.
		R	A lot of organizations like H&M use marketing tools to make sure that consumers think it is sustainable, which a lot of times is the greenwashing.
Vintage (R3 Reuse Strategy)	Awareness	C1	Lack of awareness causes less consumption.
	Price	R	Once you find a suitable product, it might have a high price and people would not buy the clothing due to the high price.
	Product attributes	C1	Although, it is old, it has a good quality.
		SC1	People are into vintage due to a different style.
		R	It is a way to stand out, without following the trends of the high street.
	Availability	R	I would buy more vintage if it were easily available.
Second-hand (R3 Reuse Strategy)	Age	C2	Age group of 12-17 consider secondhand because they are dependent on their parents.
		NC1	Age of consumer is a neutral factor.
		SC1	Younger generation X, Y, Z is much more into awareness about climate and the impact of fashion.

		SC2	Younger people from the millennial generation commonly make sustainable choices as compared to the older generations.
	Gender	NC1	Females would have a positive impact in the consumption as they are trendier.
		SC1	Gender could be considered neutral.
	Income	NC1	If I earn low, I will buy a secondhand cloth.
		NC2	People with lower income consume secondhand because they have no option.
		SC1	If you have a lower income you take the time of finding second-hand items.
		SC2	People with low incomes can consume second-hand clothing
	Awareness	NC1	More awareness will help circular fashion grow.
		SC1	If you have awareness and knowledge about not only circular fashion but also about the impact people would certainly act differently.
	Price	C1	Affordable
		NC1	Price of the garment would put a positive impact because it would be lower than the original cloth.
	Product attributes	C1	Does not last long due to poor quality.
		NC1	Quality is not expected to be very high. The style would be old-fashioned and with limited variety.
		SC1	Getting clothes in terms of color or type preference is not easy.
	Culture	NC1	According to my family, buying used clothes brings bad luck.
		CFE1	People in US people buy secondhand clothes and not because they have low income. But in China, buying secondhand clothes is looked like a degradation that you are buying a used item
	Availability	C2	Availability of circular fashion is very limited. Most circular products happen to be online which is not convenient.
		NC1	People are not aware from where to buy the clothing.

		SC1	Not every type of clothing would be available in the second-hand market.
	Transparency	NC1	Customers would be skeptical about buying due to lack of transparency.
		SC1	The minimal level of transparency causes lack of awareness which is important to change consumption patterns.
		FD1	There is lack of clarity on the level of sustainability.
	Values	NC1	Biospheric value plays a role. People will consume it to save the environment.
		FD1	Both biospheric and egoistic values apply.
	Hygiene	NC1	I am skeptical about the hygiene that is maintained.
		NC2	I am not comfortable to buy secondhand clothes, for hygiene reasons
	Brand	CFE2	You cannot find a specific brand and if you find it, it might be damaged.
Rental (R3 Reuse Strategy)	Price	C2	Renting clothes is expensive. In terms of paying monthly fee.
	Product attributes	R	We do see a lot of quality and variety.
	Availability	SC2	It is not easily available.
Recycled/ Reecyclable clothing (R8 Recycle strategy)	Age	NC2	Younger generation has more acceptance of this concept.
		CFE1	Younger population is more aware of sustainability.
		FD1	For the high-quality recycled clothing people aged 30 plus with money to spend would spend on it. For the second subsequent loop the age could be younger.
	Gender	FD1	Gender is neutral.
		FD2	Gender does not play a role.
	Income	CES1	An individual must pay more for recycled clothing that lasts longer and not everybody has that has money.

		CFE1	As recycled fashion is more expensive relatively. more income will help to buy more circular items.
		FD1	Income should be high if the consumer wants to buy the high-quality recycled clothing however for the subsequent loop lower income should do.
	Awareness	CES1	The Fashion for Good in Amsterdam is an opportunity to bring about the awareness.
		CFE1	People are unaware about the existence of recycled clothing and it is difficult to understand where it is available.
		FD1	It is possible to sell people high-quality recyclable clothes because of the brand's experience.
	Price	NC2	If buying the same clothes with recycled materials is expensive, I would not consume it.
		SC2	People with higher incomes, have more abilities to adopt it.
		CFE1	Recycled clothing is more expensive than non-circular items. Higher the price, lower will be the consumption of circular fashion.
		FD1	Price would depend on the quality of recycled clothing.
		FD2	You might see a similar clothing in Zara and another brand is organic and recyclable, The same cloth would be way cheaper in Zara.
	Product attributes	CES1	Recycled fibers are not as strong, they do not last as long, and the color runs out quicker. So, there's issues with durability and recycled fibers breaks down faster.
		SC2	People will only buy recycled fashion products in relation to quality, style, variety.
		CFE1	The quality is lower in most items. The lack of quality has a negative influence on the consumption.
		CFE2	Regular clothing has better quality as compared to recycled clothing. Also, Circular design limits creativity, because it asks you to use materials with fewer colors. Material recyclability would be positively influenced by a lower variety of items in the clothing.

		FD1	Recycled clothing does not look good. It tends to have less performance in terms of stretchability, retaining shape.
		FD2	Variety becomes an issue in the recycled fashion system.
	Culture	CES1	It depends on the peer group.
		CFE2	Dutch consumers would be much more willing to switch to a recycled clothing.
		FD1	I do not think it matters.
		FD2	In Netherlands, new brands with approach to ethics are very welcomed.
	Availability	NC2	I am not going to specially putting extra effort in it.
		CFE1	Recycled clothing is not easily available.
		CFE2	I think a portion of the Dutch market would be willing to buy circular alternatives if it is as easily available.
	Transparency	CFE1	It is hard to trust claims, even with certificates. More transparency will positively influence consumption.
		CFE2	Skepticism originates from faulty claims in sustainability, and lack of understanding of certification standards.
	Values	CFE1	Biospheric value is currently dominant.
		CFE2	Rational decision making.
	Marketing	FD1	Brands are not organized, not optimized for a better on demand proposition,

Table 3: Factors influencing different circular consumption methods.

As mentioned, the above table lists all the identified consumption methods along with the opinions of the interviewee on the factors that could be associated based on the consumption method. It is now important to identify the influence of the factors with respect to the R-strategies so that eventually. propositions could be developed and barriers in consumption of circular fashion could be identified. These propositions can be considered as a set of hypotheses that could be tested in future studies.

7.3. Relationship between the identified factors and R strategies

This section aims to identify the influence of the factors with respect to the R-strategies. This will be done by quantifying the data acquired through the interviews. This needs to be done to summarize and generalize the relationship between the influencing factors and the R strategies based on the various consumption methods to develop propositions and identify the potential barriers. The factors' influence can be considered the first indication due to a limited number of interviews conducted.

In the below tabulation, the R strategies have been arranged with decreasing order of circularity. Specifically, R0-Refuse, R1-Rethink, R2-Reduce, R3-Reuse, R4-Repair, R5-Refurbish, R6-Remanufacture, R7-Repurpose, R8-Recycle, R9- Recover. B, E under the values column represents Biospheric and Egoistic values. As displayed, the list of strategies in the table does not consist of the Refuse, Rethink, Repair and Refurbish strategies. This is because the interviewees did not explicitly express the association of the factors with the consumption methods corresponding to these strategies.

	Age	Gender	Income	Awareness	Price	Product Attributes			Culture	Availability	Transparency	Value		Marketing	Brand	Hygiene
						Quality	Style	Variety				B	E			
R0 R1	Some interviewees mentioned the consumption methods based on the R0- Refuse and R1-Rethink strategies but did not associate it with any factors.															
R2	+/-	Women	+	X / +	✓/-	+	+	+	✓	+	X/+	✓	✓	+		
R3.	+/-	Women	+/-	X/+	-	+	+	+	✓	+	✓/+	✓	✓		+	+
R4 R5 R6	Some interviewees mentioned the consumption methods based on the R4- Repair, R5-Refurbish and R6-Remanufacture strategy but did not associate it with any factors.															
R7	No consumption method was associated with R7 Repurpose strategy based on the interviews.															
R8	+/-	x	+	✓	-	+	+	+	✓/X	+	X/+		X	+		
Total (+)	2		10	8		10	4	6		11				3	1	2
Total (-)	7		4		7						6					
Total (X)	1	2		2					1		4			1		
Total (✓)	3 (20s)	Women (5)			4				3			6	4			

Table 4: Influence of the factors on the R strategies

The tabulation shows the influence of the factors on the consumption method associated with the R strategies according to the interviewees. This table has been created using the data derived in sections 7.2 and section 7.3. The influence of the factors based on the strategy has been represented by +, -, X and ✓ symbol, where + signifies positive influence, - signifies negative influence, X signifies no influence and ✓ signifies the presence of influence without explicitly stating the direction.

The interviewees had a diverse opinion on the influence of the factors as their perception of the consumption methods to attain circularity varied. Moreover, they also had a different perception of the circular consumption method. Hence, generalizing the influence would be a challenge. However,

a proposition could be built providing the first indication. Below, the influence of the factors will be summarized.

As shown in the below table, the researcher has tried to quantitatively measure the direction of the influence by listing the number of interviewees supporting positive influence (+), negative (-), no influence (X) and presence of influence (✓) with respect to the R-strategies and the factors.

Now, propositions will be formulated as the first indication based on the data acquired through the interviews and the quantification. The reasoning of the developed propositions has been elaborated below-

Age
The interviewees had the most varied opinion regarding the 'Age' factor based on the various consumption methods. As mentioned in Section 5.6, R2 refers to the Reduce strategy (Potting et al., 2017). R2 strategy corresponds to reducing consumption of fast fashion and consuming sustainable fashion. According to C1, younger people are more aware of sustainable fashion. CES1 and CES2 state that the younger generation learns about sustainability in school and look for traceability in terms of where their garments come from, whereas C2 and CFE2 stated that people in their 20s consume sustainable fashion as this is the age when they start earning and can afford high-quality, sustainable fashion. They shift to environmental-based consumption at this age and look for quality and longevity. According to R, only consumers of higher age will buy sustainable clothing because it is expensive, and the younger generation would not afford it. Moreover, according to CFE1, sustainable fashion would be consumed mainly by middle-aged consumers as it is expensive, and they would afford it.

R3 Reuse strategy corresponds to vintage, secondhand and rental consumption, according to the interviewees. No interviewee mentioned the influence of age on vintage and rental fashion consumption. However, according to C2, SC1 and SC2, the younger generation, X, Y, Z, would consume secondhand clothing as they are dependent on their parents for money and would not afford new clothing. According to SC1 and SC2, the younger generation will be more aware of the environmental impact and fashion impact and hence would make a better sustainable choice by consuming secondhand clothing. Moreover, according to NC1, age does not influence consuming secondhand clothing. CFE1 stated that the youngsters would prefer secondhand clothing as it is available at low cost and affordable.

R8 Recycle strategy corresponds to recycled and recyclable clothing. According to NC2 and CFE1, the younger generation will consume more recycled or recyclable clothing due to more acceptance of this concept and awareness of sustainability.

Based on the above information, it has been observed that a generalized view cannot be formed based on the age factor. According to most of the interviewees, young consumers are the primary target market for secondhand and recycled fashion and the older generation for sustainable clothing. Therefore, the following proposition is formulated based on the above findings:

P1: Younger generation consume secondhand fashion
P2: Older generation consume sustainable fashion.
P3: Younger generation consume recycled fashion.

Gender
The interviewees who commented on the age factor corresponding to the R2 strategy stated that women consume more sustainable clothing. They reflected on various reasons for this. The main

reason being the marketing focus on women. Moreover, CES1 stated that women tend to look for more sustainable garments as they are more compassionate. According to R, there is a lack of sustainable options for men now. The clothing libraries in the Netherlands have unisex items but not specifically for men. Also, CES2 added that men are usually loyal to brands. Hence, they could be a good target group for sustainable fashion.

No interviewee mentioned the influence of gender on vintage and rental fashion consumption corresponding to the R3 Reuse strategy. According to SC1, gender could be considered a neutral factor in secondhand consumption, whereas according to NC1, women would consume more secondhand clothing as they are trendier.

According to FD1, gender does not influence recycled or recyclable clothing consumption. However, for most interviewees, women are the primary target market for circular fashion, and men could be a potential circular fashion market. Therefore, the following proposition is formulated based on the above finding:

P4: Females consume more circular fashion.

Income
Income has been considered as the most important influencing factor for circular fashion consumption by the interviewees. For sustainable fashion consumption, which corresponds to the R1 Reduce strategy, higher-income would mean higher consumption. This is because, according to C1, NC2, CES2, SC1, CFE2, FD2 and R, the high income of a person would enable a person to buy sustainable clothing as it is expensive. High income would provide more spending power to an individual, and the presence of high-quality materials in the clothing makes it costly compared to fast fashion. Hence, sustainable fashion is not available at an affordable price, which would act as a barrier to consumption.

Vintage, Rental and Secondhand clothing corresponds to the R3 Reuse strategy. According to C1, vintage clothing is usually of high quality and not available at an affordable price. Moreover, C2 states that Rental clothing has a high monthly fee for access to clothing. Hence, only people with high income would be able to afford Vintage and Rental fashion. On the other hand, an individual with a high income would not consume secondhand fashion. According to the interviewees', people with low income would buy secondhand clothing as they would get it at a lower price and an affordable range.

Recycled clothing corresponding to R8 Recycle strategy is relatively more expensive, and according to CES1, CFE1 and FD1, not everybody has that money to afford this type of clothing. Moreover, according to FD1, good quality recycled clothing is only available at a higher cost.

Therefore, the following proposition is formulated based on the above findings:

P5: High income facilitates circular fashion consumption.

Awareness
According to the interviewees, most people are unaware of the concept of circularity in the fashion industry. According to the research by CFE2, people have limited knowledge about sustainable fashion. According to CES1, people do not realize that piles of clothes go into the landfill and are unaware of circular clothing. According to NC1 and SC1, more awareness about circularity and circular fashion will help circular fashion consumption grow. However, on the other hand, NC2, C1 and CES2 state that awareness about circularity does not play a role in sustainable fashion

consumption. Only people who are eco-conscious or belonging to the sustainable fashion industry consume sustainable clothing. Hence, according to most interviewees, awareness and knowledge about circular fashion will cause more circular fashion consumption. However, the awareness aspect is currently absent and could act as a barrier to circular fashion consumption.

The following proposition is proposed based on the above findings:

P6: Awareness and knowledge about circular fashion enables circular fashion consumption.

Price

For sustainable clothing, corresponding to the R2 Reduce strategy, price is considered an essential influencing factor. According to C2 and CFE2, sustainable clothing is perceived as expensive but provides an accurate price as it is environmentally friendly and ethical in paying the workers fair wages. However, as it is costly compared to fast fashion, C1 states that sustainability is very elitist as not everybody can afford it. Moreover, R suggests that not all consumers want to pay a higher price for more sustainable clothing. Hence, high price hampers sustainable fashion consumption.

Vintage, secondhand and rental clothing corresponds to the R2 Reuse strategy. According to R, as vintage clothing is expensive due to high quality, people would eventually not buy it. In contrast, secondhand clothing is affordable. According to C1 and NC1, it is available at a price lower than the original product. However, as a high monthly rental fee is supposed to be paid to access the rental clothing, C2 considers it expensive.

The price of Recycled clothing corresponding to the R8 Recycle strategy is high according to NC2, SC2, CFE1, FD1 and FD2. According to SC2, only people with high incomes can afford recycled clothing. FD1 states that high-quality recycled clothing is only available in an expensive range. Also, according to FD2 organic and recyclable brands often resist the consumer instinct to buy due to their price as similar clothing available as fast fashion would be way cheaper.

Hence, according to most of the interviewees' price acts as a barrier in circular fashion consumption. Therefore, the following proposition is proposed based on the above findings:

P7: Lower price of clothing enables circular fashion consumption.

Product attributes (Quality, style, variety)

According to all the interviewees, product attributes play a crucial role in consumption.

For sustainable fashion consumption corresponding to the R2 strategy, the interviewees R, C1 and CES2 emphasize the high quality of the clothing; however, C2, CES1 and CES2 state that sustainable clothing lacks style and variety. According to them, very few brands produce sustainable clothing for every style, body type and age. Due to the lack of style and variety in sustainable fashion, the aspects act as barriers towards consumption. Overall, sustainable clothing provides high quality but lacks in style and quality. Therefore, the quality and style factor could act as a barrier to sustainable fashion consumption.

Vintage, secondhand and rental clothing fall under the category of Reuse clothing. In the case of vintage clothing, according to C1, it has a good quality. SC1 and R suggest that people prefer to buy vintage clothing as it has a different style and stands out without following the high street trends. On the other hand, secondhand clothing has poor quality and is available in limited style and variety.

The third type, rental clothing, is available in various qualities, styles and varieties. Based on the Reuse strategy, different consumption methods provide different product attributes.

Recycled clothing corresponds to the R8 Recycle strategy. According to CES1, SC2, CFE1, CFE2, FD1 and FD2, the clothing provides low quality, low variety and lacks style compared to regular clothing. This is because recycled fibres are not as strong, they do not last as long, and the colour runs out quicker. So, there are durability issues. Also, the fibres break down faster. The lack of quality would reduce consumption. Attractive alternatives in terms of style and variety are not offered. The clothing has less variety as compared to mainstream fashion. Recycled materials limit creativity because materials with fewer colours are used. Material recyclability would be more if variety of items in the clothing is less.

Moreover, recycled clothing does not look good. It tends to have less performance in terms of stretchability, retaining shape. Overall, recycled clothing lacks quality, style and variety and could act as barriers towards consumption. And these product attributes associated with recycled clothing could act as a barrier to consumption.

Hence, according to the interviewees', the following proposition is formulated based on the above findings:

P8: *High Quality in clothing enables circular fashion consumption.*
P9: *Better style in clothing enables circular fashion consumption.*
P10: *More Variety in clothing enables circular fashion consumption.*

Culture
For R2 Reduce strategy, culture influences sustainable consumption. For example, according to C1 and C2 ability to buy firsthand clothing is considered as being wealthy.

Based on the R3 Reuse strategy, NC1 reflected that buying used products is considered bad luck in some cultures. CFE1 explained the impact on the consumption of secondhand clothing in different cultures. According to CFE1, people in the US buy secondhand clothes not because they have low income, but in China, buying secondhand clothes looks like a degradation.

According to CES1, CFE2, and FD2, culture consumes recycled clothing corresponding to R8 recycled strategy. CES1 states that the clothing consumption of an individual depends on their social group. According to CFE2 and FD2, the Dutch are open to new things, and new brands with an approach to ethics and the usage of recycled materials are pretty welcomed. However, FD1 does not see an influence of culture on circular fashion consumption.

Hence, according to most of the interviewees', the following proposition is formulated based on the above findings.

P11: *Culture influences circular fashion consumption.*

Availability
For the R2 strategy, according to C1, C2 and FD2, sustainable clothing has limited availability and is not available at regular clothing shops. Moreover, if one looks for sustainable clothing in the Netherlands, one needs to research sustainable clothing shops' locations. Moreover, there is an absence of e-commerce that is just meant for sustainable brands, according to FD2. Therefore, according to the interviewees, consumers would not want to put an extra effort to look for sustainable shops.

Vintage and Rental clothing corresponding to the R3 Reuse strategy has limited shops according to R and SC2. Moreover, C2, NC1 and SC1 have a similar opinion on the availability of secondhand clothing. The availability is limited, and the online platforms selling secondhand are not reliable and convenient to use. Also, these shops are not always accessible and looking for the required clothing is time-consuming and might not be available in most cases.

Recycled clothing corresponding to R8 recycle strategy has limited availability in the Dutch market. NC2 suggests that consumers would not want to put an extra effort to find a store that sells recycled clothing. Also, CFE1 and CFE2 state that some Dutch consumers would be willing to buy circular alternatives if it is as readily available as linear ones.

Hence, according to most of the interviewees', circular fashion is not readily available. Therefore, the availability factor acts as a barrier in circular fashion consumption. Hence, the following proposition is proposed based on the above findings.

P12: Availability of circular clothing facilitates circular fashion consumption.

Transparency

C1, C2, NC2, CES2, FD2 and R commented on the transparency aspect of sustainable fashion associated with the R2 strategy. While C1, C2, NC2 felt transparency is not an influencing factor, CES2, FD2 and R suggested its strong influence on sustainable fashion consumption. Although it plays an important role, transparency is currently available at a minimal level. In CES2 and R, opinion circularity cannot be created without transparency, and it is absent due to the inability of the brands to be transparent about their long value chain. FD2 states that most big brands are not transparent, and they use their marketing power to attract customers.

Concerning the Reuse strategy, NC1 states that people are skeptical about buying the reused clothing due to the lack of transparency regarding its sustainability. SC1 and FD1 state that an individual's awareness of the environmental impact is low due to a lack of transparency and clarity regarding circularity.

For Recycled clothing corresponding to the R8 Recycle strategy, according to SC2, transparency is not the first reason to buy any product. CFE1 and CFE2 state that it is tough to trust the claims because, in many cases, they are faulty, even if the brands provide certifications. Also, most consumers are unaware of a clear definition and understanding of certification standards.

Hence, according to most of the interviewees' currently circular fashion is not transparent, and the presence of transparency would trigger consumption. However, currently, the transparency factor acts as a barrier towards consumption. Thus, the following proposition is proposed based on the above findings.

P13: Transparency enables consumers to engage in circular fashion consumption.

Values

In SC2's opinion, the values are influenced by culture, and both biospheric and egoistic values play a role. For example, according to CES1, fashion influencers on social media promote sustainability due to egoistic reasons to gain views and are not concerned about the environment.

Based on the secondhand consumption corresponding to the R3 Reuse strategy, according to NC1, an individual will not consume secondhand clothing to impress someone but for only environmentally friendly reasons. And in FD1's opinion, both values play a role.

In terms of the R8 Recycle strategy, according to CFE1 and CFE2, both biospheric and egoistic values play a role. Still, currently, biospheric is dominant as rational decision-making is a lot more biospheric.

Biospheric values are dominant among all the interviewees who commented about the influence of values on circular fashion consumption.

Thus, the following proposition is proposed based on the above findings.

P14: Biospheric value enables circular fashion consumption.

The following factors were additional factors mentioned by the interviewees-

Marketing power
CES2 suggests that firms producing circular fashion clothing are small businesses with no marketing power to attract customers. In addition, R states that many organizations like H&M use their entire aesthetic and marketing tools to influence customers to buy their clothing, which lacks circular fashion companies. FD1 also adds that lack of marketing is one of the main barriers. The brands producing the various circular clothing are not organized and optimized for a better on-demand proposition.

Thus, the following proposition is proposed based on the above findings.

H15: Marketing power of circular fashion businesses promote circular fashion consumption.

Brand
According to CFE2, if an individual searches for a specific brand, they might not find that easily in any circular fashion consumption method. Branded clothing might not be available when one looks for a circular fashion type. This acts as a barrier to consumption.
Thus, the following proposition is proposed based on the above finding.

H16: Availability of specific brands enable circular fashion consumption.

Hygiene
NC1 and NC2 are skeptical about consuming secondhand, rental or vintage clothing for hygiene reasons. According to them, it is not hygienic to consume used clothing, and the shops should probably provide details of the cleaning process or have tags on the clothing to denote that it is thoroughly cleaned. The hygiene factor might act as a barrier and needs to be addressed. Thus, the following proposition is proposed based on the above finding.

H17: Hygiene in the clothing encourages used clothing consumption.

Ease of Recycling
According to CFE1, CES1 and FD2, recycling clothes directly from consumers is not easy. In the Netherlands, most items to be recycled are put in the collection bins. This bin consists of a big heterogeneous pile of items of clothing in there. Clothing sortation companies like Sympany and

filter sort to see if clothing could be recycled or not. This process is complex because most items are not designed for recycling as they consist of multiple materials and metals in the form of buttons and zippers. However, items made up of 100% one type of material like 100% cotton are eligible for recycling; the others are not. Hence, the difficulty in recycling might act as a barrier and needs to be addressed. Thus, the following proposition is proposed based on the above finding.

P18: Ease of Recycling enables circular fashion consumption.

This chapter has helped the researcher formulate the propositions for the circular fashion consumption. However, from the data collected, it is evident that the influence is not necessarily positive. In the Dutch fashion market, some of the above-mentioned influencing factors act as barriers. Also, the influence of the factors may vary depending on the consumption method. This aspect would be explained in detail in Chapter 8 and potential barriers will be identified. Also, the above formulated propositions could be tested in the future studies.

8. Discussion

Although Mission-Oriented Innovation Policies are considered a powerful tool to address societal and environmental challenges by driving technological transformation, the demand for these policies cannot be ensured (Hekkert et al., 2007; Boon & Edler, 2018). The root cause and factors causing the lack of citizens' demand or demand articulation failure in transitions is unknown. For innovation to have a significant market share, there should be consumption at an individual level, also called the micro-level. This research aims to use the concept of demand to emphasize the need to investigate the factors that could act as barriers to consumption. Therefore, this research needs to understand factors influencing consumption to explain demand articulation failure.

The results of this study would add relevance to the Mission-Oriented Innovation Policies' literature by considering the Dutch fashion industry's case, which has a mission to achieve 100% circularity by 2050. Hence, the factors obstructing consumption of circular fashion have been identified to understand better what obstructs demand. Furthermore, the researcher discovers the impeding factors by analyzing the influencing factors for consumption that individuals encounter, as no previous study in the context of transitions has been done.

Based on the above-discussed aim, the main research question formulated was-

"What micro-factors are responsible for the demand articulation failure as they impede the micro-level consumption of circular fashion in the Dutch fashion industry?"

The research starts with a critical literature review on theories that explain consumers' adoption, behaviour, and decision-making process. This gave the researcher an insight into the factors that could play a role during adoption and buying. Then, using the case study of the Dutch fashion industry, a sustainability framework consisting of the R strategies and factors influencing sustainable and/or circular fashion consumption were derived from the existing literature. Finally, the combination of the secondary sources of data gave the researcher the primary list of factors that could influence circular fashion consumption.

The research then relied on primary data collection by conducting interviews. Interviews are conducted with different subjects to understand the current situation better. The discussion involves people from different target groups: non-consumers, sustainable fashion consumers, CE strategists, fashion designers, fashion entrepreneurs implementing circularity, researchers, sustainability consultants. This method helped the researcher obtain results by understanding different perspectives. After conducting the interview, the data has been analyzed and related to the R strategy framework. Further, through this section, based on the identified barriers, implications will be provided to the fashion companies and policymakers to increase demand for circular fashion consumption methods.

8.1. Key Insights

The thesis started with identifying the factors that impede consumption to address demand articulation failure of circular fashion in the Netherlands. Due to the limited literature regarding circularity in the fashion industry, the researcher developed a vague idea about the concept and the associated consumption methods. Based on the available information, the consumption methods, circular fashion types like sustainable clothing, second-hand clothing, renting and recycling were listed. However, the empirical data obtained provided a broader perspective on the concept. The primary data collected proved that there are many standalone circular business models and attaining circularity did not necessarily mean buying. This included refusing to consume, reducing

consumption, sharing, donating, upcycling and consuming recyclable whenever possible. Also, both the literature (Section 1.4) and empirical data address the attitude-behaviour gap and the lack of focus on the consumption side, creating a clear imbalance between the production and consumption aspects.

After conducting in-depth interviews with different target groups, the researcher developed an understanding that circular fashion cannot be considered holistic as it consists of multiple variables that could vary based on the consumption method. Hence, the barriers to consumption cannot be generalized. Therefore, there is not an integrated experience that supports the consumer to act circularly. Moreover, some of the factors are interlinked, but the interviewees' opinions on the dependency of the factors on each other and based on the consumption method varied.

Also, the interviewees' opinions contradicted the available literature. For example, the literature stated second-hand and rental models as one of the circular consumption methods. However, interviewees like Consumer-1 did not consider consuming second-hand as a circular fashion consumption method as it might still be fast fashion and might not last long and end up in landfills. On the other hand, according to Circular Economic Strategist-2, renting is not circular because the way it was produced is unknown, and circularity starts at the beginning of the product.

Although the interviewees had a diverse opinion on the consumption methods, four out of thirteen emphasized following the 9R framework of circularity for consuming circular fashion. On the other hand, the available literature on circular fashion did not provide any information on the prioritization of the consumption methods to attain circularity at the maximum level despite the existence of the 9R framework of circularity developed by researchers Potting et al. (2017).

From the interviews, it was evident that as there exist different circular fashion consumption methods, the influence of certain factors can be generalized; however, some factors have a varied influence according to the choice of the consumption methods. For instance, some factors followed a general trend, namely, price, income, awareness and knowledge, availability, culture, and transparency. These aspects have already been elaborated in Section 5, which was based on literature and section 7.3, based on the opinions of the interviewees. Although these factors positively influence circular fashion consumption, they currently act as barriers in the consumption process (Section 7.3).

8.2.   An attempt to develop a theoretical framework.

This section answers Research Question 3 by identifying potential factors that could impede consumption of circular fashion.

The study intended to make a conceptual model for circular fashion consumption in a general sense so that factors that impede circular fashion consumption could be analyzed. These factors could be used to address the demand-articulation failure.

In section 7.3, a descriptive proposition has been developed. Different consumption methods have been related to the R-strategies, then the influence of the factors on the consumption method has been analyzed, and the current barriers have been described. However, as observed, different consumption methods exist, and the barriers and drivers based on the consumption method might differ. Therefore, this section will consist of a conceptual framework consisting of the circular fashion impeding factors, and the barriers based on the consumption methods corresponding to the R-strategies would be identified.

As discussed in section 8.1, some factors follow a general trend, specifically, price, income, awareness and knowledge, availability, and product attributes transparency. The factors price, income awareness and knowledge, availability and transparency currently act as barriers to circular fashion consumption. Moreover, according to the empirical data, women consume circular fashion to a greater extent. On the other hand, culture influences consumption but does not follow a general trend. Therefore, this factor might act as a barrier or driver based on the consumption method.

The barriers have been already discussed in section 5 through literature and in section 7.3 through empirical data and will be further summarized below-

8.2.1. Potential Barriers

Price

As mentioned in section 5.1.3, price is a vital factor in consumer purchasing decisions, and it is often prioritized over sustainability (Butler & Francis, 1997; Grasso et al., 2000). Most customers prioritize price, quality, and style over ethical concerns (Joergens, 2006). The empirical data also suggests the same. Based on section 7.3, according to most of the interviewees' price acts as a barrier in circular fashion consumption as most circular fashion consumption methods like sustainable fashion corresponding to R2 strategy, vintage and rental clothing corresponding to R3 strategy, recycled clothing corresponding to R8 strategy are expensive. In general, environmentally friendly products is perceived as being more expensive. People do not think about it in a larger picture. For example, sustainable clothing is honestly priced and not expensive as it is made from environmentally friendly materials and is ethically made by being fair to the workers and paying them well. The actual value is usually observed in sustainable clothing as it covers environmental and social costs. However, consuming secondhand, which corresponds to the R2 strategy, R4 Repair strategy is affordable. Fast fashion is considered very cheap but does not resemble the actual value. The true value is usually observed in sustainable clothing as it covers environmental and social costs.

Income

As mentioned in section 5.1.1, with improving income, an individual's standard of living, status and purchasing power increases. This improves the possibility of consumers buying high-quality, sustainable fashion (Niinimäki, 2010). Moreover, the interviewees considered income as the most important influencing factor for circular fashion consumption. For sustainable fashion consumption, which corresponds to the R1 Reduce strategy, higher-income would mean higher consumption. Vintage clothing is usually of high quality and not available at an affordable price. Rental clothing has a high monthly fee for access of clothing. Hence, only people with high income would be able to afford Vintage and Rental fashion. On the other hand, an individual with low income would buy secondhand clothing as they would get it at a lower price and an affordable range.

Awareness and knowledge

Literature suggests that consumers would favour the environment if they were more knowledgeable and aware of the environmental problems. This knowledge influences consumer intention to buy and actual buying behaviour (Chen & Chang, 2012). With a lack of information, while buying, consumers tend to buy products that hurt the environment (Connell, 2010). Moreover, according to the empirical data, most people are unaware of circularity in the fashion industry. People have limited knowledge about sustainable fashion. People do not realize that piles of clothes go into the landfill and are unaware of circular clothing. According to the interviewees, more awareness about circularity and circular fashion will help circular fashion consumption grow

Availability

As already mentioned in section 5.3, consumers view sustainable and circular fashion consumption as highly inconvenient due to the restricted availability and accessibility of sustainable fabrics. Moreover, sustainable fashion was a niche market for a long time, primarily available through specialized websites. As a result, customers needed to know where to look for it (Han et al.,2010). Interviewees' have a similar opinion; as mentioned in section 7.3, sustainable clothing has limited availability and is not available at regular clothing shops. According to the interviewees, consumers would not want to put an extra effort to look for sustainable shops. Vintage and Rental clothing has little shops as well. The availability of secondhand fashion is limited; online platforms selling secondhand are not reliable and inconvenient to use. Also, these shops are not always accessible and looking for the required clothing is time-consuming and might not be available in most cases. Also, recycled clothing corresponding has limited availability in the Dutch market. Consumers would not want to put an extra effort to find a store that sells recycled clothing. Hence, according to most of the interviewees', circular fashion is not readily available. Therefore, the availability factor acts as a barrier in circular fashion consumption.

Product Attributes (Quality, Style, Variety)

The product attributes vary based on the circular fashion consumption method.

According to the literature, sustainable fashion behaviour is influenced by the product attributes and the quality of the clothing. Consumers seek these functional features in a product, and it determines a consumer's purchasing decision (Chi, 2015). Moreover, consumers pay close attention to product attributes such as style, fit, and quality when it comes to fashion, which significantly impacts their purchasing decision (Ko et al., 2011; Niinimäki, 2010).

Based on section 7.3, sustainable fashion corresponding to the R2 strategy is high quality but lacks style and variety. Vintage, secondhand and rental clothing fall under the category of Reuse clothing. In the case of vintage clothing, it has a good quality, and people prefer to buy vintage clothing as it has a different style and stands out without following the high street trends. On the other hand, secondhand clothing has poor quality and is available in limited style and variety. The third type, rental clothing, is available in various qualities, styles and varieties. Based on the Reuse strategy, different consumption methods provide different product attributes. Recycled clothing corresponding to the R8 Recycle strategy provides low quality, low variety and lacks style compared to regular clothing.

Moreover, recycled clothing does not look good. It tends to have less performance in terms of stretchability, retaining shape. Overall, recycled clothing lacks quality, style and variety and could act as barriers towards consumption.

Transparency

According to the literature in section 5.3, transparency is an essential aspect of circular fashion consumption. However, consumers presently lack confidence in the transparency of production and scepticism about the company's claims (Bly et al., 2015). As a result, they are unsure how to select eco-friendly clothing and avoid greenwashing Connell, 2010).

According to most of the interviewees reflected in section 7.3, the transparency aspect of sustainable fashion is associated with the R2 strategy. However, transparency is currently available at a minimal level. According to the general view of the interviewees', circularity cannot be created without transparency, and it is absent due to the inability of the brands to be transparent about their long value chain. Moreover, most big brands are not transparent, and they use their marketing power to attract customers. Some interviewees suggest that it is tough to trust the claims because, in many cases, they

are faulty, even if the brands provide certifications. Also, most consumers are unaware of a clear definition and understanding of certification standards.

Also, people are sceptical about buying the reused clothing corresponding to the R3 Reuse strategy due to the lack of transparency regarding its sustainability. According to the empirical data, individual's awareness about the environmental impact is low due to a lack of transparency and clarity regarding the circularity aspect.

Gender

According to the literature, females are fashion conscious and more involved in buying clothes than men. But most of the interviewees suggest that women consume more sustainably as most of the marketing focus is on women. Also, women tend to look for more sustainable garments as they are more compassionate. As mentioned in section 7.3, the clothing libraries in the Netherlands have unisex items but not specifically for men. Also, men are usually loyal to brands. Hence, they could be a good target group for sustainable fashion.

However, based on the empirical data, gender does not influence recycled or recyclable clothing consumption.

Culture

According to researchers Kotler et al. (2008), Cultural values are acknowledged to influence consumer behaviour significantly. This aspect is also like the interpersonal communication that influences the purchase behaviour (Rogers, 2003). Cultural differences may affect consumer's buying behaviour (Carey & Cervellon, 2014). Based on section 7.3, most of the interviewees suggest the strong influence of culture. For R2 Reduce strategy, culture influences sustainable consumption. For example, the ability to buy firsthand clothing is considered as being wealthy. Based on the R3 Reuse strategy, NC1 reflected that buying used products is considered bad luck in some cultures.

Moreover, the consumption of secondhand clothing is influenced by cultures. For example, people in the US buy secondhand clothes not because they have low income, but it is looked upon as degradation in China. Culture also plays a role in consuming recycled clothing corresponding to R8 recycled strategy. The clothing consumption of an individual depends on their social group. Also, the interviewees suggest that the Dutch are open to new brands with an approach to ethics and the usage of recycled materials are pretty welcomed.

8.2.2. Additional Barriers

Hygiene

As mentioned in section 7.3, non-consumers are skeptical about consuming clothing associated with the R3 Reuse strategy, specifically secondhand, rental and vintage clothing, due to hygiene reasons. As these clothes are already used, the potential customers have doubts regarding the expected hygiene requirement (Xu et al., 2014). Moreover, consumers fear the contamination possibility through the clothing (Silva et al., 2021). Hence, the lack of hygiene is a substantial barrier towards consumption methods associated with the Reuse strategy.

Marketing power

As mentioned in section 7.3, firms producing circular fashion clothing are small businesses with no marketing power to attract customers. Moreover, the various circular clothing brands are not organized and optimized for a better on-demand proposition. According to the researcher, the

marketing power could also be used to educate and raise consumers' awareness and attract skeptical consumers.

Brand Loyalty
The brand has an influence on consumption (Xu et al., 2014). The brand usually creates a contribution of attributes like trust. According to section 7.3, if an individual searches for a specific brand in secondhand clothing, they might not find that easily. Branded clothing might not be available when one looks for good quality circular fashion clothing—the lack of brand availability is a barrier towards consumption.

Ease of Recycling
Not every piece of clothing is recyclable; as mentioned in the empirical data and section 7.3, clothing is usually made up of a mixture of materials and fabrics. The mixture of materials in the clothing restricts the ease of recycling and obstructs the consumer contribution to recycle. Only if consumers buy clothes made up of a single material without additional attachments in the form of metals or decoration would the recycling process be more straightforward.

8.2.3. Framework consisting of barriers

As already mentioned, circular fashion consumption methods are so diverse that it is impossible to generalize the influence of the identified factors. Thus, there exist multiple variables in terms of different consumption methods falling under the R strategies. Thus, the barriers based on the R strategies might differ.

All the listed barriers in section 8.2.1, will be associated with the consumption method corresponding to the R strategies. As already mentioned, some interviewees mentioned the R0 Refuse, R1 Rethink, R4 Repair and R6 Remanufacture strategies and the consumption methods associated with it. But no factors have been associated with the R0 Refuse strategy, R1 Rethink strategy, R5 Refurbish, R6 based on literature and the empirical data; hence the relationship between the factors and the strategy is not shown in the figure.

In some cases, as mentioned in section 8.2.1, a barrier for one consumption method might act as a driver for another. Hence, based on the literature and the interviews, the following tabulation showing the relationship between identified barriers and R-strategies and its visual representation has been obtained where red indicates barriers and green indicates drivers. Further, a conceptual model has been developed consisting of the barriers and their influence on the R-strategies.

The Figure 14 shows the relationship between the identified factors and the consumption methods associated with the R strategies. In the figure, red colour denotes a barrier and the green denotes a driver.
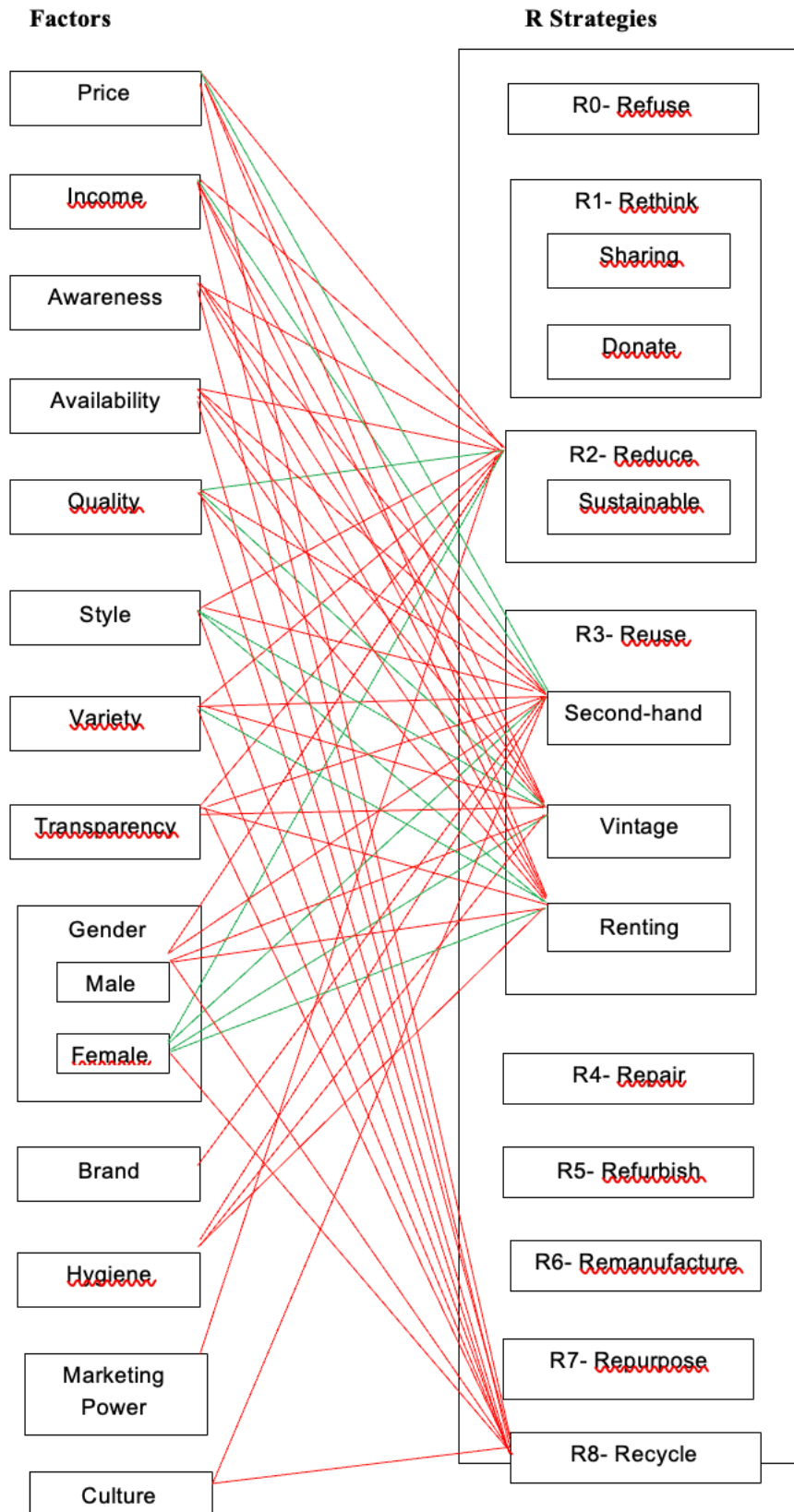
Figure 13: Framework consisting of barriers.

Based on the illustration from Figure 14, the summary of the relationship between the factors and the R-strategies has been created. Here B signifies Barriers and D signifies the drivers.

Factors

	Ro	R1	R2	R3			R4	R5	R6	R7	R8
				SH	V	R					B
Price			B	D	B	B					B
Income			B	D	B	B					B
Awareness			B	B	B	B					B
Availability			B	B	B	B					B
Quality			D	B	D	B					B
Style			B	B	D	D					B
Variety			B	B	B	D					B
Transparency			B	B	B	B					B
Male			B	B	B	B					B
Female			D	D	D	D					B
Brand				B							
Culture			B								B
Hygiene				B	B	B					
Marketing Power			B								

Table 5: Relationship between identified barriers and R-strategies

8.3. Practical contribution

This study aims to add empirical results in the field of circular textile consumption behavioural research. As mentioned in the problem statement, the fashion industry still lacks sustainable and circular purchasing behaviour from Dutch consumers. Therefore, this research aimed to help the marketers understand the consumers' barriers to purchase. Further, this research contributes to the understanding of factors that impede individual-level consumption. By addressing these factors, the policymakers would be able to analyze the causes of demand articulation failure and speed up the CE transition in the fashion industry.

8.3.1. Practical implications for the policymakers

This section will deal with how policymakers could contribute towards creating demand for circular fashion consumption methods. As responsible consumption is interlinked with responsible production, some implications are also provided to produce circularly.

The policymakers could take the following steps-

At present, the policies do not have concrete regulations for the industries. It would be recommended that the policymakers make policies that are more applicable and not abstract. They could create a roadmap based on the current situation and the final goal as the current circularity goals are long-

term; making smaller plans with more detailed policies and keeping track every few years might help analyze the progress. Also, the government should invest in Life Cycle Assessment methods and make them compulsory for public and private funding fashion corporations, to make sure that measuring the environmental impact becomes standard procedure for new business solutions as sustainable production is the first step towards achieving circularity. This could also be done to promote sustainable fashion by the government so that eventually increased awareness amongst the consumers would help them in switching their purchase behavior. These steps might trigger the achievement of the goal of achieving 100% circularity.

Making a cap on bulk production would limit the companies and push for more circular opportunities. So, by capping on the production, the garments could be kept in use and upcycled (R6-Remanufacture strategy) to a new consumer who sees value in it. This might also influence the fashion companies to construct clothing that is easy to be repaired (R4 Repair strategy) so that consumers prefer buying from them.

Currently, very few companies are working towards producing recycled and sustainable clothing. The government should support these small-scale circular fashion companies. This can be done by providing funds or subsidies to the startups that produce circular designs. These startups could also use this accessible funding to look for an answer for consumption issues. For example, according to the collected empirical data, brand Mud Jeans produces recycled clothing has a production facility abroad, so they pay import duties to get them to the Dutch market. And for recycling, export it again to their recycling facility, which is also abroad, so they are being charged double in taxation.

The government can make laws regarding the resource usage and CO2 pricing as fast fashion uses raw materials like polyester and the production process generates high intensity of CO2 during production. This would force the producers to look for attractive sustainable solutions and materials other than new ones ensuring the availability of more circular options.

As mentioned, the R-strategy framework, developed by researchers Potting et al. (2017), R0- Refuse, R1-Rethink and R2 Reduce, fall on the top of the circularity ladder. This means that consumption methods associated with these strategies could contribute towards maximum circularity. If there are policies that could come upon a cap on how much people buy, this might discourage the consumers from buying new garments. They would contribute towards refusal and/ or reduction of consuming new garments. These aspects are associated with R0 Refuse and R2 Reduce strategy, respectively. There should be more ways to pass on clothing like donations or charity and sharing clothes through swapping, associated with the R1 Rethink strategy.

Also, it is evident from the literature and empirical data that there is lack of awareness and knowledge about circular fashion. Therefore, the government could spread awareness about the impact of the current fast fashion consumption and the alternative sustainable and circular options available. For example, The Fashion for Good in Amsterdam is an opportunity to bring about awareness.

The presence of transparency might help the consumers switch to circular options. And hence, there needs to be an agreement on sustainability labelling on a European level and investment in marketing to make these labels well known. There need to be laws to ensure labels and brands to be transparent. For example, certifications for clothing that they do not use the chemicals that harms the environment and all these things. This transparency aspect needs to be present in the recycling process as well. Despite some stores like H&M taking back clothes for recycling, there should be more extensive transparency on the end of clothing life.

Overall, the government should encourage customers to contribute towards circularity. This could be done by incentivizing consumers to donate their garments sustainably to make sure it can be reused

and/or recycled. The consumers who contribute to this process could get some money back from it, just like they receive it from the glass collection systems or the plastic collection systems.

8.3.2. Practical implications for the companies

According to the researcher, the fashion clothing companies could also contribute towards circularity based on the identified influencing factors.

The clothing companies' business model could be tailored to a specific R strategy as the factors influencing consumption could have a diverse influence based on the consumption method but have similar influence with respect to the specific R group. Hence, strategies could be deployed to focus on the particular R from the 9R- framework.

Fashion influencers can play a huge role in spreading awareness about sustainable brands. Sustainable companies could collaborate with them to create and promote sustainability. Moreover, circular fashion products are not widely available and are restricted to specific age groups. Hence, the companies should target all age groups to attract more consumers.

Also, according to most of the interviewees', mostly females consume circular fashion in sustainable, second-hand, vintage or rental clothing. This is mainly because, in rental or vintage shops, clothing available is for females or is unisex. Thus, the companies need to consider men as their target market and start marketing their products to attract men, as usually men are loyal customers.

An essential aspect of circularity is transparency. Companies could create a digital environment through which consumers can engage with circular products. Information regarding the fibre source, certifications and the production steps to create awareness of what is being consumed could be provided. The digital environment could offer an opportunity to resale, repair, or recycling, and maybe even refurbishing at some point. This platform could also make the circular shops easier to find. Information of the various circular shops available could be provided through this application.

Sustainable clothing is produced from scratch but is environmentally friendly, has good fabric, craftsmanship and quality overall. It should be introduced to people in an accessible way. Companies can start introducing the fashion at a lower price, and when people get hooked on it, they raise it back up by implementing the concept of capitalism. This is important has price factor plays an important role in consumption. Once the consumers start using it, they might feel good because, through these sustainable products, they would not only be helping the environment, contributing towards fair pay for the workers but also use god quality long lasting clothing.

Moreover, fashion is a means of expression for some people. Hence, consumers find it difficult to portray their image due to a lack of variety in circular clothing. The companies could seek funds from venture capitalists or the government to focus on the product attributes to attract more consumers.

Finally, could help in attaining circularity by contributing towards the R8 recycling strategy. Brands could collect the used clothing from consumers to create recycled clothing by providing the consumers with some economic benefit. For example, H&M provides a 10% discount to the consumers on new clothes when used clothes are returned.

8.4. Theoretical contribution

The thesis aims to address the factors that influence circular fashion consumption to address the barriers in consumption. For this, the research uses various theories. This included diffusion of

innovation model by Rogers (2003), Consumer decision process by researchers Kotler (2008) and the Theory of Planned Behavior by Ajzen & Fishbein (1977).

The theory of diffusion has been chosen as it addresses the factors that could influence the innovation adoption by an individual. However, it fails to address the possibility for an individual to reject an innovation even after they fully understand it. The attitude-behavior gap in the consumption behavior has been ignored that has been addressed as a part of this research. Also, consideration to innovation characteristics and has been given in this study by considering the product attributes as an important means to adopt or reject the consumption, this is not done in the Rogers theory.

On the other hand, Theory of Planned Behavior (TPB) has been used as a crucial tool to understand consumer behavior. This theory describes influencers of an individual behavior by considering Attitude, Subjective Norm and Perceived Behavioral Control as the main factors but fails to describe how an individual makes the decision to adopt or reject an innovation. Also, it does not consider role of environmental issues. Hence, for this study, TPB was combined with the theory of Value-Belief-Norm so that the environmental aspect is taken into consideration.

Through this case study, the heterogeneity in the concept of circular economy in the fashion industry is shown by the existence of diverse circular consumption methods and the difference in influence of the same factors with respect to the consumption method. Also, the current mission of achieving 100% circularity by 2050 also demonstrates a directionality failure. Achieving circularity cannot be considered holistic due to the existence of multiple methods. This is mainly due to the lack of consumer contribution through consumption. This research has identified general factors that could impede consumption through the existing academic literature and also identified additional factors through primary source of data that are specific to consumer contribution towards circularity in the fashion industries. Moreover, factors that follow a general trend (direction of influence) have also been identified along with the barriers with respect to the variety of consumption methods. These general factors could help the policymakers identify the influencing factors of consumption and according trigger demand and eventually achieve the goal.

Moreover, the thesis aims to contribute to the stock of knowledge on Mission-oriented innovation policies by considering the case study of the Dutch fashion industry. Although the literature on Mission-oriented Innovation policies addresses societal challenges but does not address the cause of demand-articulation failure. Through this research, consumption behavior has been analyzed so that demand failure could be addressed. This is done by linking MIP literature with consumer behaviour and adoption literature. This research aims to add theoretical relevance by identifying the micro-factors (individual-level) that impede consumption in the transition in the presence of Mission-Oriented innovation policies. The factors impeding consumption would further address the demand articulation failure. The insights through the case study regarding the potential barriers would contribute to a better understanding of market creation. The barriers have been identified by quantifying the qualitative data. Moreover, implications to the policymakers could be provided based on the identified factors. This could help speed up the demand. Further, the general consumption factors identified in Section 8.2.1 at the micro-level could be considered the general list of factors applicable in other sectors and industries undergoing transitions.

8.5. Management of Technology (MOT) relevance

Based on the MOT course guidelines, a thesis should have aspects like innovation, strategy or technology involved and highlight a scientific-analytical study. This study will add relevance to Management of Technology (MOT) by discovering factors that impede consumption by considering

the case of circularity in the Dutch fashion industry. This would help the policymakers to direct the corporates to strategize their business models to provide a variety of circular consumption methods to maximize customer satisfaction on one hand and economic growth in terms of profit maximization through the creation of demand. Thus, this study provides implications to the two stakeholders, policymakers, and fashion companies to improve the current business process of the fashion industry.

The research has been shown to be interdisciplinary since it spanned multiple disciplines and needed concepts from MOT courses like Technology, Strategy and Entrepreneurship (MOT1435), Master Thesis Preparation (MOT2004), Research Methods (2312), Sustainable Innovation and Transitions (SPM9730) have been used and applied throughout the thesis.

8.6. Limitations of the study and future scope.

The different consumption methods were categorized into R-strategies to obtain the generalized influence of the factors corresponding to the consumption method associated with the particular R-strategies. However, not all the R-strategies were associated with methods that could contribute towards achieving circularity. Moreover, in some cases, the interviewees implicitly mentioned some consumption methods during the interviewee but did not emphasize the factors that could influence its consumption.

Internal validity refers to the establishment of a causal relationship where one variable causes the other. This means that certain conditions may lead to other conditions. Internal validity is not applicable in the case of exploratory studies. In correlation, two variables move together. This does not mean change in one variable causes the change in the other variable (Sekaran & Bougie, 2016). This study aimed at analyzing the correlation between the factors that influence consumption and consumption of circular fashion, thereby addressing demand. As there is a variety of circular fashion consumption methods, additional dependent variables might differ and have a different influence based on the consumption method. Hence, the factors do not necessarily cause consumption.

On the other hand, external validity determines if the research findings produce generalizable results beyond the considered case study (Yin, 2017). Although several target groups were interviewed to understand different perspectives, the generalizability of this study, considering the single case study of the Dutch fashion industry study is limited due to a relatively small sample for qualitative data collection. Due to the COVID pandemic and time limit, the respondents interviewed were limited and cannot fully represent the opinion of the Dutch population. As a result, the results arise from a skewed perspective. The research would be more elaborate if the different target groups interviewed consisted of more participants. However, the case study approach would provide helpful insights and vast information to draw valid information. Moreover, the framework developed to answer SQ2 was based on the literature study. The factors derived from the literature and the observe influence have higher level of generalizability when it comes to consumption as compared to the propositions adjusted based on the conducted interviews considering the case of the Dutch fashion industry. This is because these factors were obtained from various academic sources. On the other hand, the propositions developed along with the additional factors have been added after the case study analysis. Hence, the readers should process the results with caution as testing of the hypothesis in future research is required.

Moreover, researcher bias is unavoidable and might have influenced the quality of the report.

For future research, the researchers could test the proposed propositions. This could be done by conducting surveys as surveys are considered as the best means to analyze attitudes and behaviors

of people. Moreover, as the current research is exploratory, in future, by focusing on a single R strategy or a particular consumption method, in-depth analysis could be done to understand the respective barriers that obstruct consumption. If researchers try to replicate the research in the future, they will observe results consisting of varied perspectives as circular fashion is a broad concept, but the influencing factors would be the same. Hence, it would be best to carry out the research considering a particular R strategy so that similar results as in sections 8.1, 8.2 are obtained.

Also, future research could look into whether the usage marketing tactics used and the involvement of a branded clothing in circular methods of consumption have implications on the adoption of circular fashion.

9. Conclusion

This research aimed to understand better the causes of the demand articulation failure in Mission-oriented Innovation Policies by using the case study of the Dutch fashion industry undergoing Circular Economy transition by understanding consumer behaviour. The study identified and analyzed factors impeding the diverse circular clothing consumption methods and multiple factors influencing the consumption in the Netherlands.

To reach the primary goal, the researcher tried to identify adoption and behavioural models relevant to understanding the consumer consumption behaviour of circular fashion using the existing literature. Then, the micro-factors influencing consumer consumption behaviour in adopting sustainable fashion based on the literature. This was then followed by identifying micro-factors impeding consumption in the Dutch fashion industry by conducting interviews with different target groups, namely consumers and non-consumers of sustainable fashion, researchers, CE entrepreneurs, sustainability consultants, fashion designers and CE strategists.

This section will conclude the study by answering the main research question-

 "What individual-level factors are responsible for the demand articulation failure as they impede the individual-level consumption of circular fashion in the Dutch fashion industry?"

The researcher tried to understand consumer behaviour by analyzing factors that impede circular fashion consumption. The identified factors have been then used to provide implications to the policymakers so that circular fashion is promoted.

The three sub-questions that formulate the above main research question will be answered using the empirical data and discussion.

SQ1. Which existing behavioural models are relevant for understanding the consumer consumption behaviour of circular fashion?

Various theories related to consumer adoption, buying process and behaviour were discussed, including Rogers' (2003), Innovation Adoption and Diffusion theory, Consumers' decision process by Kotler et al. (2008). These helped the researcher identify factors that could influence consumption, i.e., the factors that would lead to consumer adoption and rejection. This included factors under the category of Demographic, Psychological, Cultural and Social (as explained in Chapter 4). Further, Theory of Planned Behaviour developed by Ajzen & Fishbein (1977) and Value belief norm model developed by researchers Stern et al. (1999) were studied to understand aspects consumer behaviour

that included Attitude, Subjective Norm and Perceived Behavioural Control and the influence of values respectively.

SQ2. What individual-level factors can influence the consumption behaviour of circular fashion?

To understand the factors that impede circular fashion consumption, the researcher tried to identify factors that motivate the consumer towards adoption or rejection of circular fashion consumption. For this, the researcher made use of the existing literature related to circularity, circular fashion, sustainable consumption and sustainable fashion to derive a list of influencing factors as seen in Chapter 5. This included Demographic factors, Awareness and Knowledg8e and Garment characteristics influencing the attitude of the consumer. The demographic factors include- Age, Gender, Income and Garment characteristics, include- Price and product attributes. Moreover, it was identified that Subjective Norm is influenced by Culture and Perceived Behavioural Control by Availability and Transparency in Sustainability. Finally, the Personal Norm is mainly influenced by Biospheric and Egoistic Values.

SQ3. What are the individual-level factors that act as barriers towards the consumption of circular fashion in the Netherlands?

This was the final step of the analysis.This stage involved collecting primary source of data by conducting semi-structured interviews with different target groups: consumers and non-consumers of sustainable fashion, researchers, CE entrepreneurs, sustainability consultants, fashion designers, and CE strategists. Based on the interviews, the researcher aimed to identify additional individual-level factors that might influence circular fashion consumption and derive the final list of factors that might act as barriers by quantifying the collected data.

On discussing with experts, the researcher concluded that there are diverse methods through which a consumer can contribute towards circularity in the fashion industry. However, there is not an integrated experience that supports the consumer to act circularly. The consumer contribution methods included donating, sharing, consuming sustainable clothing, Vintage clothing, rental clothing, second-hand clothing, recyclable/ recycled clothing.

The researcher developed an understanding that circular fashion cannot be considered holistic as it consists of multiple variables that could vary based on the consumption method. Hence, to obtain a more generalized view, the consumption methods were associated with the 9R framework of strategies. This included-
- Sharing and donating associated with R1 Rethink strategy
- Reducing consumption and consuming sustainable fashion associated with R2 Reduce strategy
- Vintage, Rental and second-hand clothing- R3 Reuse strategy
- Upcycling- R6 Remanufacture
- Recyclable/ Recycled Clothing- R8 Recycle Strategy

Also, from the interviews, it was evident that the influence of certain factors can be generalized; however, some factors have a varied influence according to the choice of the consumption methods. For instance, some factors followed a general trend, namely, price, income, awareness and knowledge, availability, culture, and transparency. Other factors whose influence depended on the consumption method included age, product attributes, gender, hygiene, the company's marketing power, brand loyalty, and ease of recycling.

As already mentioned, circular fashion consumption methods are so diverse that it is impossible to generalize the influence of the identified factors. Hence, for future research, the researcher should focus on a single R strategy and focus on the consumption methods. By focusing on a single R strategy or a particular consumption method, an in-depth analysis could be done to understand the barriers that obstruct consumption with the respective R strategy. Finally, implications have been provided to the policymakers and the companies trying to transition towards circularity for increasing consumption. These aspects have been elaborated in section 8.3.1 and 8.3.2.

Moreover, the thesis aims to contribute to the stock of knowledge on Mission-oriented Innovation Policies (MIP) as it although aims to address societal challenges but often ignores the cause of demand-articulation failure. Through this research, consumption behavior has been analyzed so that demand failure could be addressed. This is done by linking MIP literature with consumer behaviour and adoption literature. This research aims to add relevance by identifying the micro-factors (individual-level) that impede consumption in the transition in the presence of Mission-Oriented innovation policies. The factors impeding consumption would further address the demand articulation failure. The insights through the case study regarding the potential barriers would contribute to a better understanding of market creation. The barriers have been identified by quantifying the qualitative data.

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Appendix 1: Interview Instructions

I would like to re-introduce myself in person.

I am Pranvi Bisen. I am conducting this interview as a part of my M.Sc. Management of Technology thesis project at TU Delft. This research is based on understanding consumer behaviour in the Dutch circular fashion Industry. The goal of this interview is to identify factors that hinder circular fashion consumption in the Netherlands as according to my research circular fashion consumption is underexplored. These factors would further be analyzed to provide implications to the policymakers that could be used by them to increase the demand for circular fashion.

During the interview, you could stop me at any time if you do not understand the question or do not want to answer the question.

I intend to use the data collected through this interview in my thesis analysis. The data will be stored and backed-up during the project lifetime on SURF drive and only the research team including me, the advisor and two supervisors will have access to the data. Any personal data collected will be safeguarded by anonymizing it to maintain confidentiality. No personal information like your name, age, affiliated organization/ institution will be mentioned in the thesis/ The personal research data will be destroyed after the end of the research project and anonymized or aggregated data will be publicly released following the TU Delft Research Data Framework Policy.

You can also contact me after the interview if you are not comfortable with the data being stored. I shall delete it then.

I would like to request you to approve the summary of the interview sent by me soon after the interview. If you agree with all the instructions, we could proceed with the interview.

Appendix 2: Interview Questions

Question 1: Are you aware of the circular fashion concept/ circularity in the fashion industry? (If the non-consumers are not aware of it, I would explain it)
This question would help me understand their awareness of the concept

Question 2: How does your company contribute towards circularity in the fashion industry? (Question to expert)

Question 3: Do you think circular fashion consumption could contribute towards achieving circularity in the fashion industry? Why/ Why not?

Question 4: What are the different circular fashion consumption methods you are aware of?

Question 5: Do you consider buying circular fashion? Why/ why not?

Question 7: What prevents you from consuming circular fashion (if they do not consume)? Why do you think others do not consume it (if they consume and they are professionals)?

Question 8: What do you think about the circular fashion consumption in the Netherlands? Are people consuming it actively or avoid consuming it?

Question 9: Do you think circularity in the fashion industry is a probable solution to the fashion industry's sustainability issue? (Question to the expert, consumer, and non-consumers)

Question 10: Based on the factors listed on the screen, I would like to know your opinion on the factors. Do you believe 'factor 1' to influence (positively/negatively) consumption? If so, how, and why?

Question 11: Could you list any other factors that could be added to the list of factors that hinder circular fashion consumption? And how do these factors act as barriers?

Question 12: How do you think more demand for circular products could be created?

Phase 3: Related to policies and regulations.

Question 13: Do you think the presence of Sustainable Development Goals and EU regulations promote circular fashion consumption? (Question to the expert, consumers)

Question 14: Do you think the current EU policy of reducing the use of raw materials to half by 2030 and reaching 100% circularity by 2050 is achievable? Why/ why not? (Question to the expert, consumers)

Question 15: How does the lack of consumption of circular fashion prevent the goal achievement?

Question 16: Do you have any recommendations for the policymakers to improve circular fashion consumption?

Appendix 3: Factors based on literature shown on the screen.

1. Age of the consumer
2. Gender
3. Income
4. Awareness and knowledge about circular fashion
5. Price of the garment
6. Product attributes: quality, style, variety
7. Culture
8. Availability of sustainable/ circular clothing
9. Transparency in sustainable clothing (no greenwashing etc.,)
10. Values
    a. Biospheric
    b. Egoistic

Appendix D: Interviews

Consumer 1

Interviewer: Are you aware of the circular fashion concept/ circularity in the fashion industry?
Interviewee: I am familiar with it on a personal level, not on a professional level. In circular fashion, nothing goes to waste. Everything is again used to make something new. For example, if you have a raw material that is made from something that already existed, so instead of sending it to the landfill, it is used again. No part of it ends the chain. It is always going back into the supply chain.

Interviewer: Do you think circular fashion consumption could contribute towards achieving circularity in the fashion industry? Why/ Why not?
Interviewee: If it is accessible to everybody, and not just like the elite because right now anything that is sustainable, or circular is more expensive due to a lot of innovation, time and effort that is required. The sustainability right now is very classist and elitist because you cannot shame people for buying fast fashion if that is all they can afford. Also, circular fashion it is not as accessible.

Interviewer: What are the different circular fashion consumption methods you are aware of?
Interviewee: No, I do not know specifically.
Second-hand fashion is not sometimes the most sustainable, but it is better than buying something new and sometimes that is the only thing some people can afford. Even if you are buying secondhand, it might not last that long due to its poor quality, and it would still go into the landfills. A lot of secondhand fashion is still fast fashion. Thrifting is not very circular, but it is sustainable. Vintage pieces are more circular. Although, it is old, it has a good quality.

Interviewer: Do you consider buying circular fashion? Why/ why not?
Interviewee: I consider buying circular fashion, but it depends on a lot of factors. The clothing should be of good quality and comfortable.
For me, big argument is like that goes around leather. For example, a lot of people emphasize on using vegan leather and not the regular leather. But vegan leather is just plain plastic, and it does not last at all. It would start peeling in a year whereas pure leather also has an aspect of circularity, good quality or materials like that last long.
I would love to buy circular fashion, maybe when I can afford it, but it must be comfortable, wearable, and practical. When I buy clothes, I do not throw it away until 5-10 years. So, it should last long. It needs to be fashionable. And fashion is not just about the material but also about the looks. I think that is changing now, but when sustainable fashion started, every brand to me looked the same and it was not my style, and they had a very similar vibe. I did not want to buy it because it just I did not like how it looked. And fashion is a lot about visual. So those factors come in play.
And if it is just about saving the earth then I just would not buy it. To me that is a better alternative like to not just buy. Do not buy unless you absolutely need it or absolutely makes you happy.

Interviewer: Why do you think others do not consume it?
Interviewee: Lack of awareness and ease. It is much easier for the consumer to go to Zara and buy something than to search for a circular product. I do not know any brand that is circular. I know if I say circular fashion to my friends, they will not even know what it means. There is a big lack of awareness on what it is.
And accessibility issue, usually anything that is sustainable, or circular is expensive. So, I think awareness and accessibility and affordability are important factors.

Interviewer: Do you think circularity in the fashion industry is a probable solution to the fashion industry's sustainability issue?

Interviewee: I think it is possible, but I do not think it is the consumer or the brand's responsibility to make it big, it is the people who have the money, they need to do something about it. And if these people who have the technology get funding, it could be so much more accessible to everybody. And it can pave way for even more innovation.

Interviewer: Based on the factors listed on the screen, I would like to know your opinion on the factors. Do you believe 'factor 1' to influence (positively/negatively) consumption? If so, how, and why?

Interviewee: I think *age* influences the consumption. This is also related to the *awareness* you have and the spending *power*. I think young people like Gen Z might have the awareness, but they might not have the money to spend on fashion that is more expensive, which is usually sustainable fashion. *Gende*r, I think to some extent, yes. Because a lot of this marketing is focused on women. I do not know a lot of men brands that is focused on sustainability in their *marketing*. A lot of men usually just buy more for convenience, which is why I think brands market sustainability to men. But I think before it was marketed to women, women also did not care about sustainability. So, when you do start the marketing men might care.
Income is the biggest factor. If you do not have the money, how are you going to spend it on sustainable fashion. The income is also based on class, if you are working on two jobs, you might just not have the time to even worry about this because you need to see where your next meal is coming from. These are rich people first world problems.
Circular fashion *awareness* is one of the things where people do not even know all this exists unless you are in the world of sustainability and circularity.
Price of clothing depends on the income and age. I have seen sustainable brands that have pricing that can be compared to Cos, which is a fast fashion brand. Cos has similar clothes and cost as the sustainable brands. So, if you can afford Cos, you could buy sustainable clothes. However, if somebody buys from H&M or Primark, they might not be able to afford more.
Sustainable fashion clothing has really great quality, but I do not know if it justifies the price jump if you do not care about all these social factors.
Culture does play a role. For example, in India secondhand is frowned upon. In developing nations buying firsthand clothing is portrayed as being able to afford to buy new things, because secondhand was their reality without choice. So now if you choose second hand, even though you have the money, it is considered weird because it used to be something that you did not have a choice and hence these people are trying to move away from it.
Availability for sure. I live in a city that has no shops around, we got an H&M three years ago. So, growing up, I had no other option than to buy online from Zara or H&M. Availability is an influencing factor. People living in small towns do not have a choice but to buy something online. And because sustainable clothes are expensive, one might not want to buy without trying. I would not buy a sustainable brand without trying it because half the things I buy do not fit me.
Regarding *transparency*, I do not think a lot of people care, I have seen people H&M conscious as it promises to use recycled fabric. I think there needs to be law against greenwashing.
Sometimes consuming sustainable clothing is just to make yourself feel better. For example, people using blanket statements like, "I use non-leather, so it is better". These blanket statements are very harmful because if you are buying a secondhand vintage leather bag that is good but if a person says that they do not use leather because they care about the animals and the environment but buys vegan

leather bag made from plastic does not make sense because it is not going to be long lasting due to its poor quality.

Interviewer: Could you list any other factors that could be added to the list of factors that hinder circular fashion consumption? And how do these factors act as barriers?

Interviewee: Firms that produce these circular products are small businesses, so they do not have the marketing powers, like Zara or H&M does. People need to invest more in these brands. For example, if people if somebody wants a good bag that lasts forever, they might not even know a circular brand might end up buying a bag from Amazon.

Also *sizing* I am a tall person; I cannot buy sustainable trousers. This is because small businesses cannot have all the sizes in the world because then you get that stock that leads to waste. I think sustainable fashion right now is not inclusive at all because of sizing especially for plus size sizing. Being a tall person, a lot of sustainable clothing does not fit me because it is made for a regular, average size person.

Interviewer: How do you think more demand for circular products could be created?

The sustainable fashion has good fabric, craftsmanship and quality overall. So, it should be introduced to people in an accessible way. Companies can start introducing the fashion at a lower price and when people get hooked on it, then raise it back up by implementing the concept of capitalism. If that would happen, if people could wear sustainable clothing for like an affordable price, they would get hooked. Also, they might feel good because through these circular products you are helping me environment, helping the workers and then once you are hooked you would not mind spending on it later when the price rises.

Interviewer: Do you think the presence of Sustainable Development Goals and EU regulations promote circular fashion consumption?

Interviewee: You cannot force someone to consume circular fashion right. Circular clothing should be made more accessible and fast fashion brands should be charged more money.

Interviewer: How does the lack of consumption of circular fashion prevent the goal achievement?

Interviewee: People should consume less. That is the only way. Mindless consumption never works. Even if it is circular, it is still production. Production means energy. Yeah. It also depends how it is being produced is its clean energy being used, like Netherlands is only 15%. Wind energy. So, to me consumption comes much later. It is all about how are you producing? How much are you producing? What energy are you using to produce? There are a lot of factors.

Consumer 2

Interviewer: How does your company contribute towards circularity in the fashion industry?

Interviewee: Sustainability or circularity and fashion is a topic that came to my attention when I was writing my Bachelor thesis at the current University, I am working. I wrote my Bachelor and Master thesis on this topic and, also consumer behaviour, attitude-behaviour gap. So, after my master's, I went back to the university and I currently work here now in various roles, but always with sustainability. And basically, what I do at the university is I try to integrate and sustainability and circularity into the educational system. And then I work for the Faculty of Business Economics. This is the majority part of my work a smaller part of my work is, I work as a researcher for a project called carnation, which is an abbreviation for collaborative networks in sustainability in the textile industry. There we study for cases in the Dutch textile industry, and basically observing them how they bring together multiple stakeholders and create value for one another.

Interviewer: Do you think circular fashion consumption could contribute towards achieving circularity in the fashion industry? Why/ Why not?

Interviewee Circular fashion consumption can contribute towards circularity in the fashion industry. Then obviously, it depends on how you define circular fashion. It could be about leasing, renting, not owning products anymore. And it is not just about being considerate about how the product has been designed, but also much about what is going to happen to the item after its life cycle. After the consumer is completely fed up with it or it is completely torn. And it needs to be recycled in a way that it become a new product.

Interviewer: What are the different circular fashion consumption methods you are aware of?

Interviewee: There are various circular types. And they all start with the famous 7 'R's. It includes refuse to use new items, reduce your consumption behaviour, reuse the items you already have, recycling the clothing after use. So, making sure that your clothing item does not end up in landfill or gets incinerated, but that it goes to the collection bins that are being recycled, and that we can make new yarns out of it. There are three more Rs in the list.

Circular fashion starts with a circular design that you as a designer are thinking about the product that you are creating and about the end-of-life cycle. Can you return it back as a consumer to the company so that it gets back its raw materials, or it can create raw materials from it? So, extending the lifetime of the product, making sure that you design in a way that it can be dismantled. Basically, sort of optimizing the use of the product. So, after the maximized personal use, one could sell it, rent it, and make sure that when it is completely worn down, then you are able to return instead it gets back into the cycle.

Interviewer: Do you consider buying circular fashion? Why/ why not?

Interviewee: Yes, I would consider buying circular fashion. However, there are not that many circular fashion options out there, yet I do see a rise in more circular in terms of more rental and resale models. I am totally open for anything sustainable and circular. I used to have a MUD jean that I leased and then at some point. So that was one of the things that I consumed, it was circular. At this point, I buy more sustainable fashion, and I recently shifted into buying only things secondhand rather than buying it new in terms of fashion.

Interviewer: Why do you think others do not consume it?

Interviewee: One of the reasons the availability of circular fashion is very limited and probably people need to change their mindset to not own anything anymore, but just to be able to access it. Also, most of the things that are circular happen to be online which is not convenient.

Interviewer: What do you think about the circular fashion consumption in the Netherlands? Are people consuming it actively or avoid consuming it?

Interviewee: I think circular fashion is still, far away from most of the consumers. But it is on the rise, especially with applications such as Vinted, the Next Closet that encourage secondhand shopping. This can be considered as circular fashion as this extends the lifetime of the product but does not necessarily close the circular loop. However, circularity needs a bit more time for consumers to get used to it. Government needs to play a part in it to discourage non-sustainable behaviour.

Interviewer: Based on the factors listed on the screen, I would like to know your opinion on the factors. Do you believe 'factor 1' to influence (positively/negatively) consumption? If so, how, and why?

Interviewee: I do think that *age* influences certain fashion consumption.

I think people from those from the age group of 12-17 consider buying less or to buy secondhand, also because they are dependent on their parents. Maybe when people have an income, in their 20s, they could afford high quality sustainable fashion.

I do think that when you have when you have a higher *income*, you are able to afford circular fashion more, because it is more expensive. And it also depends on what type of circular fashion, if it is renting, and it could come across as more expensive to people.

Awareness and knowledge about circular fashion can really influence circular fashion behaviour. But then again, people can be very knowledgeable and can have a very positive attitude towards buying sustainable or circular fashion. But, acting upon it is something completely different because then then the all the other factors come into play like income might be an issue, availability of the product might be an issue creating an attitude-behaviour gap.

Price of the garment, I do think that is a factor. In general, environmentally friendly products, whether it is fashion or some something else, it is perceived as being more expensive. People do not think about it in a larger picture, they just think about something, they tend to make decisions that are environmentally not beneficial.

Product attributes like quality, style and variety obviously also influences your consumption behaviour. If the product is something you do not like, then you will not lease or rent it.

I think *culture* an influence. Buying is associated with culture, especially with status and some people buying something is a way for them to show that there is wealthy.

Availability goes together with attributes. Sustainable and circular fashion should be available to everyone and not only to a specific group.

If you are talking to the green group, they would be quite critical and would want to know all the details related to production, but the mass would not be so much interested into transparency. What is important for the mass is that it is available and is probably more attractive in terms of pricing. And I think the mass would not be so much interested in transparency. So, I think that there is sort of a divide into whom you are talking to.

Interviewer: Could you list any other factors that could be added to the list of factors that hinder circular fashion consumption? And how do these factors act as barriers?

Interviewee: Fashion is a matter of your identity. For example, buying stuff adds up to your identity outwards to other people, and you can buy stuff, and renting in my opinion, a little bit more associated with people that are not able to afford it, then you rent it or borrow it. So, I think there is an image associated with what renting and leasing is. Fashion is something that tells something about you as a person or you can express yourself through the clothes that you wear. People find it difficult to portray their image due to lack of variety in circular clothing.

Interviewer: How do you think more demand for circular products could be created?

Interviewee: Government could play a role in terms of encouraging entrepreneurs to start a circular business rather than the traditional way of doing business and this intervention could cause brands to shift towards more leasing opportunities or rent opportunities. The brands could request the consumers to bring back their used items and in return provide reward points for it. This would cause a shift from traditional way of only selling items, but also renting out items and leasing them.

Circular fashion consumption process should not become a hurdle in terms of only having an option to search online. And that is why it needs to be accessible. It also needs to be accessible to everyone, not only to those who can afford it, but also to those who cannot afford it. And in that way, maybe it also removes a barrier for people that have a lower income. For example, making renting cheaper.

Interviewer: Do you think the presence of Sustainable Development Goals and EU regulations promote circular fashion consumption?

Interviewee: I do not think that it directly influences certain fashion behaviour. However, it probably does influence the companies to act more circular. In that way to companies can then maybe perhaps provide more circular ways of consuming is probably like an indirect influence.

Interviewer: How does the lack of consumption of circular fashion prevent the goal achievement?
Interviewee: I think it is not the sole responsibility of the consumer. I think it's probably an interplay between the government between consumers, between companies, producers, they all have a part to play.

Interviewer: Do you have any recommendations for the policymakers to improve circular fashion consumption?
Interviewee: Policymakers should create policy where they stimulate more circular consumption behaviour. So that could be making it more attractive in terms of pricing. For example, Extended Producer Responsibility policy in the fashion industry. Maybe a policy that doesn't allow you to throw away textiles anymore, that all the textiles must be collected in separate bins. Although we have clothing bins in the Netherlands. Government should make sure that the garments are collected, recycled and new clothes are made. Also, they can create a law where circular fashion becomes the norm. If the fast fashion companies change their business models and create high quality wear. Then, this could be worn a lot of times, or you can rent it a couple times. This could change the traditional business model towards more circular one, and you create a steady revenue stream.

Non-consumer 1

Interviewer: Are you aware of the circular fashion concept/ circularity in the fashion industry?
Interviewee: I am pretty much aware of the concept of circular fashion. I do not have a lot of idea about it, but I am sure that I have idea that I can answer your question.

Interviewer: Do you think circular fashion consumption could contribute towards achieving circularity in the fashion industry? Why/ Why not?
Interviewee: I think production and consumption are complementary aspects. Both production companies and consumers play an equal role. For example, if the producer keeps producing or keeps maintaining the sustainability by circular fashion and there is no one to buy circular fashion, it will be just an end. I think it is important to have both producer and consumer on equal scale.

Interviewer: So, are you are a circular fashion consumer? If not, what prevents you from consuming circular fashion?
Interviewee: No, I am not a circular fashion consumer. There are two main factors that stopped me from being a consumer of circular fashion. The first one is that I am not aware of from where to buy the stuff and how to approach the shops that have secondhand clothes. The second factor is that I am skeptical about the hygiene that is maintained because it is clearly second hand or third hand

Interviewer: Is the circular fashion consumption in the Netherlands? What is your opinion about it? Are you aware of it?
Interviewee: I know that people here keep a trend of circular fashion because you go to Facebook, you see people renting out their clothes. I see people getting clothes from a thrift shop. I have also seen the secondhand clothing. On these stores, they keep firsthand as well as secondhand products.

Interviewer: What do you think about the circular fashion consumption in the Netherlands? Are people consuming it actively or avoid consuming it?
Interviewee: I think people are more ignorant about it. I think they prefer firsthand clothes.

Interviewee: Do you think circularity in the fashion industry is a probable solution to the fashion industry's sustainability issue?

Interviewee: I think looking at the concept of circular fashion I think if it is implemented in correct way, awareness is spread up to the mark, then I think that this will be something revolutionary in the field of sustainability for fashion.

Interviewee: I can only give you answers on what I observed in past couple of years. I have personally observed that *age* is just a number in case of the Netherlands because all are fashionable over here, I see that it is irrespective of the age, people are lively, they like to wear trendy clothes, they carry them well. So, I think that the age of consumer is a neutral factor for fashion industry. Because it is same for all the age groups over here.

I personally feel that for the Netherlands, *gender* wise, I think females would put a more positive impact in circular fashion than male. And the reason for that is girls are a bit trendier than men are. And fashion has more options and variation for female clothes than that for male clothes. Here, I guess females would leave a positive impact as compared to males. But if you talk with respected and females would have a more positive impact.

Lower the *income* more the circular fashion. Because if I earn low, and if I have an option that I could buy a secondhand cloth, or a fashion that is currently trendy and somebody is willing to exchange that with me, I would be more than happy because I do not have to spend more. I think income would lower; it is inversely proportional. Okay.

Awareness and knowledge about circular fashion: This plays a very major impact. I think awareness and knowledge about circular fashion is now directly proportional. More the knowledge more the circular fashion. So, awareness is directly proportional. And I think it is the most important factor because the more people are aware about it, the more they will put in their opinions, and that will ultimately help circular fashion to grow.

Price of the garment price of the garment would put a positive impact because that is going to be lower than the original cloth. If the secondhand garment is even a euro less than somebody would prefer it over the original price, but few people might think that if it is just a minimum difference, and I will prefer the original one,

I would say that if the *price* difference between the original piece of fashion and the second piece of fashion is minimum or very negligible difference. I would personally prefer the new one. And that is because I am just skeptical about this second hand one. But I feel that it is not worth the difference.

I think the quality is not expected to be very high because they are already second hand it really does not matter to for them to maintain a very high quality, but a usable quality is doable. If secondhand fashion is considered, then style is going to be something that was previously in fashion. When it comes to exchange of clothes or renting is there then I would prefer the latest styles. And variety I can understand it is limited because it depends upon what they get from the people and what people want. So being a customer if there are not many varieties, there is no problem for me.

As far as my family is considered, they say that when used clothes is not good. So maybe that is the reason I never ever thought of buying secondhand clothes, because my family is like it brings you bad times if you were to used cloth, because you have no idea who has won that before. Yeah. So yes, *culture* plays an important role. Yeah. And I would say might have a negative impact.

Availability plays a fair role. Because the availability of sustainable or circular fashion depends upon the awareness, these two quantities are interdependent. And availability depends upon how aware I am there might be 10 stores out here in Delft that sell secondhand clothes, but I am not aware of so I would not be you know, I would say they are not accessible. But that is not the case. They do exist, but I am not aware of them. So, I think it depends more on the awareness that people have about thrift shops or such companies that manufacture secondhand clothes.

I think the lack of *transparency* will have a negative impact. Because if you are not transparent about your manufacturing, or processing of the clothes, then customers would be skeptical about buying it. So, I personally feel if the company is not transparent enough to give me information on how the clothes are processed, or made, then I would not go for that company.

Nobody would buy a secondhand cloth just to impress someone, because there are people out here who do not believe in this. So, I think people are more like they are convinced on the point that buying secondhand clothes will save environment. So, I think it is more of *Biospheric* value plays a role rather than *Egoistic* value if you consider community out here.

Interviewer: Could you list any other factors that could be added to the list of factors that hinder circular fashion consumption? And how do these factors act as barriers?

Interviewee: If you consider the current scenario everybody is dealing with COVID. And people are skeptical about buying stuff at the physical location. If the companies are sure that the stuff they are selling is properly cleaned, maybe using some ultraviolet rays, or I do not know what clothing procedures are. This piece of cloth is a germ free, and you are totally safe to buy it. Because ecofriendly is another thing, but we cannot risk our lives. Yeah, I think hygiene plays an important role, because that is a used cloth or made from something that is recycled. So basically, that is not something original, and that needs to be cleaned thoroughly. So, I personally feel if the hygiene factor is maintained by the companies, it would be much easier for them to sell. So that was my concern about buying second not buying secondhand cloth basic.

Interviewer: How do you think the demand for circular products could be created?

Interviewee: First thing could be price. If the price of the clothing is like very reasonable than the original one, I would be more than happy. I do not care what it is made from. But if the price difference is not significant, and you do not tend to buy that cloth, you always go for the original one. So, I guess this is the thing that companies could play with. That would give them a large market to capture.

Interviewer: Do you think the EU regulations which is regarding the circularity in the fashion industry? Do you think the presence of policies is promoting circular fashion consumption?

Interviewee: So, unless and until the production company follow the policies and release their product, it is difficult to say whether the policies are working or not, because they must be in the limits of the policies design a product, send it to the market and check for the demand. If the product is well accepted by the society, the policies might be done in the right place.

Interviewer: Do you think the current EU policy of reducing the use of raw materials to half by 2030 and reaching 100% circularity by 2050 is achievable? Why/ why not?

Interviewee: I think yes. I think that these goals are achievable because it is a big-time span. It is more than 10 years for the first goal itself. And revolutions happen so if correct steps are taken, and government ensures safe production of secondhand clothes or recycled cloth, exchange and renting of cloth is a good it would make a difference. If circular clothing is directly promoted through social medias for responsible consumption, I think it is a highly achievable for the Netherlands to or EU.

Interviewer: Do you think the lack of consumption of circular fashion can prevent the achieving achievement of the goal?

Interviewee: Yes, of course, because if there are no consumers there is no circularity. So, if you want to continue with the circular fashion, consumers are equally important. So, if there is no consumption then there is no use of circular fashion. So, yes, I think if this angle is given to the discussion, I think customers are more important than producers. Because if there is only one company producing recycled cloth, and there are 1000 buyers, and that is better than you have 1000 companies producing and a bunch of buyers. So, I think that even if it starts with one single company, I think customers will play a major role here.

Interviewer: Do you have any recommendations for the policymakers to improve circular fashion consumption?

Interviewee: I think that the policy should include something about the emission limits for the circular production companies, no forced or wrong promotions for their products.

Non-consumer 2

Interviewer: Are you aware of the circular fashion concept/ circularity in the fashion industry?

Interviewee: I am aware of the circular fashion concepts in detail. I know that its main goal is to have less waste or no waste in a fashion industry.

Interviewer: Do you think circular fashion consumption could contribute towards achieving circularity in the fashion industry? Why/ Why not?

Interviewee: Overall, less consumption of clothing can help achieve circularity in the industry.

Interviewer: Are you aware of any of the methods of circular fashion consumption?

Interviewee: I know some, for instance, the circular fashion companies use recycled materials. Also, when it comes to consumers, they can buy secondhand clothing.

Interviewer: Do you consider buying circular fashion? Why/ why not?

Interviewee: Some brands use recycled materials in the clothes. I am willing to buy that. However, it will not be the main reason I choose the recycled brand or clothes. I think the main reason would be about how it looks like but if I must choose a brand between two options that have a similar style of clothes and similar price, I will first choose the one that would have they recycled materials.

On the other hand, I am not willing to buy secondhand clothes from a private person or through some website. I am not comfortable to buy secondhand clothes, for hygiene reasons.

Interviewer: What do you think about the circular fashion consumption in the Netherlands? Are people consuming it actively or avoid consuming it?

Interviewee: People here are willing to buy secondhand through apps like Vinted that allows consumers to buy and sell secondhand clothing missing. However, there are a few brands that work on these circular concepts.

Interviewee: Based on the factors listed on the screen, I would like to know your opinion on the factors. Do you believe 'factor 1' to influence (positively/negatively) consumption? If so, how, and why?

Interviewee: I think *age* influences the consumption. Younger generation has more acceptance of this concept.

I think people who have lower *income* consume secondhand because they have no option. But people have very high income, might feel that they need to bring something to society. Probably both these groups consume circular fashion but for different reasons.

I do not think *awareness and knowledge* plays a role. Only the who are willing to do something for the environment would consume it.

Price plays a role. If the cost for buying the same clothes with recycled materials is doubled/tripled, I personally would have doubts over consuming it.

Attributes play an important role. But I do not think brands face difficulties to make recycled materials look fashionable.

Availability plays an important role. In my perspective, I am not going to especially search and buy clothes that are circular. If I see them, I am willing to buy it. But if I cannot find them, I'm not going to specially putting extra effort in it.

I do not think a big group of people going to really dig into the transparency aspect that to really see the company is doing good thing or they are greenwashing. When we hear some information, we tend to believe it, and then we leave it there.

I think the values (biospheric and egoistic) depends on a culture for instance, for example, in the Netherlands, people are very individual, so they are very free. So, they do not really care how people look at them. There is no pressure from society. So people tend to do it with reason biospheric reasons, because they really want to be eco-friendly. And if you go more towards Asia, people care how other people think of them and they want to have certain stage in the status in the inner society, so people may be more tempted with because of the egoistic reasons.

Interviewer: How do you think more demand for circular products could be created?
Interviewee: Marketing is important. More promotion of the circular products should be done by the companies producing circular designs. Also, people should be made more aware of this concept. And maybe companies can lower the cost of recycled clothing by proving it at a better price.

Interviewer: Do you have any recommendations for the policymakers to improve circular fashion consumption?
Interviewee: The circularity goals are long-term, but maybe the policymakers need to make smaller plans with a more detailed policy, and they could keep a track every three years to ensure companies reach a certain level in the end to reach these goals.

Circular Economy Strategist 1

Interviewer: How does your company contribute towards circularity in the fashion industry?
Interviewee: I am into the design process and the product creation process. I also work with the mother of the corporate company that focuses on following circular strategies. The corporate company is going to have a opt out policy of how garments are designed so and opt out meaning opting out of a circular system to back to the linear, but they really must get it signed off by very high level. So, I've worked for a few corporates, but this is the first time I really believe circularity is going to be embedded in the current corporate I am working with. I believe that this company is really going to go after high targets.

I have worked for a lot of corporate companies. And I worked as a product developer. I worked with Nike, and in the football department. So many jerseys were being produced and goes to landfill, or somebody collects it, but also there was no take back scheme or recycling schemes, So I got quite conscious of how much I was involved in that in that high production. It started to feel a bit guilty. So that is where my interest like came about. And, as a consumer, I'm definitely buying in a different way. And very conscious of the lack of transparency, about recycling and in Holland, and globally as well.

Interviewer: Do you think circular fashion consumption could contribute towards achieving circularity in the fashion industry? Why/ Why not?
Interviewee: I do believe that if there is no demand from consumers, then corporate companies probably are more reluctant to change their processes. Sustainability and circularity, even though it may cost a bit more, if a company has a wide future thinking vision, they will see it as a business opportunity. I also believe that it is not just the consumers to meet the demand, I do believe that big companies should be making the changes no matter what. Whether the demand is there or not. So, it is both ends.

Interviewer: What are the different circular fashion consumption methods you are aware of?
Interviewee: This company that I am working with now have started a repair scheme, they have also started a takeback model. So, you can send back your old, branded clothes, they will either remake them, refurbish them, or they will upcycle them into something new. For example, like taking it back on garments and then remaking them like from let us say, taking back a pair of jeans making it into a skirt.

Interviewer: Do you consider buying circular fashion? Why/ why not?
Interviewee: I have recently found a UK brand from where I ordered dungarees that had no metal, no hard trims anywhere. But it is made up of all organic cotton. Now I really look for organic cotton but also, I like to know more about where the dyes come from but there is not a lot of transparency on that. So, there's not enough information on circular garments.

Interviewer: Why do you think others do not consume it?
Interviewee: I do think money, social background and your education are the main factors. Also, people still want to look good. And they also consider fashion as a statement of who they are. It is a way to express yourself through your clothing. I think some people will look for stuff that really suits them, and it is not always available in a circular design. So, if companies really pushing every garment circular strategy, consumers would not have a choice.
Some people are loyal to the brands, people are traditional. Awareness is also important.

Interviewer: What do you think about the circular fashion consumption in the Netherlands? Are people consuming it actively or avoid consuming it?
Interviewee: I think there was a law brought out recently that brands are going to have to start taking their garments back, I think the Dutch are quite far ahead, However, they are lagging in terms of recycling. They are not recycling plastic anymore. Despite some stores like H&M taking back clothes for recycling, I think overall there should be bigger transparency on the end of clothing life.

When I recycle the clothes, I put them in a green bin. And I also think there should be more ways to be able to pass on clothing like donation or charity. You need to be on social media to know these things and I am not on Facebook. So, it is word of mouth for me. There is lack of opportunities.

Interviewer: Do you think circularity in the fashion industry is a probable solution to the fashion industry's sustainability issue?
Interviewee: It is a part of it. There are many factors, for example there is a huge demand for polyester. But as fashion industry is second worst polluting, so anything that we do can only make things better. But I also think there is a lot more to it than just making fashion circular. I think the biggest issue is the usage of fossil fuels.
A lot of things are blamed on consumers these big fast fashion companies need to make the changes. These companies are earning billions and billions and have a lot of influence on governments. And a lot of it is being deflected onto consumers whereas there is a bigger problem on a political level, and global corporate company level.

Interviewer: Based on the factors listed on the screen, I would like to know your opinion on the factors. Do you believe 'factor 1' to influence (positively/negatively) consumption? If so, how, and why?

Interviewee: *Age* has a huge influence. The younger consumers are more aware. I think the younger consumers are looking for traceability, they are looking to see where their garment comes from. They are more conscious and are trying to change the current system of unsustainable clothing.

Women tend to look for more sustainable garments. Maybe with the younger generation, *gender* does not have an influence over it. But maybe for the middle to older generation, maybe females are more compassionate based on the books I have read.

Income has a huge influence on circular fashion consumption. Somebody who has more to spend has more options. An individual must pay more for recycled or sustainable clothing that lasts longer and not everybody has that has money.

Awareness and knowledge about circular fashion has a huge impact. The Fashion for Good in Amsterdam is an opportunity to bring about the awareness. People do not realize that piles of clothes go into the landfill. Even the soil gets damaged due to the seepage. Abundant amount of water is used to make cotton. There is not a lot of knowledge about that. There definitely needs to be a point where there is more awareness and knowledge.

Price of the garment. The companies have their margins. When you work for a big brand, the margin prices are so important for shareholders. The price of the garment does impact consumer consumption because that brand must make an X amount of markup to keep their shareholders happy.

I do think there is *variety*. I also think we have not seen enough truly circular products yet. Many people have thought of sustainable clothing as hippy clothing. Recycled fibers are not as strong, they do not last as long, and the color runs out quicker. Also, to achieve a certain color level with recycled fibers, some, producers dye the clothing three or four times to keep the color levels which completely is not sustainable. Quality wise, recycled fibers are not as strong. So, there's issues with durability and recycled fibers breaks down faster.

I think *culture* does play a role. It all depends on who you who you hang out with, and what is available around you. And all influences you and how you buy.

There is a lot available, but it can be very expensive. For example, upcycled dress cost 200 euros. So only a certain type of customer can afford it and it is not available for everybody. And I think it is mixed, there is also this whole greenwashing.

The fashion influencers on social media influence a lot of young kids. And it is not always just to be ecofriendly. It is probably to gain as many views and as many shares as they can on social media. So *egoistic* value plays a role. Personally, I have changed my shopping habits. And I do find it so hard to throw things out. But it is to make me feel okay, so that is selfish. Otherwise, I end up feeling guilty.

Interviewer: How do you think more demand for circular products could be created?
Interviewee: If people were taught to repair items, for example kids being taught to sew up the holes in their jeans. It is about educating people to keep their product in use more. And really making them understand that it is not necessary to throw the clothes out if repairing is a solution. It is also about emotional durability. For example, I have garments in my wardrobe that have been in there for 15 years, and I cannot throw it out because either I love it for a certain reason. Having that emotional connection would help people keep the clothes for longer. People could probably wear their old clothes at home.

Interviewer: Do you think the presence of Sustainable Development Goals and EU regulations promote circular fashion consumption?
Interviewee: I would say some consumers maybe. I would say it is 50-50. Other consumers do not even know that these policies have come out. But if you are working in the fashion industry, that is a different scenario. The people working in the industry are usually consumers of sustainable or circular fashion.

Interviewer: Do you think the current EU policy of reducing the use of raw materials to half by 2030 and reaching 100% circularity by 2050 is achievable? Why/ why not?
Interviewee: It is a reasonable target. However, reduction of raw materials might be difficult. For example, not a lot of organic cotton is being produced. There is more demand for fossil fuel in terms of the polyester fabric. And the population is going to increase, and people need clothes. Huge

changes would need to come, huge investments into technology, farming. I do not believe that will hit the raw material raw unless there is a huge change in technology and pushing farmers like we are losing we have lost 1% of our topsoil globally. More sustainable steps in terms of farming should be taken.

Interviewer: How does the lack of consumption of circular fashion prevent the goal achievement?
Interviewee: I think it can think if corporate companies take responsibility, it does not always have to be the consumers. It is important to reach a stage that consumers have no option but to buy a circular product. If these companies continue offering non sustainable items to customers, they are there to be bought. If the policies are stricter, for example in Holland, you can let retailers only sell circular products.

Interviewer: Do you have any recommendations for the policymakers to improve circular fashion consumption?
Interviewee: Probably policies that could come upon a cap on how much people buy. So that we are limited to the number of new garments we can buy. But this is kind of extreme. Making a cap on bulk production, I think and limiting companies into what they can waste. And then it would push for more circular opportunities. For example, corporates should know how to construct clothing that is easy to be repaired. So, by capping on the production, you could keep that garment in use, and maybe make an upselling it to a new consumer who sees value in it.
Companies producing orders based on last year sales or predicted sales is not a sustainable model. Local for local production can be good idea. If you can order to make. There are companies that do that, and they only start producing their order after a certain number of sales have been made.

Circular Economy Strategist 2

Interviewer: How does your company contribute towards circularity in the fashion industry?
Interviewee: I am an entrepreneur. I am a circular systemic fashion designer and expert. I try to contribute to a more circular system and a way of thinking for the textile industry in all kinds of different projects. For example, I host the circular fashion podcast and right now I am working on some research projects around the circular protective gowns, mouth masks for healthcare.

Interviewer: Do you think circular fashion consumption could contribute towards achieving circularity in the fashion industry? Why/ Why not?
Interviewee: If it is not available, you cannot consume it. It starts with a new system, and circular production. According to me, it is unfair to put so much responsibility in the hands of people without the proper knowledge, finances needed to consume circular fashion. And right now, circular fashion is not existent. Circularity is also very complex and very complicated because sustainability happens on so many different levels. For example, one could feel good about consuming a bio cotton t-shirt but the production of it is way more impactful for the planet than regular cotton which is not sustainable. In my opinion, we need to change the system to help the consumer make other choices, in that sense, that they do not even have to choose anymore. If the fast fashion system was not created at all, the consumer never had the choice to buy the bad stuff.

Interviewer: What are the different circular fashion consumption methods you are aware of?
Interviewee: Circularity is something that starts at the very beginning of the product. So, if you rent something, it is not circular. Because we do not know the way in which it was produced. And all those steps are important. The rental stores are not as sustainable as we think it is because rental stores need so many new pieces of clothing every week to stay interesting. Through swapping you can sell your clothing at Marktplats or Vinted, but it is not sustainable if people keep consuming more. And in terms of circular models, the only one that is busy with a circular model right now is MUD Jeans in the Netherlands. Also, Brightloops makes a wool jumper also as circular as possible.

But circularity requires a whole change of systemic thinking. If consumers buy a pair of regular jeans not specifically sustainable and they just wear it forever, that is more sustainable than someone that just buys a T-shirt of bio cotton and is done with it after three months and puts it on Vinted app.

Interviewer: Do you consider buying circular fashion? Why/ why not?
Interviewee: I have a whole different way of looking at fashion. I do not rent, I do not buy clothing to sell on Marktplats or Vinted, I do not swap my clothes because I buy things that I really like that could last for a long time. I check materials and composition of the things I buy on durability. What you can buy sustainably is still a very small amount of everything that is available. I first try to see which labels make things that I could fit in and that I like. Then, I go see the composition of the material and make a choice based on that. And I spend money on my clothing because I do not buy much to ensure it is good quality.

Interviewer: Why do you think others do not consume it?
Interviewer: We do not have one type of consumer. There is a very big group of very smart, educated, wealthy people that make real good choices. But the biggest part of the world is just people that need to get by every day and make sure they have food for their kids and that they can pay their water and their electricity. We should create the solution for them to be able to consume in a better way, that is beneficial for the planet and in the end for all of us. They do not make individual choices; they make systemic choices based on what is available and the money they have. People who are involved in the fashion industry should take the responsibility and change the system. Focusing on the consumer is postponing the responsibility of the production side.

Interviewer: What do you think about the circular fashion consumption in the Netherlands? Are people consuming it actively or avoid consuming it?
Interviewee: There is a group of smart, educated, wealthy people that make sustainable choices.

Interviewer: Based on the factors listed on the screen, I would like to know your opinion on the factors. Do you believe 'factor 1' to influence (positively/negatively) consumption? If so, how, and why?

Interviewee: I think younger people they learn in school more about sustainability. They are aware of a planet that is maybe not as healthy as they hoped for their own future.
Based on *gender*, I see fashion influencers on Instagram are all women. It probably starts there. Men maybe start a little later, but they are very loyal to brands. So, they could be a good target group for sustainable fashion.
Income is a key factor and just only because sustainable fashion is more expensive. But it is just about headspace. If you have less money, you have less headspace for the kinds of processes in your mind.
Awareness and knowledge about circular fashion. At the same time, I do not think we should create more awareness and more knowledge. Because I do not think everyone should have that knowledge or awareness, it is not necessary to create a new system. So, if we just let people do what they are good at, and what makes them happy, then the people that have the awareness and the knowledge should change the system.
In terms of *price*, I do not think if sustainable fashion is cheaper, it will sell more. It is just a mind shift that you can make, like, do you need a lot of clothing or just need some clothing of good quality and maybe a good place where it comes from. I think that is something we need to work towards, in general in the whole system that we do not consume a lot, but we consume what we need.
Product attributes are 100% important. There are a very few brands that make sustainable fashion So there is not sustainable fashion for every style, body type, age. But because it is not available now, you cannot buy it. Most of the brands make things that I would not wear. So, it depends on that. Sustainable clothes for the younger generation are available but for women beyond 35, it is very

difficult to buy well-made, well fitting, sustainable fashion. Quality style, and variety is a huge issue right now.

For the group of people that is consuming sustainable fashion, *transparency* is important. And transparency, and circularity go hand in hand, because we cannot create circularity if you are not transparent. But at this at this moment in time, it is important for brands to show what they do, and what they do not do and why they do it. for that specific group of consumers that does a lot of research.

I am not sure about the egoistic reasons but most people I know consume sustainable fashion for biospheric reasons and not for egoistic reasons.

Culture plays a role in the consumption; the culture of your social group influences it. Think it's mainly if you get in touch with it or not. And if you do not have so much money, and your If your friends and family is not interested in it, you probably not don't go to shops that produce the sustainable clothing.

Interviewer: How do you think more demand for circular products could be created?

Interviewee: I do not know if we must create a demand for it. I think we just need to produce better stuff. Because there can be this huge demand of a lot of people that want something. But if they go around town or online, and they cannot find it, they buy something else.

Interviewer: Do you think the presence of Sustainable Development Goals and EU regulations promote circular fashion consumption?

Interviewee: I think a very small number of people are influenced by it. You must read about it and be interested in it from the first. I do not think a lot of people know about the Sustainable Development Goals.

Interviewer: Do you think the current EU policy of reducing the use of raw materials to half by 2030 and reaching 100% circularity by 2050 is achievable? Why/ why not?

Interviewee: I do not think we can achieve it if the system continues to function the way it currently is.

Interviewer: Do you have any recommendations for the policymakers to improve circular fashion consumption?

Interviewee: I do not think they should use their money to influence people to consume more sustainably, they should use their money to make sure that there's only or mostly sustainable clothing in the shops. They just can make laws regarding the non-usage of materials. Also, if government tries and makes laws to force labels, and brands to be transparent, that will help a great deal.

Sustainability Consultant 1

Interviewer: How does your company contribute towards circularity in the fashion industry?

Interviewer: I am working for a consultancy company. And here I work with the teams and topics of sustainability and circularity but mostly within businesses in sectors like the building sector or food and beverage industry.

Interviewer: Do you think circular fashion consumption could contribute towards achieving circularity in the fashion industry? Why/ Why not?

Interviewee: I think if the consumers are responding, then the market will start running. Because that is always how the economy works. When you put something in the market, and when the demand increases, the companies will produce more, and the infrastructure around it will be developed accordingly. It is a linear economy now.

Interviewer: What are the different circular fashion consumption methods you are aware of?
Interviewee: Offers in the circular fashion principles, the ones I use are close to the 'R' strategies. Basically, you want to decrease the resources use, you want to increase the use, and then principles or strategies are for example, like renting, but also repairing and sharing, having these you know, older new apps like Vinted doing swaps. At the end, the producer being responsible for the product that they put on the market and taking it back and then try to find a way how they can still use the material and then this way, just like downgrade towards recycling. second hand is a great way too.

Interviewer: Do you personally consider buying fashion through the circular methods?
Interviewee: I often use second-hand clothing. And I also really like to swap clothing.

Interviewer: Why do you think others do not consume it?
Interviewee: I use circular ways of consuming like doing secondhand. But it costs me much more time. So, if I just want something at this moment, I have a need for a particular type of clothing, I am not sure if it would be available in the second-hand market. Moreover, it becomes more difficult if it is a weekly market. Then, I will have to wait for it too. Also getting clothes in terms of color or type preference is not easy.
When a consumer goes shopping, they usually have a list of things they need but they do not know if they would eventually find it. This need may arise due to social media or influences and not necessarily due to the requirement of a clothing. I think it is just an easiness and the comfort of fast fashion that you can buy exactly that thing you need. Circular fashion is not easily accessible.

Interviewer: What do you think about the circular fashion consumption in the Netherlands? Are people consuming it actively or avoid consuming it?
Interviewee: I think it is low. They are a little bit more aware about these topics. And I know that they partially buy maybe secondhand just because they like it or they like the vintage style. I think the consumption is low because of the accessibility and also because it really needs like that intrinsic motivation for you to know why you do it for, and then find the places where you can get it.

Interviewer: Based on the factors listed on the screen, I would like to know your opinion on the factors. Do you believe 'factor 1' to influence (positively/negatively) consumption? If so, how, and why?

Interviewee: The *age* of the consumer, positively influences the circular fashion consumption because I think the younger generation X, Y, Z is much more into awareness about climate and the impact of fashion. So, the younger people more with it than the older people that are from the other generation.
I would say *gender* could be considered as neutral.
I think if you have a lower income, you are going to be more creative of how you buy things and you take the time of finding second-hand items. And If you have a high income, you may buy expensive new clothing like high quality sustainable fashion.
If you have *awareness and knowledge* about not only circular fashion but also about the impact people would certainly act differently.
I think if the *price* is lower, consumers will buy more. And if the price is higher, but sustainably sourced and circular, and people would be less likely to do it.
Before when something looked recycled, or looked second-hand or reused, people were less likely to buy it. And quality is always an important factor. When it comes to product attributes, there has been a shift. Nowadays, people are into vintage due to a different style.
Culture has an impact. because if you are surrounded in an environment. The culture where you are surrounded with will have an influence on knowing about it and having interest in it. And yeah, all of that.

I think availability is an important factor. When the availability is easy and accessible, and the consumers know how to find it influence their consumption. Because if they maybe want to change their consumption, style, but they just do not know where to begin because of lack of availability. So positive.

Transparency also increases awareness which is important to change consumption patterns. So if transparency from these brands, people get more aware. And with that awareness, they can make different choices. But this would help making them choose other sustainable alternatives. And I'm not sure if it would really increase circular alternative because that's a step more.

Egoistic value for sure plays a role, as it adds to an individual's social status. The biospheric value plays a role for people who are already very aware and eco-friendly in general.

Interviewer: How do you think more demand for circular products could be created?

Interviewee: I think businesses are smart enough now to first invest in better sustainable alternatives. And then also get it into the markets and try hard enough until people would respond. But it is a slow movement. And then you have the pioneers that are not making the money yet, but they just invest in these circular designs because it is in their core principles of what they do and what they believe in. And, by showing the people the damage circular fashion does and by making people aware so that they can make other choices. So, I think this transparency in this awareness would give people more grounding, whereupon they can make other choices.

Interviewer: Do you think the presence of Sustainable Development Goals and EU regulations promote circular fashion consumption?

Interviewee: I do not think that people will be responding to these regulations. But I think that the businesses in terms of what they sell what they produce would have an impact. Because if they are responsible for the product that they put on the market, they pay for their emissions and waste, they would eventually be more responsible. I also really believe that the policies should be stricter and the regulated. Right now, it is very difficult for the government to track.

Interviewer: Do you think the current EU policy of reducing the use of raw materials to half by 2030 and reaching 100% circularity by 2050 is achievable? Why/ why not?

Interviewee: Right now, the policies do not have concrete regulations for the industries. I want to believe it is possible.

Interviewer: How does the lack of consumption of circular fashion prevent the goal achievement?

Interviewee: Behavioural change of consumers depending on what happens after you sell your product is much more difficult and would need a nice longer time. But it would have an influence.

Interviewer: Do you have any recommendations for the policymakers to improve circular fashion consumption?

Interviewee: I would recommend the policymakers to make policies that re more applicable and not abstract. They could create a roadmap based on the current situation and the final goal. The government could spread awareness about the impact of the current fast fashion consumption and about the alternative sustainable and circular options available. Also, they could provide funds or subsidies to the startups that produce circular designs.

Sustainability Consultant 2

Interviewer: How does your company contribute towards circularity in the fashion industry?

Interviewer: I work as a strategist and advisor in a consultancy firm that help organizations create or increase their impact. We work on one hand with organizations that already have a very clear vision on what their contribution and what their role in the society and in ecological world is. We help organizations work on their sustainability strategies.

And I have a background in branding and building brands. While that is a very important aspect and I think that is also the case for building organizations. But I also think the case in building industries or changing industries and I think that the fashion world is one of the industries that falls far behind. Last year I followed a short course in circular fashion. Well, there is a lot of change going on already, the production processes are being changed and there are a lot of possibilities to, to sustainable lies the fashion industry already.

Interviewer: Do you think circular fashion consumption could contribute towards achieving circularity in the fashion industry? Why/ Why not?
Interviewee: Certainly. Although, the producers of it also have a role in the consumption phase. Ending the chain at consumption would mean living in a circular way. So, the loop must be closed, and consumers cannot make decisions in more sustainable clothing, more clothing that that they can wear longer. This includes decisions regarding clothing that includes not buying clothing that is made up of a combination of very all different materials. They can make choices in their buying decisions, and that they cannot choose what to do with clothing they cannot wear anymore if the offering is not there. So there should be a to be a better repair system. an easier one and different drop-off points for recycling so that you can choose to not deliver your old clothes in the trash.

Interviewer: What are the different circular fashion consumption methods you are aware of?
Interviewee: We see leasing constructions, for example, there, there are already some initiatives being thrown in baby and kids clothing which is a very good variable as children and especially babies, they do not play outside, so that the clothing is not broken or something when they grow out of it. Through the leasing model, one could pay a rental fee every and get different clothing. This brings the material back to the to the factories and to the retailers so they can repair clothes, but they can also bring it back to new clothing and can build a system around it so that materials do not go to waste anymore. Mud Jeans is one of the great examples of circular fashion already, and they also have kind of leasing models so that you don't buy a jeans anymore, but that you kind of rent it.
Also, some brands are on the forefront of sustainability. Patagonia, for example. The secondhand chain Het Goed announced cooperation with in which they would sell a special label within Zeeman stores that contain the second-hand clothes. These types of movements would change the industry in a sustainable direction.

Interviewer: Do you consider buying circular fashion? Why/ why not?
Interviewee: Personally, I buy whatever I can buy secondhand. Mainly online through Vinted and the Next Closet and if I cannot buy secondhand, then I buy the new clothing through sustainable brands. And I also pay attention to the materials made they are made from because materials like polyester are clearly cause a lot of waste and micro plastics. And making circular choices can happen on different aspects which makes it even more hard to consume.

Interviewer: Why do you think others do not consume it?
Interviewee: It is not easy. You cannot just go into the shopping street and buy whatever you want. That is the main reason.

Interviewer: What do you think about the circular fashion consumption in the Netherlands? Are people consuming it actively or avoid consuming it?
Interviewee: I think that it is moving very slowly. And in a world where the materials are so sparse, fast fashion is still like being promoted.

Interviewer: Based on the factors listed on the screen, I would like to know your opinion on the factors. Do you believe 'factor 1' to influence (positively/negatively) consumption? If so, how, and why?

Interviewee: *Age* of the consumer have an influence on circular fashion consumption. In general, the younger people from the millennial generation commonly make sustainable choices as compared to the older generations.
The people with low *incomes* can consume second-hand clothing for example the Zeeman store that has collaborated with Het Goed. But in general, people with higher incomes, have more abilities to adopt something new, faster, and new things like Mud Jeans, for example. It is not a very cheap kind of jeans.
Awareness and knowledge about circular fashion has an influence. Once you are aware and people know what is going on and know that the very bad side effects of wearing cheap and unsustainable clothing that they act accordingly. However, from research when people know things, it does not always directly influence their buying behaviour. I think you have to offer an attractive alternative as well. Sustainability itself does not sell.
Culture plays a role. To like to fit a group that you want to belong to is of course, a very important aspect.
Transparency is never the first reason to buy something. People will only buy fashion products in relation to quality, style, variety.

Interviewer: How do you think more demand for circular products could be created?
Interviewee: First, attractive sustainable solutions on scale would help. Second, CO_2 pricing through governmental regulations so you pay more for products containing virgin materials. These can work and force producers to look for materials other than new ones.

Interviewer: Do you think the presence of Sustainable Development Goals and EU regulations promote circular fashion consumption?
Interviewee: Big companies and retailers, for example, are already preparing for those agreements, becoming laws, and then they have to act on it. First, the retailers and the production side have to change, they have to change their offerings. And that happens because of these regulations. And then when the offering changes, demand will change as well, because people see new solutions and maybe cheaper. I don't think that consumer demand will change because of the fact that they are aware of these regulations.

Interviewer: Do you have any recommendations for the policymakers to improve circular fashion consumption?
Interviewee: I think a price regulation on the use of unsustainable products. Policymakers should use interventions to boost the real price on things. Because that is where the idea of all materials in the earth are for free started with and went wrong.

Circular Fashion Entrepreneur 1

Interviewer: How does your company contribute towards circularity in the fashion industry?
Interviewee: Yes, we produce circular, basic textiles and we sell them. Okay, so we make items from recycled, well, Virgin, organic, but also from recycled cotton. We try making items that can be are partly recycled and could be recycled after use. These items are made in a way that they are easily and fully recycled. So, they are circular by design but also part of it is made from recycled cotton.

Interviewer: Do you think circular fashion consumption could contribute towards achieving circularity in the fashion industry? Why/ Why not?

Interviewee: Without consumption, there is no use of the items. So, consumers must buy in the ends or use the items. So, it is crucial but also there is business to business consumption. These are the two main groups. For example, by supplying to hotels or companies. They can also act as the main actors in consumption. Hotels is a good example hotel and buy textiles like towels, sheets, bed linen. And they are the one buying it and consumers just using it, there is no choice, So the influencer is the hotel. Same thing goes for airlines. Some of them use little towels in the airplane. Here, the airline is the one deciding not the consumer.

Interviewer: What are the different circular fashion consumption methods you are aware of?
Interviewee: There is a hierarchy of sustainability in textiles based on the impact that includes the 7 R's like reduce, reuse, recycle, etc. That is an important guideline. If consumers have that in mind, and start at the top, so I can reduce buying or using textiles, that has big impacts, then buy less, buy better quality clothing that might last longer, and then reuse.
Also, clothing allows leasing, LENA, for example, in Amsterdam. That saves a lot of impact. But there are also these lease models like MUD jeans that makes jeans using recycled materials. There is also a model, Vanhulley, for example, where you can recycle your clothing. You send in your old blouse and a boxer short is made from it. And you can give it away as a gift somebody else So that is an interesting concept of remaking items with a commercial business model underneath it. And it's interesting that it's done locally.
Recycling materials directly from consumers is more difficult. Because the most items in the Netherlands are put in the collection bins. And it is a big heterogeneous pile of items. There are all kinds of clothing in there. So that is the complicating factor. It is not homogeneous. So, all these things are ended up at a couple of sortation companies like Sympany and Frankenhuis. After the collection of the items, the items are filtered out and by hands, which items can still be used and can be sold to mostly other countries. That is one component. And the rest is sorted for if it can be recycled or not. But it is very complex because most items are not designed for recycling. As they consist of multiple materials, like polyester and cotton and buttons and zippers and all kinds of things. So that is complicating the recycling whereas items that are made up of 100% one type of material like 100% cotton, they are eligible for recycling, the others are basically not.

Interviewer: Do you consider buying circular fashion? Why/ why not?
Interviewee: Yes, I do, I buy items on recycled material, if possible, but it is more expensive than then noncircular items and that is a big issue Well, my motivation is that the textile industries is a very much polluting industry. It is the second most polluting industry in the world. So, and I personally believe that should change.

Interviewer: Why do you think others do not consume it?
Interviewee: One is unawareness. Second, I think could be non-availability of circular items. third item would be price. I think these are the three mains.

Interviewer: What do you think about the circular fashion consumption in the Netherlands? Are people consuming it actively or avoid consuming it?
Interviewee: I think it is increasing. But still very low. I think there is a certain group, which are the front runners actively looking for it and consuming the conscious fashion and textiles. And then there is a group of followers who just consume because it's there who just buy what is in front of them and are not really aware. But I think the group is growing that is actively pursuing circular or sustainable fashion items.

Interviewer: Based on the factors listed on the screen, I would like to know your opinion on the factors. Do you believe 'factor 1' to influence (positively/negatively) consumption? If so, how, and why?

Interviewee: The *age* has an influence. The younger population is more aware of sustainability. I think it is a positive impact.

In terms of *gender*, female population is more into fashion, going to textiles and more aware.

As recycled fashion is more expensive relatively. more i*ncome* will help to buy more circular items. Awareness and knowledge about circular fashion plays an important role. However, if you are you are aware that you need to buy something circular and you are into it, then it is difficult to understand where it's available.

Price of the garment is a big influencer. It has a negative influence. Higher the price, lower will be the consumption of circular fashion.

If you look at the product attributes, typically the *quality* is lower in most items. Right. Recycling damages the fibers, in general, right. It is the current state of the industry. So, the lack of quality has a negative influence on the consumption. Circular products obviously have less variety as compared to mainstream fashion, because the circular industry is very little part of the total. However, if you have a great designer who makes circular and non-circular items, they will eventually make nice items.

I can give you an example, for example. People in US people do buy secondhand clothes, and it really is not because they have low income. But back in China, buying secondhand clothes is kind of a degradation that you are buying a used item, or you're looking forward. I agree that culture has an influence.

It is difficult to understand for people where circular fashion is available.

It is hard to really trust claims, even with certificates. More *transparency* will influence positively the use and consumption.

I think both biospheric and egoistic values play a role in the consumption. But I think the first one is currently dominant.

Interviewer: How do you think more demand for circular products could be created?
Interviewee: I think government legislation, for example items that have recycled content should pay less taxes like VAT or import taxes, duties these are kind of on that's on the on the producer side that they're less expensive. And, that there should be something like when you that when you buy an item, certain items, that it also has to be recycled, so that you pay a certain fee as a consumer, maybe 10 cents or 20 cents per item that goes into the fund that recycling can be done.

Interviewer: Do you think the presence of Sustainable Development Goals and EU regulations promote circular fashion consumption?
Interviewee: Yes, it has an impact. I think the policy will affect the companies that produce items or sell items. Not so much the consumer but indirectly.

Interviewer: Do you think the current EU policy of reducing the use of raw materials to half by 2030 and reaching 100% circularity by 2050 is achievable? Why/ why not?
Interviewee: I think it is challenging. And there is also a difference between the type of materials right, if you look at polyester, is easier to recycle than cotton, for example, and 50% of all the items in the world are made from polyester or but 30% is cotton, roughly. So, no one answer to it.

Interviewer: How does the lack of consumption of circular fashion prevent the goal achievement?
Interviewee: I do not think consumption is the biggest issue. I think production is the biggest issue and availability.

Circular Fashion Entrepreneur 2

Interviewer: How does your company contribute towards circularity in the fashion industry?

Interviewee: I am the founder of X clothing brand. We started the brand 1.5 years ago with a vision to contribute to a circular society in the Netherlands. We try to approach the average consumer and to find out the motives behind their purchasing behaviour and their perception of the industry in general? Along the way, we developed our own circular t-shirts together with a partner in the region of Tilburg. And what we learned along the way is that circularity in general, has a lot of commitment from all levels, like policymakers, NGOs, but also industry leaders. Along the way, we also discovered that there were plenty of challenges to address before circularity would be a reality for our brand. So, what we also realized quickly is that recycling technologies offer a bottleneck at the time being in establishing or like enabling 100% fiber to fiber recycling. So, what we learned along the way is that 40% recycled content, for example, is in terms of recycled cotton is like a maximum that we could achieve right now or physical products will kind of diminish in quality standards that the market requires still. So recycling is a challenge area. And then logistics is also an area that we identified as being challenging, but the most challenging, we think, is customer engagement, because there is still a very strong stigma around circular fashion, because it kind of requires for this change of perspective from a consumer and on what fashion means and how it is experienced. So, along the way, during these 1.5 years, we kind of pivoted from just a physical brand to more like a software idea, where we are now developing a web-app that kind of aims to make circular fashion tangible for the average consumer.

But what we kind of want to do to position our startup is to take the angle from like a community user centric approach. So that is why also this area of research really resonated with me, because I think that there is a lot of innovation happening in the industry. But that has yet to be a player that takes this user centric approach and creates demand for circular products. Because I think that is what is lacking right now. There is a lot of innovation being pushed from the industry to the market. But I do not think there's a thorough understanding amongst customers what it means to consume in a circular manner. So, I think that is, that is where we are right now. So, we are currently the company's currently running a pilot in developing this web application. And we want to test if it can increase engagement levels at users at some point in the near future. But yeah, that is, that's the overall summary of what we're doing, and why I think this subject is highly relevant to us as well.

Interviewer: Do you think circular fashion consumption could contribute towards achieving circularity in the fashion industry? Why/ Why not?

Interviewee: I think it is highly crucial. I think there are two crucial elements of circularity, one of which is production. The other one is consumption. I think production has a lot of focus right now in terms of technology and in terms of how we can retrieve fibres and reprocess them in a in a circular manner. But I think consumption in general is under-rated. There are a lot of standalone circular business models, for example, like rental services, or swapping services, or actually some t-shirt brands who offer like a circular promise to their customers. But I think that is all like standalone. I do not think there's like an integrated, holistic experience that supports the consumer in acting in a circular way. So, I feel like that there is a lot of focus on the technical side of things, logistic side of things, the production side of things. But I think that the use phase in general is still under undervalued and there is not enough. Well, there is clear imbalance in if you compare those two.

Interviewer: What are the different circular fashion consumption methods you are aware of?

Interviewee: There are a lot of start-ups that have a deposit system. They are usually designed and developed with circularity in mind. So that means that they are either biodegradable or mechanically or chemically recyclable. Second, Swap Shop idea where the company owns an inventory of garments and then swaps it out amongst its consumers. So, what happens there is that consumers are all also free to bring in their own clothes that are then processed into like the circular model and rented out and swapped with different customers. Third example would be just rental models. I think

Adidas recently, a few weeks ago, announced this rental model where they would rent out clothing. This would allow the service to rent a specific outfit for a specific purpose. And I think an overall resale should also be considered as a circular option. So, there is a company in the UK Farfetch dedicated to resale. There is an online platform Vinted in Europe, big in the Netherlands as well, which is all about reselling your old clothes that you do not use anymore. Even though customers might not realize it is part of circularity, but garment repair and tailors have a crucial role to play in circularity as well.

Interviewer: Do you consider buying circular fashion? Why/ why not?
Interviewee: I have bought a circular pair of jeans from Mud Jeans. Overall, my experience with that product is that the fabric is a bit thinner due to the use of recycled cotton as compared to my other pairs of jeans and because they don't use any letter or decoration, the label already eroded. I think the pair of jeans is very circular. The last product I bought was a pair of shoes from Adidas and they used like recycled content. And they applied Zero Waste pattern design. The edges or the finishing of the product has been a bit unique because they wanted not to waste any cutting during the pattern creation process.

Interviewer: What do you think about the circular fashion consumptions situation in the Netherlands, do you think people are actively consuming it or not?
Interviewee: I think there is a growing momentum amongst Dutch consumers for slow fashion, more sustainable fashion, higher quality fashion. But I think for circular fashion specifically, maybe there are some early adopters, maybe there is a niche of people who consume fashion in a circular way.
I think circular consumption takes more than just the product. So, I think that even if you would want to consume a circular product, your options would be limited, relatively seeing.

Interviewer: Do you think circularity is a probable solution for the sustainability issue in the fashion industry?
Interviewee: I think there is a huge variety of issues. And I think the overall issues are wicked problems, so they touch upon economic, cultural, political, you mentioned like a lot of variables. So that makes it very complex to find a simple solution. I would argue that circularity has the potential to resolve most of these challenges. But I also think that there is no such thing as one size fits all and especially if you take into account the complexity of fashion supply chains in general. They usually are global. So that means that also the number of variables cultural, political, economic, social, environmental variables. There are plenty so I think it is very challenging. I do not think circularity will be a silver bullet. But I think like the old, the overall philosophy of approaching garment design approaching a value chain with circularity in mind, I think that fundamental shifts from an economic perspective, from a linear to circular economy, I strongly believe that this circular philosophy and mindset will eventually offer as a viable alternative to a wasteful economic model.

Interviewer: Based on the factors listed on the screen, I would like to know your opinion on the factors. Do you believe 'factor 1' to influence (positively/negatively) consumption? If so, how, and why?

Interviewee: I think I think *age* influences consumption. I think that throughout your youth and your early 20s, and then late 20s, early 30s, your consumption kind of shifts, depending on your own personal values. So, I think it has a strong side, psychological element to it. And so, if I look at my own experience, when I was younger, what I was buying in terms of fashion, and in terms of brand was largely dependent by my environment. So, I would not say that I was more sensitive to what my peers in high school were wearing and kind of picked and matched, like my own style, based on what I liked about that. But it also relates to age as you get older, you usually spend your money differently, I think. So, I could tell that in my early 20s, I shifted away from this more environment-based consumption to consumption, where I was really looking for *quality*, and for long term*, longevity* in

general. So, I would say that throughout, throughout my youth, and as I got older, the average lifetime of garments might have increased. But that has to do with the fact that the older I get I'm thinking about what I'm buying. And, the ratio changes, like most of my own closet is now long term.

Gender does play a role. From a sense that I noticed like a quite a big in terms of volume, most of the fashion is being consumed by female consumers. I also think the way that I as a male, I'm consuming fashion, it's from a much more practical perspective. If I need a pair of jeans, I need a pair of jeans, I don't matter I don't really mind care much about the story or whatever, behind the brand. But now well, in the last two years, that kind of change because I am involved in this whole transition in the industry. So now I do care about the brand and the story and the impact and whether it's circular yes or no. But five years ago, I would say that the way I was consuming fashion was also more functional. And I also think that in general my goals might be smaller than the average female consumer. And that is no I do not want to be judgmental towards everyone else. But if I look at my sister, for example, she has more clothes than I do. I think the overall variety of garments in a men's closet are fewer than in a female closet. So, I think that that the overall amount that that I personally consume, as a male is fewer than then the average female consumer. But I would leave the environmental aspect out of it because that has to do with my work. And this is based on the research I have been doing over the past two years, and not necessarily with my gender, I think.

Through our research in the past two years, we have also identified this lack of creating demand in a way that our users that we interviewed, our potential customers, they all indicated that their knowledge about sustainable fashion in general was limited, and that the main thing they cared about was if you to find out if it was a sustainable product, yes or no, where it was sourced, and what the sustainability impact then would be. But in general, no one was really mentioning the term circularity, let alone even knowing what it means. So that was an observation we made about one and a half years ago already. I think, as with any behavioural change, I think there is a very strong *awareness*, awareness element to it that makes people change behaviour. I think it is also in terms of fashion consumption. The awareness to action framework goes from awareness to understanding to commitment into action. I think that funnel applies to circular fashion consumption in general. The consumption is influenced by the awareness, knowledge, and education. Well, I think most behavioural change starts with education, awareness because if we do not know that something is harmful, there's no need to change our behaviour. But the more aware and the more mindful you are you can consume but this does not mean that everyone will do that. But I think that it opens up freedom for circular consumption.

The middle-class *income* allows a certain freedom to how you spend your money. I think if you have a very low income, I will personally just buy clothes out of necessity. And then the whole sustainability aspect of it will be less important. I think the higher your income, the more freedom you get into also, basing your purchasing decisions on different factors. With income would say that the more spending freedom you have, the more mindfully you could consume. So, I would argue that the higher your income, maybe there is a limit to it.

I think *price* overall is a difficult one. I think price is very skewed. I think that fast fashion in the last 10 to 20 years as kind of conditioned consumers in a way that we expect fashion fast and very cheap. And I do not think the value that we pay for a pair of jeans, on average, resembles the true value, the true economical, but also social environmental value of, of a pair of jeans. So, I think that price does influence that I think we expect circular items to be as expensive or maybe even cheaper than, than our average pair of jeans. But I don't think that's a fair price, necessarily. I do think that we might need to condition customers back to a point where they are willing to pay the true price for products. I think in general, if I pay a higher price, I will consume it much more mindfully. Because an expensive jacket is worth more to me than a than a cheap one. But up to a certain point, because if, if the price reaches a certain limit, then then it becomes too expensive for me, because I am conditioned in a way that I do not want to pay, amounts of money for a product, even though that might be a fair price. So, I would say that price positively influences my own consumption pattern, up to a maximum because once it is out of my threshold, it no longer becomes an option for me to purchase.

In terms of comfort and function, recycled clothing is fine but in terms of *quality*, I think it would be a slightly less quality than my regular pairs of jeans. The lower the *quality*, the less likely the product would survive in a circular way. So, I would say that quality is determining feasibility for circularity. I think a style like a timeless design would positively influence circularity. From a recycling point of view, the lower the *variety,* the more predictable your return flow of fibers and colors and chemicals and all that stuff has been used in production. So, I think circularity would be positively influenced by high quality and timeless design and material recyclability would be positively influenced by a lower variety of items in the clothing.

I think this is where a really big difference lies between circularity and between fast fashion. Fast fashion is super agile and trendy. They have a very quick time to market. Zara for example, their digital infrastructure allows them to capture direct feedback from their shops and provided as input into the design process straightaway. So, it is a very quick cycle. I think this is also a very challenging element of circularity and adoption by customers because the whole marketing machine around fast fashion is really influencing customer perspective. Circular design on the limit's creativity, because it asks you to use materials with fewer colours, and the colours that you use, they have to comply with particular standards, for example. So, the amount of material the amount of colours and the amount of attributes kind of influences disassembly rates because if you use a lot of buttons and a lot of zippers, it means that it becomes more time consuming to recycle a product. So, the lower the attributes, the higher the circularity score. So, I think there's it's very paradoxical in a sense. Compared to fast fashion is like 180 degrees difference when it comes to product attributes to possibilities, and I think that's also why it's proposed a lot of challenges for circular designers. Because they need to have a different toolkit, they have a smaller toolkit, compared to fast fashion designers. And I think that's the challenge here.

If you see the Dutch *culture* and you see the Italian culture, then the intelligent cultures and how that relates to fashion is very different from a Dutch one. Just trying to put things in perspective with this example here. I think that in general, for example, leather products can hardly be seen as circular. But I know that nice quality leather shoes, like Italian shoes, are highly valued within the Italian culture. So, if we take the shoe example and we compare the Dutch to the Italian culture and how it relates to circular fashion, I think Dutch consumers would be much more willing to switch to a recycled plastic or maybe even fungus-based leather alternative for a pair of shoes. Whereas the culture in Italy really values this classic leather Italian shoe and both be more hesitant, I think, to circular consumption. So, I think this is an example of how culture could influence the willingness of a consumer to adapt to circular alternatives.

It is kind of difficult to determine the definition of a circular product. Because it also has a lot to do with what you do with it, and where you buy it, how you maintain it and where you repair it and that kind of stuff. So maybe from that perspective, we could almost argue that the *availability* of circular products might be limited at this point.

Availability aspect, I noticed a lot of friends and family members and with that, I think a portion of the Dutch market would be willing to buy circular alternatives if they would be as easily available as linear ones. But I think the overall availability of fashion in general, and also well due to a huge variety of factors. I would say the higher the availability that the more likely people will at least try out sustainable alternatives.

The *transparency* plays an important role. I think that also what is happening right now is also quite paradoxical, but because there is more and more marketing budget being invested into communicating sustainability to customers. But I think the abundance of trademarks and certification standards, and the lack of clear definitions, causes a very muddy water a situation whereas a customer, you really need to do your research to find out if something is truly sustainable, yes or no. And I think that, especially the smaller brands with the right intentions, but the small marketing budgets, I think they really are being faced with this challenge of a changing and growing skepticism amongst consumers.

I think the overall culture where we as just citizens as just global citizens, where we care much about social and environmental wellbeing. And if, for example, large multinationals as shell get away with

like shady business, it kind of influences our perspective on business as a whole. So, I also think this is a bit applicable to the fashion industry. And I think a greenwashing is very destructive, in a sense for the overall sentiment amongst consumers. Because I know that a lot of skepticism originates from faulty claims in sustainability, and just the overall lack of a clear definition and understanding of certification standards. And I think there's just a lot of information for the average consumer to digest so before they can even prepare a verdict whether something is sustainable, yes or no. So, transparency is a huge challenge. I think the more transparent and brands can be the more likely people will buy their circular products. But it is really challenging because it's a paradox as well. There's greenwashing is really destructive in general, because it kind of changes the perspective of the market as a whole. People get skeptical and I think this skepticism is one of the biggest challenges that brands have to overcome.

I think that overall *moral decision making*, and it's kind of intuitive. For example, if I have a certain opinion about it, I might still rationally manipulate that, to communicate and to kind of fit in with the overall narrative of society. But I think deep down a lot of that a lot of my behaviour, a lot of my morality is more intuitive. And for that sense, egoistically. And I think our rational decision making now, like rationality, in general, is a lot more *biospheric* in a sense, then.

If you look at like Maslow's pyramids, for example, I think a lot of our purchasing behaviour and behaviour in general, is a lot more intuitively than we might think. So, I think it is a lot more *egoistically* than we might think. And if it's egoistically, and that your behaviour matches the biospheric value, that's the best situation you can have because that means that everything is in line. And I think there might be a difference between that I think a lot of people might also just buy sustainably just to pretend that they are morally right sustainably minded human beings. I think this can also be seen in an example where people would buy sustainable suits, because a suit some something you would wear very occasionally. And if you wear it, then you would tell people you talk to and network with, you will tell them like, hey, this suit is sustainable. But that deep down, you might also just like, in your private time, you just might buy whatever you want. And then people might still think you might be sustainably consuming.

Interviewer: Could you list any other factors that could be added to the list of factors that hinder circular fashion consumption? And how do these factors act as barriers?
Interviewee: I tried to buy secondhand. But my own experience with that is that I was looking for a very *specific brand*. And this platform I used did not really have the experience for me as a customer to let me easily find the product and brand I was looking for. And then when I found the product, it was damaged. So, there was no additional service through that. So, I stepped away from buying that product, because I thought that would mean that, that I would have to repair it myself, or at least find a local tailor. And it was a bit too much too much hassle.

Interviewer: How do you think demand for the circular products can be created, in your opinion, just to just to fit?
Interviewee: I think products through the digital environment through consumers can engage with circular products. And I also think that that is where we are most likely to find an answer to how we can attract more people to participate in circularity, from a sense that product design like physical product design and recycling, and it has its technical limits at this point. So, reputation wise, you could build whatever you want around that digital environment. And I think that if you create a sense of belonging there and create an experience, a personal experience, and then and wait for you to interact with the physical products in a new way. And then once we once we've gotten them into our environment, we can educate them and show them how it works and teach them where circularity can be experienced and how you can participate and how you can earn for your participation. But it will require a whole different niche at first in fashion, like where we would see a small group of digitally identifiable products. And then once that gains traction, hopefully more and more people will try that out. But it will be very difficult for me to extract one factor out of out of this story that you can apply to your list of add to your list that maybe add some more perspective.

And if there is a clear distinction between linearity and circularity, and also in terms of these two experiences, I think that would really help to make the distinction for a consumer to know the reason of preferring circular fashion. I think we need a distinction, in a sense, at least to make it tangible, at least to make it understandable.

Ideally, you would want to see this linear economy transform into a circular one. But that would blur the lines so much that a consumer would not be able to tell the difference between linear and circular products, because the experience overall is the same. So, I think there needs to be a distinction at least to get to get people to understand circularity that it is different. And that is, that is our personal angle.

Yeah, if I look at my own example, I think that what we kind of aim for is that circularity starts for us from the point where you order a product and avoid overstock and you get make to order processes, which are much more efficient. And then how it would work is that through our application, and through your own accounts, on our application, you will get updates along the way. So, you know, like, when is the fibre source? Where is it sourced from as it certified? Yes, or no? Where is the fabric made? And each of these production steps can be communicated over a period of a few weeks, let us say, then you receive your product, and then you can check in your products to kind of claim ownership. And then from that point on, we kind of wanted to offer this environment to for you to know that if there is something wrong with your product, there are local people who can help you out because they offer the services that are included in circularity, And then once the product reaches the end-of-life stage, we offer options for like resale repair, or recycling, and maybe even refurbishing at some point. But this thing in in its entirety I think this holistic approach is where we would try to look for an answer.

Interviewer: Do you think the presence of Sustainable Development Goals and EU regulations promote circular fashion consumption?

Interviewee: A few months ago, the Dutch government introduced a new diligence policy. So that means that you have do thorough due diligence on the social and environmental impact of the products that you source and sell. I think that is one that that accelerates our transition towards circularity, not circularity specifically. But I think eventually circularity will be stimulated by that, because that offers the best and most holistic solution in my opinion. Then there's another policy example of producer responsibility for textiles specifically, which is introduced to become operational by 2023, I believe, and that's going to require producers to take ownership and responsibility for the fibres that they sell out to the world, they also have a responsibility to get the clothing back after a product reaches the end of a lifecycle. I think those two are good examples of how policies could improve and accelerate tradition to what circularity.

Policymaking is so difficult because technology moves exponentially. And policymaking usually moves linearly. If there is a lot of technical innovation happening that has an exponential curve to it, that policymaking is always one step behind. And this is also applicable to circularity. But it is good to notice that there is commitment, there are some examples that are contributing to the transition. But I would question the effectiveness and efficiency of certain policies. And to kind of circle back to your initial question where you would specify policy making to demand and to consumption.

I think that what you saw during the COVID pandemic is that even when fast fashion came to a stop, there were a lot of a lot of workers who would end up in poverty and would have struggles in terms of feeding their families. So, whatever happens to fast fashion, it, it should disappear gradually, right? Because otherwise, the social impact would be incredibly high.

Interviewer: Do you think the current EU policy of reducing the use of raw materials to half by 2030 and reaching 100% circularity by 2050 is achievable? Why/ why not?

Interviewee: We are being challenged in not only the fashion industry, but all production related industries, that there is a lot of old economy that from an economic point of view, adds a lot of value to society, and therefore has a lot of capital involved. I think the capital in terms of circularity specific, is might not be enough from a sense that we need to ramp up a lot of these infrastructure projects,

and a lot of recycling technologies. They need to be scaled up. I think it is really a scalability challenge at this point.

Do I think the policies, the policies that are put in place will be sufficient? I am always a bit skeptical about that. In terms of recycling fibres, the technical challenges that we have to overcome logistical challenges we have to overcome, and also customer engagement challenges that we have to overcome. I do not think we'll make it I hope we will. If you don't find an answer to how we can get the consumer on board circularity won't work. So yeah, It will be tough. Let's hope so. But it will be difficult to

Interviewer: How does the lack of consumption of circular fashion prevent the goal achievement?

Interviewee: If we find a solution that would allow us to use 100% recycled fibers and apply it to fast fashion, then we will still meet our goals of using a percentage of recycled content. But I do not think that solves the problem itself. I do not think the number of recycled fibers all there is to it. I know that recycling fibres is a very energy intensive process. Also, because its new scalability lacks technology is not maturity. And so, there's a lot of energy consumption when we recycle fibres. So, if we do not slow down the speed at which it which we consume, and the the volume that we consume, I don't think we will find an answer.

Interviewer: Do you have any recommendations for the policymakers to improve circular fashion consumption?

Interviewee: Mud Jeans have a production facility abroad, so they pay import duties to get them to the Dutch market. And then if they want to recycle it, they must export it again to their recycling facility which is also abroad, so they are being charged double in terms of taxation. And I think that is where the policy is lacking and falsely is not facilitating circularity in a fair manner.

Another different policy direction could also really influence circularity is that we would charge raw materials more heavily and charge labor less heavily.

And then punishing waste, punishing landfill, punishing incineration, that would be very strong. So, at the end of the lifecycle of linear process, punish that.

I think from a more startup perspective, more accessible funding to startups that are into the circular fashion business. We have been funding a lot from our own from our own savings, because we truly believe in what we're doing. And we believe that at some point, we will find traction, but it would have been a lot easier if there would be to easier funding. I think that we need more accessible funding for these revolutionary and different ideas that are willing to take the risk to think differently in order to look for an answer for consumption issues.

Wrapping it up, I'd say punishment of landfill and incineration, different types of taxation on resources and labour, and more accessible funding for early stage startups that are more tied towards revolutionary ideas that don't have a simple operational business model or answer or yet.

Fashion designer 1

Interviewer: How does your company contribute towards circularity in the fashion industry?

Interviewee: The main thing we are investigating is if it is possible to build a fashion industry on its own by pulling fashion out of the supply chain instead of pushing so much. So, in order to change consumer behaviour, back to the points where we are close to our values for the items that they are instead of buying because of other incentives, such as filling a void or feeling, pressure or extra motivation to buy, because it's only available in a certain time frame, having all kinds of psychological reasons to do a purchase, which are not, perhaps the purest motivations to be absolutely happy with the purchase, and therefore happy with the fact that resources and energy have been used to accommodate that needs.

Interviewee: What are the different circular fashion consumption methods you are aware of?

Interviewee: There are the circular aspects in terms of buying recycled products as a good idea. But in the consumer arena is that the problem is very much simplified, if you buy recycled goods, there are many levels, or many steps in this circle where you can enter. It begins with the raw material entering the circle, it is of the highest possible quality in to keep it circling for as long as possible. So, we see that there would be all kinds of ways to enter that circle, for example, super high-quality products in the first loop, and then the second loop that will be slightly degraded, etc. And there will be different kinds of consumption involved in all those circles. I guess it is difficult for consumers because I would not know exactly where to get products that are already circular. And, important to keep your clothes for a long time. Apart from buying a good quality sustainable clothing, consuming clothes that are already recycled can help. And then if the recycled clothing is not good quality anymore, it is not your fault. But you can still use it for a while before it is recycled in a chemical way or down cycled, because it cannot be used on the same level anymore.

Interviewer: Do you consider buying circular fashion? Why/ why not?
Interviewee: Yes, I have been for a long time. It started with me not getting an allowance to buy my own clothes when I was a teenager because my taste would still develop for many more years. And I would not be able to tell which clothes were the right quality. So, I always had to shop with my mom. And she was right, of course, because I just wanted what everyone wanted at that same age, and I needed to blend in with everybody. And she really helped me develop my own sense of style, and to yet have the guts to do it my way instead of blending in with everybody else. So that was a good start.

Interviewer: Why do you think others do not consume it?
Interviewee: If you have no idea about clothing technology, or textile technology, textile, properties, and all that it is difficult for consumers to identify a good quality product. So then, if you want to have a good quality product, you tend to go to the more expensive brands. But sometimes those expensive brands do not offer better quality. So, you just must move off to the super expensive brands, because they would not risk their reputation with some rubbish items. So, it is very difficult. And the other downside of recycled clothing is that it does not look that good. It does not always work to replace a virgin fiber with a recycled content. The same design as the virgin fabric cannot be applied in the recycled fabric. And there can be another issue that we run into, for example, when you want to use 100% pure material, it tends to have less performance in terms of stretchability, retaining shape and all that, then the consumers are currently used to so we have to design the product differently to even that up the same counts for the best quality fibers because they have been used before.

Interviewer: What do you think about the circular fashion consumption in the Netherlands? Are people consuming it actively or avoid consuming it?
Interviewee: There is a small but growing group of consumers that does care about circularity and put their money where their mouth is, but here in the Netherlands, I would not know. But I am hopeful because This group is growing. And this is also what we see in the media.

Interviewer: Do you think circularity in the fashion industry is a probable solution to the fashion industry's sustainability issue?
Interviewee: Yes because circularity is the most ambitious way of making the industry sustainable. However, is a far away, it is a huge target.

Interviewer: Based on the factors listed on the screen, I would like to know your opinion on the factors. Do you believe 'factor 1' to influence (positively/negatively) consumption? If so, how, and why?

Interviewee: The answers depend on which kind of circular fashion we are talking about. This can be in terms of high-quality start cycle and low quality recycled follow up circle. For the high quality aged 30 plus with money to spend would spend on it. For the second subsequent loop the age could be younger.

Gender does not matter.

Income should be high if the consumer wants to buy the high-quality recycled clothing however for the subsequent loop lower income should do.

Awareness and knowledge in the first high quality loop are not that important. We can sell people these high-quality clothes just because they are high quality, because of the brand's experience although because they are expensive. And then they do not even need to care about circular fashion. And then of course for the also this new awareness and knowledge about circular fashion would not be the main reason also for the younger groups to buy from the second loops, we still need to make sure that they will buy because of the other reasons that they buy.

The *price* would depend on the loops.

Providing *variety* in clothing is difficult. As to get this on demand supply chain going, we have to really narrow things down a lot. The clothing can be personalized but right now there is lack of style and trends.

Culture has not been a topic of conversation that much. I do not think it matters.

Availability of sustainable circular clothing, yeah, of course, they have to be sustainable. They must be available. And yeah, it depends also on the *transparenc*y the next subject, because perhaps they are available, but if we do not know about it, and we do not know how to value, the level of sustainability or show clarity, then it's very difficult. It would be nice if UN could provide a quality label or something like that.

I think both biospheric and egostic values, both apply. But there should be more research into these values, the psychological needs to buy clothes and to what extent they influence the circular fashion consumption.

Interviewer: Could you list any other factors that could be added to the list of factors that hinder circular fashion consumption? And how do these factors act as barriers?
Interviewee: Lack of marketing is one of the main factors. If the circular fashion organizations choose to follow business to business path instead, they would have to deal with brands that are not organised, not optimised for a better on demand proposition, because they already have their bulk supply system in place. And it is very difficult for them to move away from them.

Interviewer: How do you think more demand for circular products could be created?
Interviewee: Creating demand is a matter of good marketing efforts. There is a need to pull circular fashion out of the supply chain, instead of having it being pushed. I kind of miss in the EU, a big marketing budget.

Interviewer: Do you think the presence of Sustainable Development Goals and EU regulations promote circular fashion consumption?

Interviewee: If we empower consumers more to make their own choices, and to have a pull. And right now, sustainable fashion is expensive. We need to have faith in the consumers and that if we enable them to buy in another way, that it will start growing. We kind of hope and put our faith in this effects that if we start by taking the people who really are interested in our proposition and are super trendsetting and also have the money because otherwise, we just cannot get started. If that from there, it will trickle down and the new way of buying will trickle down to larger audiences.

Interviewer: Do you think the current EU policy of reducing the use of raw materials to half by 2030 and reaching 100% circularity by 2050 is achievable? Why/ why not?

Interviewee: Yes, practically, it would be possible, but it may not happen because of the market forces that are so strong. Also lack of awareness of circular fashion will prevent this from happening. However, a global consensus and lawmaking can make it possible.

Interviewer: How does the lack of consumption of circular fashion prevent the goal achievement?

Interviewee: I do not think there is a consumption problem in the consumer area, because it is not the fault of the consumer. Either they are not informed enough, or they the marketing is not adequate enough to convince them of this by so but when I look at the problem that we do have with consumption, there is the lack of demand goods by brands, and this is where we are yet working on. What I meant here is: the business models of brands are standing in the way of adopting a demand-based production strategy. We talk to brands a lot, and more and more we get the feeling that we are creating a solution for new kinds of brands that choose on-demand as their foundation. Our system could grow faster if some big, existing brands would join, but we expect that this will take quite some time. In the meantime, we try to grow it bit by bit with those innovation brands. As long as all the clothing waste is gathered and repurposed for something again, that will be good. But it is going to be very difficult if we keep consuming at the same pace at the same time. If consumers can contribute by recycling their clothing, then probably it could be a better solution.

Interviewer: Do you have any recommendations for the policymakers to improve circular fashion consumption?

Interviewee: 1. Invest in Life Cycle Assessment methods and make them compulsory for public as well as private funding, to make sure that measuring the environmental impact becomes standard procedure for new business solutions. 2. Agree on sustainability labelling on European level and invest in marketing to make these labels well known. 3. Establish funding for non-profit economy businesses to provide an alternative for classic venture capital for pure financial gain.4. Compensate for higher production prices of sustainable / circular products by taxing the 'true cost'. the Eco cost calculations our way to compensate the price and unsustainable or uncircular products should be priced higher or tax higher, and vice versa. (Consult the tax-experts on how this should be done).

Fashion designer 2

Interviewer: Do you think circular fashion consumption could contribute towards achieving circularity in the fashion industry? Why/ Why not?

Interviewee: Yeah, definitely. As a consumer, they should think about the end of the garment and consume accordingly., what would they do with it after they stop liking the garment. It is important to re-educate the consumers. If the consumers act responsibly, they could contribute towards circularity.

Interviewer: What are the different circular fashion consumption methods you are aware of?

Interviewee: On the Vinted app, used clothing can be sold. So, this is also very important to help this circular fashion. Also, eBay can be used for second-hand buying and selling. Moreover, clothes can be recycled if they are made of the single material. Also, buying clothing with metal things or mixed fabric is not good as it would prevent the recycling process. Fast fashion uses materials that are not recyclable, so it is important to go for basic clothing, made of a single material and timeless clothing. It is important to consume good quality clothing so that it could be used for years. So better invest in quality than quantity.

Interviewer: Do you consider buying circular fashion? Why/ why not?
Interviewee: I contribute towards circularity by consuming high quality, basic clothing. And I sell it on Vinted if it is too new to be recycled. I also donate clothes to the needy, this also extends the lifetime of the product.

Interviewer: Why do you think others do not consume it?
Interviewee: People are not into circular fashion because they do not care about the environment, they are not really well into ethics, but there are some people who would get influenced and would consume if you tell them, it is becoming very trendy.

Interviewer: What do you think about the circular fashion consumption in the Netherlands? Are people consuming it actively or avoid consuming it?
Interviewee: Netherlands has clothing libraries, where you can rent and buy clothes. Here, you can not only buy sustainable clothes but also re-use clothes that are already in the market. People in the Northern Europe are usually very eco-friendly. There are many shops with sustainable brands specifically in Amsterdam compared to other countries.

Interviewer: Do you think circularity in the fashion industry is a probable solution to the fashion industry's sustainability issue?
Interviewee: Definitely. The fashion industry is one of the most polluting ever. So, as a designer, I would say entrepreneurs and designers should focus on improving and recreating exiting clothing instead of creating new ones, and new ones with this linear model. And consumers should consume responsibly, buy timeless basic good quality sustainable clothes so that they could be recycled in future. They could also visit fashion libraries if they want to rent or buy good quality second-hand clothing.

Interviewer: Based on the factors listed on the screen, I would like to know your opinion on the factors. Do you believe 'factor 1' to influence (positively/negatively) consumption? If so, how, and why?
Interviewee: When you are a teenager, you have this obsession to look good. I do not have a lot of hope in teenagers and very young people, honestly. But on the other side, people in their 30s might have trust issues in trying something new and maybe they would be too attached to the tradition. But I will still say age influences the consumption and older people are easier to educate on this topic as they are more sensible in comparison to a teenager.
In terms of *gender*, psychological factor plays an important role. Women dress to look good. And this pushes the women to buy instead of buy good. On the other hand, men buy clothes and use it for years.
Income is one of the most important factors as sustainable clothes cost more. Even brands that pay their workers well, produce ethically sell their clothing at a high price.
Awareness and knowledge about circular fashion plays an important role. Those who are not very educated about this topic, you educate about the fact that is becoming trendy price of the garments so that it influences them to consume circular fashion.
Price of the garment also has an influence. For example, you might see a similar clothing in Zara and another brand that produced the cloth from orange fabric that is organic and recyclable, The same

white t-shirt would be way cheaper in Zara. This might create some resistance on the instinct to buy because the sustainable clothing is expensive.

I do believe that garments produce according to a circular fashion produce more *quality* garment. Style could be in terms of timeless fashion, buying basic clothes that would not go out of fashion also form a part of the circular system. But maybe there are some people that are attached to a particular style and trends. So, variety becomes an issue in the circular fashion system. However, brand like H&M encourages the consumers to return their used clothes and get 10% discount again to buy a new one. So yeah, cannot influence in a positive way. The *variety* and *style* provided by circular clothing negatively influences the circular fashion.

Culture plays an important role. For example, in Italy, people are very to historic brands and also don't look about to innovation. They always trust new brands and innovation. In Netherlands on the other hand, new brands with approach to ethics are very welcomed.

I do not think there is a lot of availability of circular fashion. For example, in the Netherlands if you are looking for a sustainable brands shop, you have to look for it on the internet you have to do some research. An average person wants to go for shopping at the city centers and would only find fast fashion shops like Zara. There is not even one shop that is sustainable. The availability is a big obstacle. Moreover, I am not aware of an ecommerce that is just meant for sustainable brands.

There is not so much *transparency* for big brands. Although they sell organic clothing, they are often not recyclable. I believe that they use it as a marketing strategy to attract more consumers.

There is a group of people who would consume based on biospheric value because they are really committed in the topic, but the majority will be influenced by egoistic values.

Interviewer: Could you list any other factors that could be added to the list of factors that hinder circular fashion consumption? And how do these factors act as barriers?
Interviewee: Word of mouth plays a role. Family and friends' feedback plays a role.

Interviewer: How do you think more demand for circular products could be created?
Interviewee: First, popular brands could collect the used clothing from consumers to create recycled clothing by provide the consumers with some economic benefit. For example, H&M provides 10% discount to the consumers on new clothes when used clothes are returned to them. Second, make the circular shops easier to find. Third, fashion influencers can play a huge role in spreading awareness and promoting sustainable brands by collaborating with them.

Interviewer: Do you think the presence of Sustainable Development Goals and EU regulations promote circular fashion consumption?
Interviewee: social media like TikTok can play a huge role in spreading awareness and influencing the consumers.

Interviewer: Do you think the current EU policy of reducing the use of raw materials to half by 2030 and reaching 100% circularity by 2050 is achievable? Why/ why not?
Interviewee: I think this is achievable. This is applicable for all the industries. Green business is looks almost mandatory. And also, because factors like corporate social responsibility is becoming strategic in marketing. So, brands really have to work on proving their values, So I see a huge commitment that makes me optimistic about achieving the goals on time.

Interviewer: How does the lack of consumption of circular fashion prevent the goal achievement?
Interviewee: Yes, it will. And here, we should raise more awareness on fashion, because someone who doesn't know very well about this topic do not realize the importance of their contribution.

Interviewer: Do you have any recommendations for the policymakers to improve circular fashion consumption?

Interviewee: The government can have the certification, for example, for clothing that they do not use the chemicals that harms the environment and all these things. The government should slow down the fashion. The popular fashion brands make fast fashion collection that they release based on the weather, different collections for winter, summer, limited edition etc., Allowing the release of only two collection per year is a good start.

Researcher

Interviewer: How does your company contribute towards circularity in the fashion industry?

Interviewee: I am a project leader at a university at the team of corporate value creation, and sub team within that is knowledge for society. In 2018, we founded the circular fashion lab at the university, which is essentially a combination of everything we do within the research centre and the University on sustainable textiles and circular fashion. We have been doing research towards textiles for many years already, but it was never combined within one programme. In 2020, me and two of my colleagues, we wrote the Sustainable Textiles programme in order to improve and strengthen everything we already do. And make sure we have much more than we already have in terms of research and educational activities.

Interviewer: Do you think circular fashion consumption could contribute towards achieving circularity in the fashion industry? Why/ Why not?

Interviewee: If I look at our programme we had to narrow down the entirety of circular fashion, the industry is so broad, there's so many things that we of course need to change in order to make it more sustainable. So, we narrowed it down to five domains have changed as we propose them. We start from resources, then we continue with consumer behaviour, we talk about design, we talk about the value chain, of course, containing business models, etc. And if we look at the circular economy, the consumer and consumption is key. Based on the R strategies, we start with rethinking, reducing, redesigning everything, the amount that we consume, and the way that we consume them, the way we treat our textiles in our fashion is very important.

Interviewer: What are the different methods by which your consumer can adopt a circular fashion? I mean, what are the different methods of consumption?

Interviewee: The 'R' methodology describes several levels of circularity, you could also say and the more at the top you are of the ladder, the more circular it is. So, we start with refusing certain types of consumption. That is the main goal of reaching circularity. And completely at the bottom we have I think, recover energy, which is something we of course we aim to avoid.

Also, in the Netherlands, we have quite a few clothing libraries in Hague, Arnhem and Amsterdam mainly. Not a lot of companies have this, not a lot of countries have this. So, we're definitely pioneering in this. And it is, of course, a way to make sure you consume less, but keep that interesting change of clothes. Not everyone wants a minimal wardrobe, the libraries are a source of having something new and fresh without owning it. These libraries also have secondhand clothing, hence providing two functions. But the second-hand clothing does have a rebound effect. There have been debates on whether if it could be actually considered sustainable.

Interviewer: Do you think circular fashion consumption could contribute towards achieving circularity in the fashion industry? Why/ Why not?

Interviewee: I mostly only buy secondhand or vintage unless I really cannot but something. And this really, really can't find something. But then I need to convince myself that I really want it and have to think about it for a long time before I buy.

I started buying vintage and secondhand clothing, because it was a way for me to stand out, without following the trends of the high street. And of course, I did not want to buy fast fashion with regards

to environmental and social impact. And it was, for me a way to keep those within the loop within the system and knowing that if I buy something with either great quality in terms of material, or buy something with a great brand, knowing that people will want it after I'm done with it, we can keep the clothes in the loop. But also, I look at materials, I never buy anything with polyester, or anything that is fossil fuel based. I just reject that completely, if possible.

Interviewer: Why do you think others do not consume it?
Interviewee: Ultimately, many consumers are not willing to pay a higher price for more sustainable garments. There is a big discrepancy between what they say and what they doing. Also, depending on the generation, there might still be a sort of stigma. People do not want to go out and look for certain things that have sustainable attributes due to the effort it requires to search. For example, if you go to any vintage store, you must dig through the racks. There are very few people who would like this process. Once you find a suitable product, it might have a high price and people would not eventually buy the clothing due to the high price.

Interviewer: What do you think about the circular fashion consumption in the Netherlands? Are people consuming it actively or avoid consuming it?
Interviewee: The resale market is growing. But with regards to circularity, I don't think we have anything we can purchase that is 100% circular. A very few people have subscriptions to the fashion libraries. The clothing might not match the aesthetics of the people. I am not sure if these options are available for men and children. We keep many items, which we don't use, that's one of the things that we see in our wardrobe study. And it is just there in our closet waiting for us to gain a new size or to lose a size or has an emotional attachment to it. And the things we can recycle at the moment are not being upcycled because all the technologies we have to do this fiber-to-fiber recycling that are too expensive at the moment. However, people are willing to consume second-hand clothing.

Interviewer: Do you think circularity in the fashion industry is a probable solution to the fashion industry's sustainability issue?
Interviewee: Yes, I think it is one of the solutions. I would not say it's everything because currently when we look at circularity, usually the social and ethical aspects of it are overlooked. So, it's part of a solution.
Interviewer: Based on the factors listed on the screen, I would like to know your opinion on the factors. Do you believe 'factor 1' to influence (positively/negatively) consumption? If so, how, and why?

Interviewee: Based on our research, older *age* groups have more clothing items than the younger age groups. But them having more clothing items is interesting because Gen Z consumes fast fashion a lot. However, at the end in our study, they have less clothing items than the older generation. Probably consumers with the higher age are more easily able to buy sustainable fashion than the younger generation just because it's more expensive. But I am not sure of the consumption difference based on sustainable and fast fashion.
We do not have a lot of sustainable options for men at the moment. *Gender* definitely a difference here. If it's not only due to the availability, but I'm also not sure if they're less willing. We see that male males in our study have less items than females. For example, the clothing libraries, we don't have any specifically meal items there. We have unisex items but not male.
Income is the main trigger for being able to buy sustainable fashion because there's such a large discrepancy between fast fashion and sustainable fashion. I mean it costs much more. So, you need to have the income. Even though you might have the awareness and some knowledge, if you cannot afford it, you won't buy it. But it of course, it will have an influence. But of course, if you do not know about the sustainable fashion existence, you won't think it's necessary to put more money towards it.

Fashion is identity. And it is an embodied experience of who we are or who we want to be. So product attributes very important. And I think circular fashion can have those *product attributes*. Depending on what you think circular fashion is, when we go back to the clothing library, we do see a lot of quality, otherwise, the items are just worn out after a few wears from different people. And that way, you can have a lot of variety within your wardrobe without owning them. So, it is

At the moment, we know a lot of brands are sharing their sustainability reports or sharing their own sustainable labels within their own brand. And they are using their entire aesthetic and marketing tools to make sure that consumers think it is of course sustainable, which a lot of times is the greenwashing. So, *transparency* is important. But we need to find a way to make sure that the right information reaches the right consumer. And currently there is no lead in this. So, companies are greenwashing.

Transparency is difficult on so many levels, even the brands that want to do this, they cannot fully be transparent because they don't even know which farmer is farming their cotton, for example. The long value chain within the fashion industry makes it difficult to be fully transparent.

The biospheric and egoistic values are important. Currently within the fashion industry, we don't have those data yet. If we look at, for example, fibres really going into production site, we don't have the data about what is more sustainable, because we cannot compare them at the moment, we don't have the right data, and especially for all the new types of bio-based materials. Egoistic value plays a role. For example, some people don't feel comfortable walking around on the street with a with a high-end brand fashion bag.

Interviewer: How do you think more demand for circular products could be created?
Interviewee: Maybe we should change the way business is done at the moment. So, we need to incentivize more circular and more sustainable decisions within the entire value chain. Resource use should be taxed. The other one that's currently a lot, that is currently being approved is the extended producer responsibility. So, we need to make sure that those who produce are held responsible for what happens with the garment at the end of its lifecycle, more sustainable and can be reused.

Fashion libraries are struggling a lot at the moment. Because due to the pandemic, we are not having any incentives to go out and brings a nice dress that we want to wear. So we really need to make sure that we that we develop the right incentives in order to improve the current situation. So ultimately, that will increase demand.

Interviewer: Do you think the presence of Sustainable Development Goals and EU regulations promote circular fashion consumption?
Interviewee: I think what they trigger is a series of research and a series of projects on EU level as well as on national level, which will improve the current knowledge that we have regarding the subjects and regarding consumption. We need to change a lot before we are even near responsible production and responsible consumption.

Interviewer: Do you think the current EU policy of reducing the use of raw materials to half by 2030 and reaching 100% circularity by 2050 is achievable? Why/ why not?
Interviewee: I don't think we can receive 100% circularity ever probably. We can reduce our raw material consumption. But it will be very expensive for the brands that usually use virgin materials. And we need to make sure that they are going to change their ways of working. And that will require quite drastic changes from policy from the EU. If we want to reach this goal, we have to make drastic decisions, and we have to do it fast. And we have to make sure that brands are accountable for what they're doing. And currently we don't see that happening enough.

Interviewer: How does the lack of consumption of circular fashion prevent the goal achievement?
Interviewee: There many families that don't have the the income or enough money to spend on purely sustainable items, and they will ultimately reach for fast fashion. It needs an entirely systemic change

within our way of working right within the governmental spheres before those families are able to afford this sustainable fashion looking at the current pricing.

Interviewer: Do you have any recommendations for the policymakers to improve circular fashion consumption?

Interviewee: First, we need to make sure that the resources are taxed in a good way. And we have less l taxes on labor, because in circularity, it requires a lot of energy, a lot of labor. And now the way we tax it is completely the other way around. And it starts really with the resources as long as we don't tax that property brands will keep using the cheapest resource that are available and continue producing fast fashion. And we need to step away newly created fossil-based fibers. And we need to make sure that the sustainable items are if possible, cheaper than current, the fast fashion items

Second, we could incentivize consumers to donate their garments in a sustainable way, in order to make sure it can be reused and can be recycled. So maybe the way we use the glass collection systems or the plastic collection systems where consumers get some money back from it, right, that could be a way.