

MASTER THESIS

**SUSTAINABLE AND ETHICAL FASHION: STUDY ABOUT THE RETAIL
PRACTICES IN THE DUTCH FASHION INDUSTRY**

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ABSTRACT

The fashion sector plays a vital role in human life by fulfilling the fundamental requirements of clothing as well as various economic benefits by trade and jobs to the society. One of the most commonly used terminologies of today's apparel industry is sustainable apparel/fashion. Sustainable fashion, however, goes beyond the wave of eco-friendly and socially conscious brands, by meeting future consumer demands for sustainable fashion. . The sustainable entrepreneurs in this industry are categorised into two types: Emerging Davids (new entrants) and Greening Goliath's (incumbents). However, the efforts of these new entrants in managing their supply chain sustainably are not explored in depth in the literature. Therefore, this study presents a qualitative research on how the new entrants ('Emerging Davids) are integrating sustainable practices in this currently competitive market of the ever-growing Dutch fashion industry. The results of this study reveal that although the retailers in the apparel industry face numerous challenges throughout their supply chain they are trying combine all the three facets of sustainability in practice. This research analysed those sustainability challenges and provided recommendations to further enhance their market position and sustainability performance.

Keywords: Sustainable entrepreneurship, Sustainable Business, Environment sustainability, Social Sustainability, Economic sustainability

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LIST OF ACRONYMS

AGT	Dutch Agreement of Sustainable Garment and Textiles
FSC	Forest Stewardship Council
GOTS	Global Organic Textile Standard
ILO	International Labour Organization
IST	Integrative Sustainability Triangle
NGO	Non-Governmental Organization
PBT	Polybutylene Terephthalate
PETA	People for Ethical Treatment of animals
SME	Small and Medium Enterprises
TBL	Triple Bottom Line

CHAPTER 1

INTRODUCTION

1.1 THEORETICAL BACKGROUND

Globalization is exerting pressure on countries and enterprises in the world to improve their environmental performances since consumers are seeking healthier living choices and one among them is sustainable or green clothing. Textiles and fashion are considered as the most polluting industry in the world next to the chemical industry. Every stage of garment production from attainment of fibre to its disposal (also termed as cradle to grave) threatens our planet and the social life standards (Shen and Qingying, 2017).

The Apparel industry is a complex global system abounding with intertwined social and environmental complications. Never before this industry has been so massively present in the market with an estimated current value of 60 Billion dollars and the potential customers number is expected to reach 1.2 Billion this year. In the Netherlands alone the revenue of clothing accounts for 5105 Million Dollars and it is expected to increase in the coming years (Fashion Netherlands, 2020). There is a steady increase in this number, but the price of clothing seems to be dropping. The advent of fast fashion 20 years ago disturbed the dynamics of the industry. Fast fashion can be described as inexpensive trendy apparel which samples ideas from the catwalk or celebrity culture and transforms them into garments at a rapid pace (Rauturier, 2018). This promotes the retail of high fashionable, inexpensive clothes that mimic expensive collections from the runway. This accessibility, therefore, limits and eventually neglect the materials used in production contributing to increased disposability of apparel (Kozlowski et al, 2016). Customers are more attracted than ever before to buy these pieces of clothing, but those pieces tend to run out of style within few weeks. Currently only a week is required for the production of clothes after a certain type of style has been showed on the catwalk (Joy et al., 2012). These changing trends in the apparel sector have pushed retailers to explore minimal prices and versatility in design, pricing and key tactics to retain a competitive position in the growing commercial market. (Bharadwaj & Fairhurst, 2010).

For the past two to three decades the textile industry has been exposed to various critical development (Kozlowski et al., 2012). One such critical development is the major contribution to the national economies of several countries (Nayak and Padhye, 2015). Given the competitive complexity of the clothing business, production facilities from industrialized and developed countries have shifted to the developing countries to reduce labour costs(Nayak and Padhye, 2015). This shift adds to both social and environmental problems, including improper manufacturing practices causing substantial

habitat degradation by excessive usage of chemicals in the manufacture of garments that results in greenhouse gas and waste generation. Even further, thousands of tons of textiles are being incinerated or dumped in landfills every year. Added to this fact is that most of the complications emanate from fast fashion production that is being pushed onto the developing countries. In other words, the developed nations raise their fashion consumption at the expense of bad working environments and low salaries. (Kozlowski et al, 2012). Because there are increasing worries regarding water scarcity and climate change along with the tremendous environmental impact of the apparel industry has also become a subject of concern. According to some figures, up to 10% of global pollution of carbon dioxide and 20% of wastewater from industries are responsible for pollution in developing countries. Companies realize that their new business model will not be fit for the future. With the lack of universal regulations or major market changes, the apparel sector is also analysing closely whether the environmental and social effects can be improved when operating in a cost-efficient manner (Kell, 2018). 'Fashion sustainability' is gaining attention and credibility which is compelling the fashion brands to reconsider their business models to shift to more sustainable approaches with respect to production and operations (Khandual & Pradhan, 2018).

The complexity of sustainability challenges are contributing to the reality that progressive solutions are not adequate to maintain vital amounts of ecological and social capital and this is enabling the concept of sustainable entrepreneurship to gain importance and recognition (Hockerts and Wustenhagen, 2010). Two different fields of study on the topic of social and environmental entrepreneurship have historically established the idea of sustainable entrepreneurship into small businesses (Zahra et al., 2009). However, the move to concentrate on start-ups and their entrepreneurial activities may be an appropriate countertrend against the wider emphasis of the current literature on corporate sustainability. According to Hockerts and Wustenhagen (2010), they claim that *"In the early stages of industrial sustainability transformation, new entrants (Emerging Davids) are more likely to pursue sustainability related opportunities compared to the Greening Goliath's"*. This is the case because the Greening Goliath's, however, are less interested in investing their time and efforts towards sustainability as they already have an established presence in the market. Nevertheless, the Goliath's are also attracted by the early commercial growth of the David's and engage in corporate sustainability initiatives that are formulated on their own with respect to their requirements. (Hockerts and Wustenhagen, 2010).

In the context of climate change, scarce capital such as fossil energy, and the growing understanding and awareness of the environment, the energy transition to sustainable energy system – is a commonly agreed social, political and technological objective in the past few years (Bitter et al, 2016). The concept of sustainability is also gaining importance in recent times due its various intersections

and interdependencies resulting from its multi-dimensional nature leading to many strategies for efficient systematization. The three facets of sustainability are either taken into account separately or in an integrated manner. Integrative methods of systematization reflect the complexities of sustainable development, that is interdependencies and the relations between all the three dimensions. The 'Integrative Sustainability Triangle' further expands the conventional sustainability triangle by incorporating distinct fields inside the triangle, thereby allowing a distinct differentiation of the elements in all three dimensions. The IST not only systematizes the three central dimensions; it also establishes a clear interpretation of the sustainability concepts. Furthermore, by using arrows to link the elements; it can reflect interdependencies and the placement of the components in different fields. (Bitter et al., 2016)

To investigate the actual sustainability efforts of those ethical retailers in the Dutch fashion industry, this study conducted content analysis through the sustainability reports along with qualitative data acquired from interviews of the sustainable fashion brands. The elements of content analysis were discussed during interviews centered on the analytical framework that was devised for this research. The study group were drawn from companies who are operating in the sustainable clothing industry with specification of the 'Emerging Davids' criteria. The retailers that qualify under this criterion should be a rather small firm with a recent venture into the niche market and equal importance given to environment and social sustainability alongside economic sustainability. This research tries to explore the sustainability efforts, motivations and challenges these ethical retailers are facing in their operations. Through integrating all these elements, this research adds to the literature through combining theory and the practical insights gathered from actual sustainable supply chains in the Netherlands.

1.2 PROBLEM STATEMENT

There are numerous studies focused on the implications of the fast fashion production-consumption model but there is limited literature on sustainable apparel/clothing from a retailer's perspective on how sustainability is incorporated in their operation strategies in practice. Also, it is unclear whether companies choose to adopt either of the sustainability dimension or are there any practical implications influencing those choices. Often studies are inclined towards either social or environment sustainability and aspects of economic sustainability are not fully explored in the literature. Furthermore, there is not enough research on how the 'Integrative Sustainability Triangle' can be employed to map the sustainability initiatives of firms. This research will explore, the existing methods, and the further possibilities of inclusion of all the aspects of sustainability, in the production practices of companies with characteristics of Emerging Davids.

1.3 RESEARCH OBJECTIVE

The main objectives of the research are:

1. To gain an understanding of the sustainability initiatives adopted by the retailers in the Dutch Apparel industry.
2. This research also aims to give recommendations on the challenges faced by the companies (Emerging Davids) to incorporate sustainable production practices.
3. Furthermore, there is not enough research on sustainable business models and the integrative Sustainability triangle, and this research aims to partly fill that gap.

1.4 RESEARCH QUESTIONS

The key research question this study aims to address is as stated below:

To what extent are the elements of sustainability practiced by the Dutch apparel retailers comprising the characteristics of Emerging Davids?

The following sub-questions were formulated to help answering the main research question.

- a) What are the main drivers/motivations influencing the Dutch apparel retailers/fashion brands to incorporate sustainability aspects in their operation strategies?
- b) How are the factors of sustainability incorporated into these companies' business models?
- c) How are the varying approaches to sustainability adopted by these retail companies combined with existing sustainable business model frameworks?
- d) What are the potential barriers the retailers in the clothing industry face while combining all the three facets of sustainability in practice?

1.5 ORGANIZATION OF THE THESIS

This research is organized as follows:

The first chapter explains the context of the study, the description of the problem and the research questions. The second chapter provides a theoretical background of the research topic which established a foundation to execute this research. The third chapter elaborates the design of this study and the methodologies employed for the collection of data. The fourth chapter contemplates on the key findings gathered from conducting interviews and reviewing the existing literature through desk research ending with a brief discussion section. Finally, the fifth chapter provides concluding remarks along with recommendations for practitioners with respect to the challenges faced in practice.

CHAPTER 2

LITERATURE REVIEW

This chapter presents relevant literature that will provide a theoretical background for the purpose of this research. It contemplates upon the textile industry, Sustainable Development, sustainable clothing, overview of the apparel value chains, Sustainable entrepreneurship and sustainable business models.

2.1 TEXTILE AND APPAREL INDUSTRY – An overview

The textile and fashion industry plays a major role in the economies of developing countries. Following agriculture, the textile industry is the largest and dates back to several centuries (Kumar & Suganya, 2017). With respect to trade and gross domestic product the overall index of the industrial production in the garment industry grows by 5.4% every year according to the data published by the Cotton Textiles Export Promotion Council. Favourable factors such as locally available labour, raw materials, generation of hydropower, transportation networks and entrepreneurial skills facilitate the textile industry to establish a strong market for the production of yarn. However, issues exist in the growing textile industry that include disorganised infrastructure and systems, global recession, higher demand for electricity and energy resulting in sharp rise in the price of raw materials (Kumar & Pavithra, 2019). This increase resulted lower efficiency by bringing down the value for textile products. The garment industry is also liable for increased degradation of waterways and fertile land due to the release of effluents. (Kumar & Pavithra, 2019). Industrial acceleration, a simultaneous reduction in clean water and a rise in environmental problems, huge sanctions against environmental legislation have all led to a genuine need to use eco-friendly chemicals and processes. Growing textile use due to the rise in world population and changes in their living standards has demanded the increase of environmental performance in the industry and sustainability has become a crucial matter of concern in this polluting industry (Toprak & Anis, 2017). The textile industry includes various segments and one among them is the apparel sector which is the focus of this research and hence an overview of the apparel industry is explained in the following paragraph.

The Apparel industry is being used as a channel by countries around the globe to pursue export-oriented industrialization since the 1970's. It is a labour oriented global industry with its main production hubs in China, Asia and the South Asian region. The biggest importers of the readymade apparel are the European Union (EU) and the United States because of the well-established retail chain in the production countries (The global industry of apparel, n.d). Products in the apparel industry vary from vary from basics, to luxury items and alligator skin handbags. Originally the apparel companies were wholesalers selling large quantity of goods to retailers but since the past few years they are being

sold directly to the consumers in order to increase their profit. However, most apparel companies consist of both wholesale and retail. There are a number of reasons why companies establish retail operations, e.g. it gives an opportunity for a store to be dedicated to a single brand which offers control on the line's image and identity. Retail stores are typically more profitable and commercial than the wholesale since the company can increase profits by cutting out on the wholesale. But this strategy seems to be risky for companies with retail operations that have added hardship of finding store locations with good potential and inventory management without hampering the market. In the recent years the internet has been considered as an essential platform for the retailers, especially since consumers are more tech savvy, they tend to shop online and demand faster processing and shipping. The online sale can be boon for the retailers as it requires less expensive storefronts and staffing and hence, they are more cost effective than the traditional business platforms (ValueLine, n.d)

2.1.1 Current Scenario of Apparel Industry in the Netherlands

The Dutch textile and garment sector is a 20-billion-euro industry offering employment to around 100,000 people in the Netherlands and approximately around 60,000 people internationally who are working under the contract of the Dutch companies. The apparel sector includes sportswear, work wear and consumer garments which accounts for approximately half of the turnover in the Dutch textile and apparel industry. The Dutch apparel and textile industry have a long past in Leiden, Twente and Brabant, those are considered the main regional hubs (About the Dutch garment and textile sector, n.d). Although, production still takes place in the Netherlands, most apparel and garments are produced outside the country and, the European Union does not have a clear policy regarding the textile production in the Netherlands. The open character of the Dutch economy is partially contributing to the increasing price pressure and competition. The production in the Netherlands is also under pressure due to the turnover among the employees and the small ratio of the adequately trained new employees. However, creativity and specialization are contributing in achieving sufficient added value (MODINT, n.d)

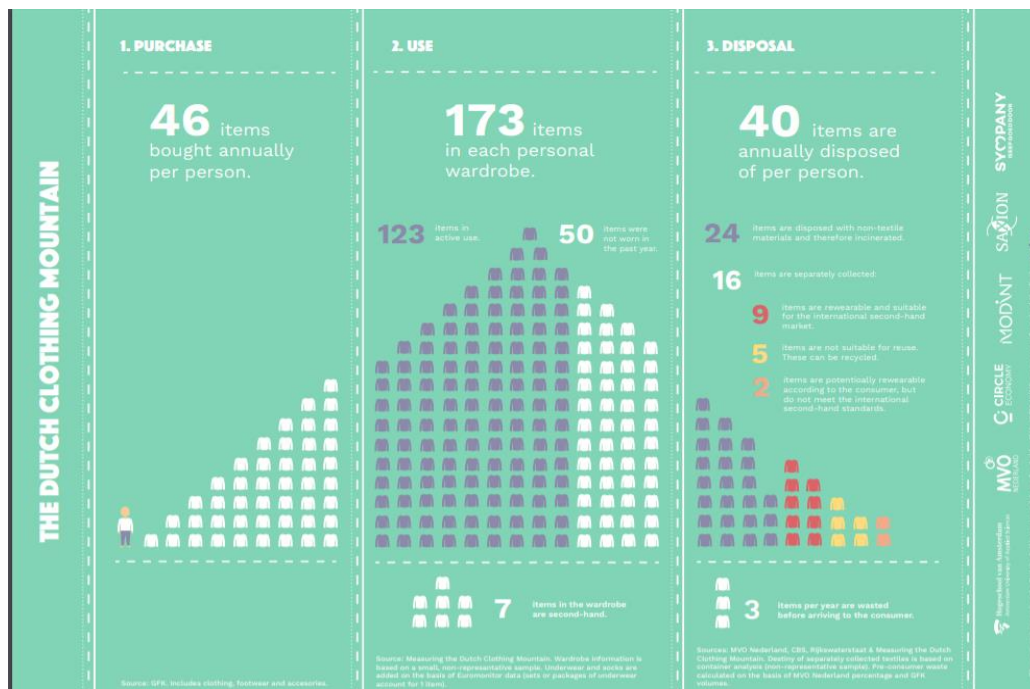


Figure 1: Dutch Clothing Mountain. Adapted from Measuring the Dutch Clothing Mountain: Data for sustainability Oriented studies and actions for apparel industry by Maidini et al., 2017

The above figure shows the trends in purchase, disposal and use in the Dutch clothing context. Even further, figure 1 focuses on the volumes of clothes being bought, used and discarded by the consumers in the Netherlands assuming that most of the garments consumed are produced internationally (Maidini et al., 2017). Additionally, the largest and most popular apparel firms are headquartered in Europe. The EU is the world’s largest importer of apparel and textiles according to the World bank report of 2018. The Netherlands ranks in the top 5 with an annual average rate of 10.4 Billion Euros with respect to import of apparel (GmbH, 2019). Figure 2 depicts the EU importers from developing countries in 2018.

Country	Value	5-yr. growth
Germany	€33.9	↑5.1%
France	€21.7	↑4.3%
United Kingdom	€19.6	↑3.4%
Spain	€16.6	↑8.3%
Netherlands	€14.7	↑7.5%
Italy	€14.5	↑4.7%
Belgium	€7.9	↑2.9%
Poland	€7.0	↑18.4%
Austria	€5.9	↑6.2%

Figure 2: EU importers of apparel in 2018 (Source: CBI-Ministry of Foreign Affairs)

The first column represents the value of apparel imported to the respective countries in the year 2018 followed by the estimated growth percentage in 5 years. The next sub-section briefly introduces the model of existing clothing production in the country and abroad as well.

2.1.2 Fast fashion and its business model

The existing system in the country is that of fast fashion. The term was born in the 80's and has evolved since then redefining the way clothes are being manufactured. The term 'fast fashion' is referred to as a business model incorporating three major aspects: (i) quick response (ii) periodic assortment changes and (iii) Trendy styles with reasonable prices (Caro & Martinez-de-Albeniz, 2015). This interpretation is broad, and it does put a borderline which eliminates several retailers that are assumed as being fast fashion. The major aspects make fast fashion economical, increasing the possibility for the consumers to afford variety of clothing. Time management is also of serious importance since clothing needs to go from design to the stores in short periods. The clothing that is manufactured with these aspects wind up in the mass market price segment which also contributes to the fact that fast fashion is focussed around low cost production (Koksai et al., 2018). The Apparel value chain, being an integral part in the production of clothing, is explained in the next section.

2.2 APPAREL VALUE CHAIN

The supply chains of textiles and clothing are complex, and interconnected with numerous sectors such as electrical, chemical and transport industries. The value chain itself can be considered as a sequence of events that add value to a product or a process. There are a variety of actors that are involved within the value chain. The lead-firms are the prominent actors with the utmost significance in the value chain. The apparel value chain is mostly buyer driven than product driven value chains (Fernandez-Stark et al, 2011). This is because the apparel chain typically begins with retailers and distribution outlets from importing countries that come up with the clothing collection they wish to market in the new season by exporting the chain's manufacturing component to the developed countries to maintain smaller production costs. Since the clothing manufacturers do not own the brand or the sales platform for direct exposure to the end consumers, they rely on the retailers who are the leading firms that control the industry. Innovation for clothing mainly rests in the product design and promotions rather than the 'know-how' of the manufacturing process making it increasingly simpler for companies to subcontract the production and retain more leverage in the supply chain, demonstrating that this sector is called a "buyer-driven" system (The Apparel industry, n.d)

The major divisions of the supply chain include several stages: design, production of raw materials, marketing, and distribution to the final consumers. The apparel chain usually begins with large

retailers of established brands and distribution interfaces in the importing countries. The importing country would create designs that they wish to sell in the upcoming seasons and then shift the manufacturing part of the value chain to developing countries to keep the production costs low. For apparel, in particular, the product design and market play an important role rather than manufacturing process, making it easier for lead firms to shift the production to developing countries and reserve more power in the value chain and this proves why the industry is deemed to be a buyer driven chain (Anonymous, n.d).

The apparel supply chain consists of the following stages.

- **Fibre Production:** Fibre is referred to the raw material that is used to create all kinds of apparel and garment products. There are natural as well as man-made fibres referred to as synthetic fibres. Natural fibres are made from agricultural resources, e.g. bamboo, cotton, jute, wool, silk, fur. Synthetic fibres consist of fibres produced from petroleum, Castor oil or coal that include nylon, polyester, acrylic
- **Yarning/Spinning:** The fibres are woven mechanically in spinning mills that turn them into yarn by twisting the fibres together and are produced in different varieties. Dying of the yarn is also carried out in this step. (Giri & Rai, 2013)
- **Fabric Production:** This process consists of knitting and weaving; two parts can be mentioned here:
 - i.) organized part – It consist of mechanical and technological mills
 - ii.) unorganized part- this sector consists of small knitters and weavers who work on handlooms in household's businesses, knitting machines and power looms.
- **Garment production:** The stage includes the process of designing, cutting, stitching, and finishing the product. Companies often have their own designs or can outsource it to the other design houses elsewhere. If the stitching process is contracted out by the garment production the clothes are sent back to manufacturing companies where the products are being prepared for the finishing process, that includes cleaning, packaging, and distribution through logistics and networks. (Giri & Rai, 2013)
- **Retailing:** There is a prevailing market for the retailers, where diverse retailers are functional as well as specialized in merchandise from one company and oftentimes, they are owned by the garment company. There are also various department stores which have a wider range of products. (Giri & Rai, 2013)

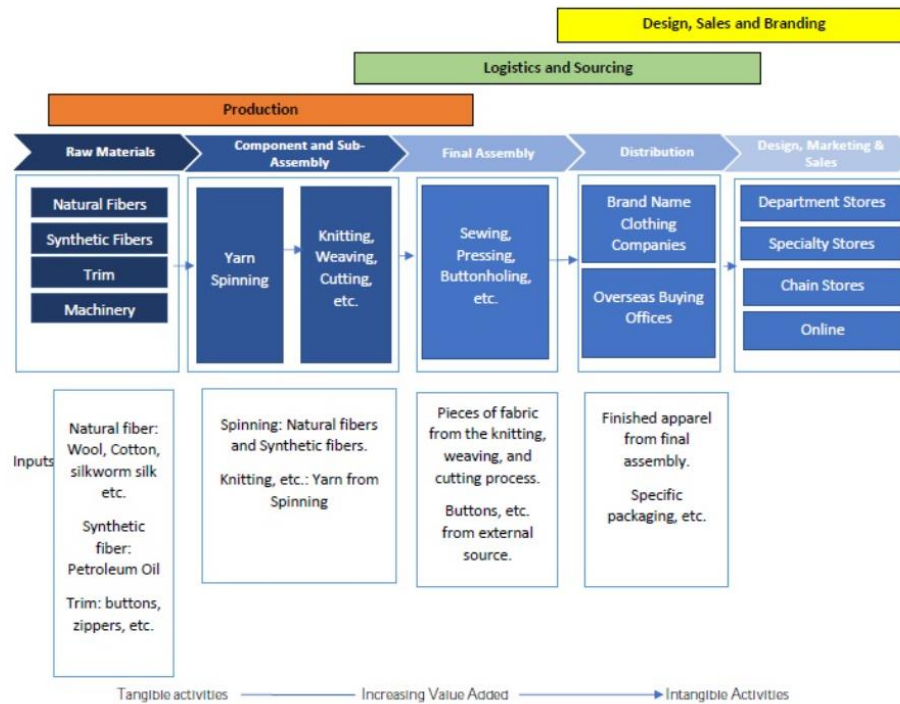


Figure 3: Apparel Value Chain. Adapted from: ' Duke Centre on Globalization, Governance & competitiveness', 2011

The systematization and coordination of the consumer needs and market play an important role in the supply chain because the higher the synchronization between these two co-exist, better performance of the company is observed (Giri & Rai, 2013). The supply chain as previously explained involves several processes which add to the unsustainability of the apparel sector and as a result there are increasing ethical concerns which are explained in the next sub-section.

2.2.1 Ethical Implications of The Clothing Industry

Throughout the increasingly globalized fashion industry, fair and ethical practices have become one of the most critical issues. Companies in this multibillion-dollar industry take this seriously by closely tracking and reacting to customer responses that involve voicing disappointment through social media or even calling for protests of particular products and companies (Cavusoglu & Dakhli, 2016). The interests of both suppliers and consumers has been attracted to the ethical practices of the industry, which is why companies and researchers must understand how ethical concerns influence this industry.

Social issues in the industry cover a number of factors such as underpaid jobs, human right abuse, child labour and extended hours of work. Social ethics are intended to guarantee the safety and well-being of the people and society who work in the industry. The distressing documentary "The True Cost" highlights certain issues in the context of worldwide production of clothing and the situations

of the sweat shops that define their daily working environment. Low salaries, long hours of labour exploitation were the target of significant criticism and were opposed by a large array of fashion industry critics. In the apparel sector, sweatshop labour conditions sparked an international uproar, particularly where children are involved. Even though the producers are willing to tackle the labour issues, supply chains are impenetrable since it involves a myriad of suppliers. This makes it immensely challenging for them to trace back the origin of their clothes in order to tackle and exert control over the social conditions under which they are being produced (Cavusoglu & Dakhli, 2016)

From an environmental perspective the apparel industry is a highly polluting industry. The life cycle of apparel is protracted and very complicated because it includes a global value chain and processes that influence the environmental impact after production. The image emerging when examining the effects of textiles from, and after use of, the raw materials is noteworthy. The major environmental consequences of the textile industry are the water footprint it demands and the release of high amounts of chemical loads and toxic chemicals, high energy usage in the manufacturing process, packaging issues and solid waste production. All of these in turn lead to the loss of biodiversity and excessive usage of the non-renewable resources. (Ozek, 2017) Therefore, sustainability programs are crucial for the business strategies of the apparel companies, especially those in sensitive business areas. Cooperation and effective use of natural and internal resources has become more important in an industry characterized by high competition and limited life cycle (Caniato et al., 2012).

These environmental and social factors account to the unsustainability of the clothing sector and the fashion system. Decrease in the clothing prices, low quality and shorter trend cycles add to the fact that clothing consumption has shown a sharp increase since a few years. A person's clothing consumption depends on their age, income, social status, gender etc. Dickinson (2019) emphasizes about the issues and expresses his view saying that retailers must have ways in which all income levels can afford fashionable goods, thus upholding their social duty to promote sustainable growth (Dickinson, 2019). The clothing industry and the fast fashion model is a barbarous cycle that needs to be challenged to become healthier both, for the planet and the people as fashion is considered as a highly globalized industry and ethics is deemed one of the most important issues (Cavusoglu & Dakhli, 2016).

2.2.2 Economic issues in the Apparel industry

The increase in economic sustainability in the apparel and textile industry can be considered as one among the major considerations with respect to sustainable development as the industry is connected with various economic gains. Firms invest in the form of dividends, taxes and other donations which contribute in enhancing the gross domestic product of the company that in turn leads to benefits to

society and other communities. However, a profitless situation hinders the industry's motivation to give back to the community which eventually takes a toll on the income of the government and citizens. Furthermore, increased consumer expenditure poses as an additional economic challenge for the sector as the consumers are the demand side of the supply chain which may influence the performance of a business and financial conditions for the overall industry. However, it is noteworthy to mention that the textile sectors consumes large amounts of energy in the form of electricity and fuel which have direct effect on the sector's production costs as the garment industry is an extremely complex sector with numerous production plants that consume large amounts of energy (Hasanbeigi 2010). Energy consumption is one of the textile industry's key cost drivers and the high market uncertainty of energy prices can have a direct effect on the industry's production costs (Hasanbeigi, 2010). Furthermore, the fashion industry is the third largest water user as it relies on water throughout the entire garment and clothing manufacturing process which will in turn increase the cost of production (Common Objective, 2018)

2.2.3 Sense of Sustainability Among Customers

Adherence to many ethical and moral standards in the textile sector is becoming a significant issue, as expectations of consumers today are not restricted to products of good quality but also towards upholding social and environmental standards (Cavusoglu & Dakhli, 2016). The pernicious effects of the fashion model, in recent years, has caused significant changes in the public perception of the apparel industry. As sustainability is increasingly valued, and hence awareness of the ethical issues with respect to clothing is also increasing. Consumers usually lack knowledge of the outcomes of manufacturing processes in the fashion industry (Bhaduri & Ha-Brookshire, 2011). The value 'transparency' is becoming more important as the requirement for ethical products is increasing, as consumers comprehend the impact of personal consumption patterns. Disclosures about risky working conditions in many offshore production facilities has led to some serious mass protests in some countries. According to SOMO (2018), the majority of businesses are not aware about the threats in their supply chain and they have no action plans to combat abuses. In addition, it is also unknown where the companies have produced their apparel and what practical solutions they suggest. The agreement provides for a total of 2,802 factories. Six violations were reported to the agreement's secretariat in those factories. However, it is quite unclear as to how these crimes were solved or whether they were taken into consideration or not as there was no complaint lodged by a single garment worker in the factory. Although this sounds optimistic, but it cannot be inferred that absence of complaints ensure safe and good working conditions. The agreement is committed at mitigating violations such as life-threatening, slavery and child labor. This is a crucial aspect with respect to social standards as the entire supply chain is rampant with these kinds of atrocious conditions. The organizations involved

should proactively recognize these kind of potential risks and formulate action plans to mitigate those risks (Theuws & Overeem, 2018). Due to the increase in awareness regarding sustainability among consumers and investors it is therefore necessary to explain about the importance of sustainable development, important aspects related to sustainability and their importance in businesses. The next sub-section will elaborate on the same.

2.4 THE CONCEPT OF TRIPLE BOTTOM LINE (TBL)

The United Nations Assisted the Brundtland commission to publish the report “Our Common Future” in March 1987 when there was a rise in the global ecological destruction. The report for the first time introduced the idea of sustainable development as stated below: “*Development that meets the needs of the present without compromising the ability of future generations to meet their own needs*”. This is the most widely used definition of Sustainable development (Shen and Li, 2017). This definition aims to integrate social equity, environment protection and economic development. Therefore, sustainable development is an integrated concept with three dimensions: Economic, environment and social sustainability which is also referred to as the Triple Bottom Line (TBL) of sustainability (Purvis & Mao, 2018). The definition of the TBL is however, essential to longevity which ensures that company success is no longer only characterized by marginal benefits but by the impact of the business as whole on society (Arowoshegbe et al, 2018).



Figure 4: Three pillars of sustainable Development. Adapted from ‘Three Pillars of Sustainable Development: Conceptual Origins’ by Purvis & Mao, 2018

A brief description of the three facets of sustainability are explained below:

Social Sustainability

This section aims to give a brief overview of the concept of social sustainability and the factors associated with it. The concept of social sustainability has been overlooked in comparison to economic and environmental aspects of the concept of sustainability following the emergence of the notion of sustainable development in 1987. Social sustainability was considered central to the sustainability agenda in the late 1990’s and was thereafter given greater attention. Social

sustainability is an integral aspect of the well-being and longevity of a society. Although there are different social responsibility dimensions the most widely used was developed by Nobel laureate Amartya Sen which includes: Quality of life, Equity, Diversity, Human coherence, Democracy and Leadership (Chan, n.d). . Nevertheless, despite the tremendous amount of research in this field in recent years, there is still a lack of a systematic concept of social sustainability. (Hajirasouli & Kumarasuriyar, 2016).

Environment Sustainability

Understanding and application of the term 'environmental' also appears to be synonymous with human influence on natural environments. Environmental sustainability can be described as the fulfilment of the resources of current generation without affecting their ecosystems, especially as an important condition for equilibrium, resilience and other interconnections without overriding the capacity of its ecosystems to continue rebuilding (Morelli, 2011).

Economic Sustainability

The concept of economic sustainability varies depending on whether the term is used in the smaller business context or in the larger economy. Good economic sustainability exists in the business sense, when resources are used carefully and thoughtfully to foster stable and long-term development. In other terms economic sustainability is the economy's capacity for indefinitely sustaining a given level of economic production and about doing business responsibly and building the bottom line without causing unnecessary harm to the planet (Kinsey, 2019). The next section will emphasize on sustainable clothing which is necessary for this research as studies are mostly consumer focused. This section will also elaborate on the elements in which the clothing brands would engage to incorporate sustainability in their business.

2.5 SUSTAINABILITY IN CLOTHING

Sustainable fashion is a term that has been widely used in the fashion industry in recent times. It is not only focused on the popularity of socially conscious labels utilizing environmentally friendly goods, but also serving to the needs of the people. It depends not only on the trend of socially responsible brands with environment friendly products or coming up with any regulatory policies, but it also includes catering to the needs of the planet and the people. Hence sustainable clothing is defined as *"clothing which incorporates one or more aspects of social and environmental sustainability, such as Fair-Trade manufacturing or fabric containing organically grown raw material"* (Harris et al, 2016). Sustainable fashion can also be elaborated as the means in which clothing, shoes and accessories are produced in a socially and ecologically responsible environment that also contemplates on sustainable

consumption patterns of customers. However, there are numerous resources that the fashion brands can employ to provide sustainable apparel to consumers and encourage more ecologically safe consumption methods (Anna, n.d).

2.5.1 Design Oriented approach for Sustainable fashion Innovation

Sustainability is a growing phenomenon in today’s socio-conscious economies that stems from the idea of sustainable development. In business terms, it can be stated that the businesses are able to carry out their activities economically, socially, and environmentally without any interruptions to preserve the standard of healthy living for the benefit of future generations. Many companies see innovation as a tool for being a market leader. Industries feel the need to make significant changes in today’s rapidly changing markets or introduce “something different” to the market so as to differentiate themselves from competitors (Muslu, 2012). There is a broad consensus within the industry that true sustainability can only be accomplished by a comprehensive transformation of the entire fashion system where the sustainability efforts must extend further than the supply chain to various fields such as market and product growth or customer engagement. A concept model was developed as seen in Figure 5 to decide the aspects through which the fashion industry will lead to sustainable development within their businesses. Implementing a socially relevant concept (ISRD) in the area of fashion design practice, which aims to redefine the position of designers and manufacturing firms, is the main drivers of this paradigm. ISRD is a cross-disciplinary solution to the textile industry with a socially relevant goal. This model is based on the systems approach with a set of interconnected elements. (Kozlowski et al., 2016)

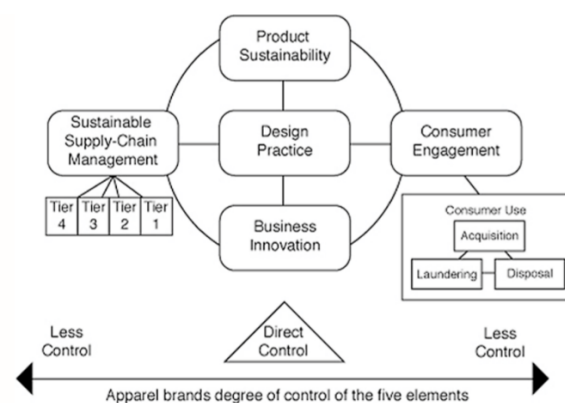


Figure 5: Innovative Design Driven Model for the Apparel Industry. Adapted from ‘Innovation for a Sustainable Fashion Industry: A design focused approach towards the development of new business models’ by Anika Kozlowski, 2016

The model is defined by the degree of control a fashion company will exert over the various components present in its business. The fashion companies specifically monitor aspects related to

market development, quality and safety of the product and areas of innovation. Brands and apparel manufacturing firms have various degree of control and influence on their supply chain sustainability and consumer engagement. The product sustainability includes aspects with respect to the type of apparel manufactured, choice of material used, reuse and recycle strategies, quality, and packaging. The design practice or process design concerns challenges with respect to waste production, transportation, and inventory management. It also examines topics of societal significance such as environmental justice, labor implications, social trends and habits. The supply chain design refers to what the company chooses to in-source and out-source. It relates to relationships with suppliers and others in the supply chain. The apparel brands typically divide suppliers into groups for organizational purposes. Supplier involvement is considered crucial as they can aid in reducing waste and utilizing more environmentally friendly materials in their activities. Consumer engagement refers to the choices they make with respect to apparel in the purchase, use, care of and disposal of apparel items (Kozlowski et al., 2016).

The trend towards contributing to sustainability in the production and retailing of apparel is the result of key drivers. Drivers can be characterized as motivators that can contribute to a sustainability stem from certain external and internal pressures (Alzawawi, n.d). The drivers can be categorized as external, internal and context related (Caniato et al, 2011). Internal drivers include the organizational related factors such as pressure from top management or efficiency and quality related objectives. Internal drivers also include collaborations with suppliers to identify environment friendly products and equipment's to reduce negative impacts. Besides the internal pressures which lead to incorporation of sustainability into the supply chain processes, there exists some external influences which plays an important role in this integration. External/Market drivers refers to the non-organizational elements but will have a strong influence on the company's internal operations. The market/external drivers compel the firms to adopt new management strategies (Alzawawi, n.d). External drivers include the requirement for sustainability by consumers, media, suppliers, competitors, international standards, and society. The context related drivers include the laws, regulations and standards of the government and the European standards for textile and apparel production (Caniato et al., 2011). The innovative design model and the literature on the drivers guided the development of the Analytical Framework elaborated in chapter 3 which is based on the elements Apparel retailers/fashion brands would engage to develop sustainability within their business.

2.5.2 Scope for Economic Sustainability

Sustainable clothing can provide a new demand with increased employment prospects, a constant net influx of capital in the industry, reduction in consumption of raw materials and energy but it in the

terms of what type of natural resource is used for the manufacturing and how these resources are being utilized and renewed, the total environmental effect of the end product, its production process and its disposal. Progress in the garment sector continues with the increased usage of natural fibers when compared with man-made fibers. The clothing and fashion companies affect the economic situation at every point along the lifecycle of the product. Nevertheless, strong economic development plays a vital position in the manufacturing sector. In the light of the growing economic needs in the apparel industry, little work has dealt with techniques and basic instruments to guide textile designers. Although a lot of resources are used during fabric finishing and garment manufacturing in the form of energy and water, the producers in the textile industry are thinking about the sustainable contribution prior to the production of clothing (Karthik & Gopalakrishnan, n.d).

2.5.3 Materials and their importance

Design and fashion in clothing fulfil basic human needs for clothing and protection, whilst satisfying the requirement for decoration and beautification at the same time. The fundamental existence of fashion textiles in human culture indicates that they are at the forefront of technical and artistic growth. The prominent thing that strikes our minds when we think about clothing and textile sustainability is the type of material being used in the production as they play an important role in making apparel look good and appealing (Ali & Sarwar, 2010). Although, cotton is the most widely used fibre, it has certain drawbacks with respect to pressure on water and land resources. For that considerable reason various experiments are being carried out in the textile industry. Notably Bamboo, Eucalyptus / Tencel, Hemp and organic cotton are considered to be the alternatives. All of these above-mentioned materials are mostly extracted from the stems and bark except organic cotton. These fibres require minimum processing and are not chemical heavy therefore limiting the amount of pesticides seeping into the soil.

2.5.4 Standards and Certifications

Several requirements and qualifications such as standards and certificates exist in the textile sector of which the apparel/clothing industry is a segment of it. These are intended to standardize and render more sustainable textile industry procedures and practices and also additionally several audits are performed to ensure compliance of these standards in the company. A standard can be referred to as *“a document that provides requirements, specifications, guidelines or characteristics that can be used consistently to ensure that materials, products, processes and services are fit to their purpose”* (TROAX, 2014). Some of the most significant standards in the apparel industry are introduced below:

- **Global Organic Textile Standard (GOTS)**

The aim of this standard can be stated as *“to define requirements to ensure organic status of textiles, from harvesting of the raw materials, through environmentally and socially responsible business manufacturing up to labelling in order to provide a credible assurance to the end consumer”*. This norm extends to the organic fibre production across the entire supply chain. A distinction is made between products receiving Label 1 and Label 2, which are made from organic cotton only or X percent organic cotton. (Global Organic Textiles Standard, 2020)

- **ISO 14001:** This standard applies to the environmental management systems, resource, waste, energy management, and environmental impact mitigation. ISO 14001 provides the standards for a certifiable environmental management system. This is defined by a framework that an organization or entity should follow to establish an appropriate environmental management system. (ISO, n.d)
- **OEKO-TEX:** This organization has over 15 research institutes throughout Europe and Japan. It checks products for toxic ingredients. Made in Green by OEKO-TEX is a mark that checks for social production manners. It facilitates companies and consumers to make responsible decisions that protect the planet and the future generations (OEKO-TEX, n.d)
- **ILO Decent Work Framework:** The International Labour Organization and its framework is globally renowned and contains 10 elements that suggest decent work. As stated in the framework they are : *“ employment opportunities, adequate earnings, productive work, decent working time, combining work, family and personal life, work that should be abolished, stability and work security, equal opportunity and treatment in employment, safe work environment, social security, social dialogue, employers and workers representation”* (ILO, n.d)

2.5.5 Importance of Green Suppliers

The research on sustainable apparel/clothing has provided several case studies on clothing companies with plans to create a more sustainable supply chain. Suppliers play a crucial role at every stage of the lifecycle of the product. Companies must be closely associated with their suppliers to ensure good sourcing strategies are being followed, to seek viable options to suit the competitive market and to boost productivity. However, the role of a supplier in a business can sometimes be challenging because customers expect the suppliers to produce goods of high quality and on the other hand the manufacturers expect the suppliers to sell a lot of products. Therefore, the suppliers have to be adaptive and pragmatic to consider how partnerships and relationships with various stakeholders are handled in a positive sense (Oberlo, 2018). Since sustainable entrepreneurs are often smaller in number than their fast fashion counterparts (Kogg, 2003).

The next sub-section will elaborate on business model innovation and sustainable business model framework and it will however start with a paragraph on shared value.

2.6 BUSINESS MODEL INNOVATION

Business models are the structure and definition of how companies develop, produce, capture value, and shape effective success strategies. In order to maintain the focus on value creation, expenses and benefits, market value proposition, consumer needs and preferences and corporate strategy, business models are used by companies as a tool to define their customers and to measure values. The innovation of business models is seen as an increasing way to pursue sustainability in society. Although, before value was mostly seen in terms of economic growth but the awareness and understanding of sustainability has caused a change in this perception (Thorisdottir & Johannsdottir, 2019).

It was also argued by the authors that advances in the business model are a requirement in promoting a comprehensive and systematic ongoing development in business cases for sustainability (Schaltegger & Ludeke-Freund, 2013). They suggest three business criteria for business cases in sustainability:

- 1) To help address social and/or environmental issues, the organization must consciously carry out charitable programs.
- 2) It must have a positive market outcome or a positive economic impact.
- 3) A strong, clear, and compelling statement must exist that a certain management action has caused or would contribute to both.

It can also be argued that a large part of the problem rests with the corporations themselves, who are trapped with an archaic value development strategy that has eventually changed in the coming years. The firms attempt to analyse value creation closely, optimize short-term financial performances leading to negligence on the most important customer requirements and ignoring the broad variety of variables that decide their long-term sustainability. Industries must take the initiatives to unite both society and corporations. New models are evolving, but a fundamental theory for coordinating such acts is still missing, because businesses are caught in a mentality of “financial responsibility” where social problems are at the periphery and not at the centre of the business. The solution lies in the concept of shared value which reflects on economic growth in a manner that generates benefit for the society by addressing their requirements and barriers (Kramer & Porter, 2011).

2.6.1 Why are business models key to sustainability?

Enhancements in eco-design and eco-efficiency have led to a considerable decrease in carbon emissions, waste and pollution. It is anticipated that ingenuity, imagination and invention can play a key role in seeking greater competitive capability and successful forms of doing business. (Evans et al, 2017). In order to provide long-term sustainability on a large scale the firms have to undertake systematic shifts with respect to the global economic landscape that includes a holistic approach that goes one step ahead of eco-efficiency initiatives and rethink how companies must frame their business models. Sustainable business models can act as a mechanism for integrating system level technological and social developments with sustainability. Constructing on the authors ideology on sustainable development, business models protect the environment while seeking to enhance the living standards of human life (Bocken et al, 2013).

One of the biggest obstacles is to design business models in such a way that by delivering social and environmental benefits, the firm can capture economic value for itself. Though efficiency and quality gains may probably have turned into profits in the past, it is not quite certain whether environmental and social value will turn into revenues and strategic benefits for business. The increasing attention paid to business models in literature and practice nonetheless suggest that this is a vital corporate innovation that can thus be applied to promote sustainable innovation (Bocken et al., 2013).

2.6.2 What is sustainable business model innovation?

Given comprehensive business model literature, there is often considerable ambiguity as to what is innovation in a business model. The literature typically frames innovation in the business model in the sense of customer value proposition. However, innovative business models involve more than just improving the product and service standard delivered to the customer. Business model creation requires “the way you do things” instead of “what you do” and therefore should be able to extend through systems and products. It captures a variety of stakeholders with respect to environmental, economic, and societal (Bocken et al., 2013).

Business model innovations for sustainability can be defined as “ *Innovations that create significant positive and/or significantly reduced negative impacts for the environment and/or society, through changes in the way the organization and its value network create, deliver value and capture value (i.e. create economic value) or change their value propositions*”. In order to resolve the challenges of a sustainable future, innovative solutions must be incorporated at the core of the company paradigm rather than an add-on to minimize unfavorable market outcomes. By doing so, the sustainability issues can be tackled at the source. The ambitions of business model developments must be strong and

based on optimization of social and environmental initiatives rather than economic outcomes (Bocken et al., 2013).

2.6.3 Sustainable Business Models and archetypes

Sustainable business models can be considered as a more sophisticated approach to sustainability than strategies. Changes that are made to implement sustainability issues at the strategic level and in processes are presumed to result in remodelling of the business model framework. Considering the most recognised approach to sustainability (Triple Bottom Line) definition of sustainable business models is proposed. It can be defined as *“SBM incorporates a triple bottom line approach and considers a wide range of stakeholder interests, including environment and society. They are important in driving and implementing corporate innovation for sustainability, can help embed sustainability into business purpose and processes, and serve as a key driver of competitive advantage”* (Rudnicka, 2016). While research in sustainable business models are traditionally embedded in ecological sustainability, the author claims that business models are more often used as a tool in addressing social needs.

The author also emphasises on the notion that potential for sustainability is often overseen. It is due to a lack of coordination between sustainability priorities and policy development process, as well as the lock in consequences that come with business models from existing businesses that establish limits for changes in corporate behaviour (Schaltegger et al., 2015). Eight separate archetypes of SBM can be described that define the underlying processes and solutions that lead to the design of transformative innovations. The framework includes technological, social and organizational archetypes reflecting the predominant areas of innovation as depicted in the figure 6.

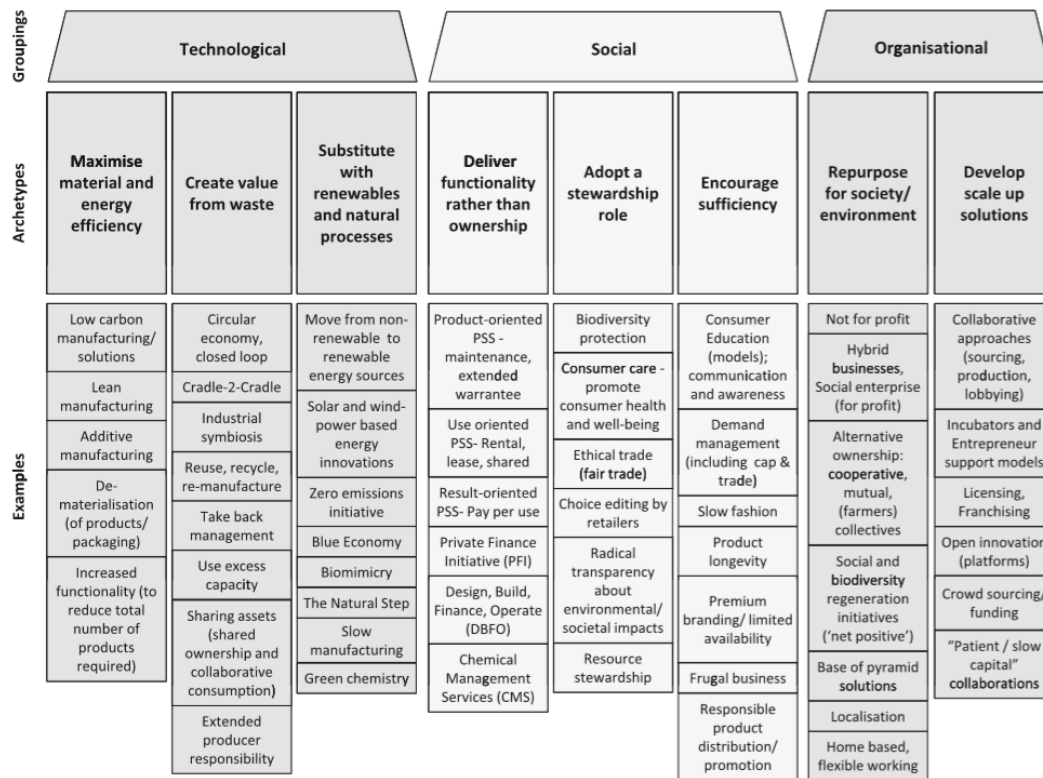


Figure 6: Sustainable Business Model Framework. Adapted from 'A literature and practice review to develop sustainable business model archetypes' by N.M.P Bocken and S.W. Short, 2013

Technology involves production processes and product redesign; social consists of archetypes such as trends in changing customer behaviour and offerings; organizational consist of a dominant organizational innovation change component. The archetypes are related to a large variety of sectors, including the apparel industry (Bocken et al., 2013). Some of the ways that apparel firms implement more sustainable business practices can be found in the example above for the sustainable business model. Throughout this study the framework will be a valuable tool as well.

Archetype 1: Material and energy maximization

This model seeks to optimise the material quality and energy output by reducing resource flow volume to minimise resource consumption in comparison to higher production and use. In other words, it implies to generate fewer waste streams, less carbon emissions and pollution. Implementation of these strategies involves principles such as eco-product design, lean and sustainable approaches to manufacturing and waste reduction. (Pal, 2017)

Archetype 2: Creating value from waste streams

Through rendering waste sources, as a viable and efficient feed into other goods and effective usage of energy, the problem of waste can be tackled (Bocken et al, 2013). Unlike today's linear economic paradigm of 'take, make, dispose,' it focuses on redefining products, materials and resources for

numerous recycling and re-use processes rather than disposable commodities. Such closed loops of resources and energy suggest that products may be reused as bulk materials and components by various methods (or industrial activity) such as recovery or recycling, thereby providing a revolutionary means of manufacturing, selling and consumption of goods and services with the idea of circular economy. (Pal, 2017)

Archetype 3: Replace with sustainable and natural processes

This segment is aimed at reduction of environmental footprint of businesses by substituting for green energy and other natural resources to produce ecologically sustainable goods. This in turn leads to a broader necessity to reduce the usage of the planet's non-renewable resources and to eliminate the unnecessary and harmful emissions (Bocken et al., 2013).

Archetype 4: Providing user experience than ownership

This archetype aims to provide services to users rather than claiming the ownership of the products. It draws on the research on Product Service Systems (PSS), which explores how market structures shift from product sales to providing a service combination. The product still remains important, but the experience of the customer is central to value proposition. This can radically alter the criteria for material production of the industrial system (Bocken et al, 2013)

Archetype 5: Adopting a stewardship role

This archetype is designed to maintain long-term security, health and wellbeing to optimize the companies positive social and environmental effects on society by proactively engaging with the stakeholders. Organizations constantly seek to improve their operation strategies to preserve and strengthen the well-being of their networks. This approach therefore aims to establish a sustainable community and the planet systematically (Bocken et al., 2013).

Archetype 6: Promote and Encourage sufficiency

Encouraging sufficiency seeks to minimise or limit consumption levels and volumes resulting in a structural shift in the Western economic model that is focused on the consumer economy, the throwaway paradigm and planned obsolescence (Pal, 2017). This archetype is also intended to deal with sustainable consumption patterns and provide and provide solutions to minimize demand and consumption actively (Bocken et al., 2013).

Archetype 7: Refocus business segments on society/environment

Prioritization of social and environmental advantages and not on the maximization of economic benefits, by strong contact between companies and local communities and other interested parties.

On a systems level, this can bring about a change in companies' fundamental objective of delivering environmental and social benefits, thus leading to a global, economic change. Changes in the global policy environment will enable these firms to achieve their scope without the necessity to optimise the shareholder value (Bocken et al., 2013).

Archetype 8: Develop scale-up solutions

This archetype is introduced to focus on the scale up solutions and the broad spectrum of factors related to the existence of sustainable business models. Different examples of the above are founded on sound sustainability principles in the emerging business models.

2.7 SUSTAINABLE ENTREPRENEURSHIP

Inventions which can have a meaningful social and environmental effect will reach past their target market and translate into sustainable and productive transformations. Sustainable entrepreneurs often face this dilemma when attempting to collate innovative approaches to the sustainability issues through entrepreneurial practices while striving for a broad audience and socio-political impact. Sustainable entrepreneurs explicitly relate their business performance to achieving positive results for the natural world and humanity and thus generating value for a broad variety of stakeholders. Nevertheless, recent research exposes considerable uncertainty about innovation-centric approaches (Ludeke-Freund, 2019). While there is an inextricable link between social and environmental aspects of sustainable development, most scholarly research on sustainable entrepreneurship focuses on either of the two aspects (Hockerts & Wustenhagen, 2010).

Despite the critics describing sustainable development with the Triple Bottom Line (TBL), the concept is commonly used to describe how sustainable entrepreneurs' function. Sustainable entrepreneurs are characterized by combining economic growth (profit), social equality and ecological responsibility with good corporate governance. The term sustainable entrepreneurship can be defined as the *"discovery, creation and exploitation of entrepreneurial opportunities that contribute to sustainability by generating social and environmental gains for others in the society"* (Hockerts & Wustenhagen, 2010). The idea of longevity, ensuring long lasting products, principles or services is a shared ground between entrepreneurship and sustainability: the maintenance of existing resources for decades to come (sustainability) and the creation of long-lasting alternatives (entrepreneurship). Sustainability and entrepreneurship require innovation and new combination of existing resources (Hogendoorn et al, 2019). However, it was argued that sustainable entrepreneurship is a strategy often employed by big industrial firms. A whole host of sustainability certificates came up in their wake. Due to the proliferation of complex and expensive procedure for obtaining them, SME's have practically ignored

them. Since the benefits can be meaningful in terms of risk management, business relationships with big businesses and positive reputation, the question arises as to whether SME's can actually afford a sustainable way of doing business. (Crals & Vereeck, 2005)

Hockerts & Wustenhagen (2010) interprets that start-ups and market leaders are each playing their part in shaping industries to achieve sustainable growth. It is noteworthy that as an industry it is increasingly under pressure to embrace sustainable growth and hence more and more innovative projects are emerging. These 'Emerging David's' exhibit an elevated level of environment and/or social performance which appeals to a small subset of consumer groups concerned with issues related to sustainability. Yet, these David's still fail to reach a broader target audience. However, the incumbents face strong competitive and market pressure from these David's which compels them to increasingly engage in sustainable entrepreneurship. Such incumbents can be termed as 'Greening Goliath's' who intend to influence consumer groups more deeply and widely since they are able to reach out to a wider market segment. (Hockerts & Wustenhagen, 2010). The characteristics of Davids and Goliath's are shown in the table below:

Table 1: Characteristics of Davids and Goliath's (Adapted from "Greening Goliath's versus Emerging David's - Theorizing about the role of incumbents and new entrants in sustainable entrepreneurship" (Hockerts & Wustenhagen, 2010)

Criteria	Davids	Goliath's
Age	Rather new	Old, incumbent
Size	Small	Large
Objective element	Socio-environmental targets are at least as essential as economic objectives	Economic goals dominate, social and environmental goals are complimentary.

The David's and Goliath's have a role to play in the sustainable growth of an economy. The relationship between the two is fundamentally like a co-evolution with each side pushing forward towards a transition. Nevertheless, the author suggests that the Emerging David's prefer to pursue sustainability steps in the early phases of economic growth of an enterprise and the Greening Goliath's in response to the David's activities, tend to participate in corporate sustainable entrepreneurship activities. Nevertheless, owing to their established business position and market presence, the greening Goliath's are less aggressive in terms of their environmental and social goals. With respect to the competition between conventional entrepreneurs and sustainable entrepreneurial start-ups, start-ups are much more likely to be successful, because they are not afraid to lose the market share. Yet the competition from emerging Davids will encourage corporates to go beyond the normal steps. Therefore, the Goliath's also actively participate in radical environmental or social developments, for e.g. by introducing sustainability management systems, eco-friendly initiatives relating to efficiency or

corporate social responsibility. Nevertheless, the incumbents are also caught up in a 'business as usual scenario' making them less vulnerable to environmental practices. Therefore, the authors argue that the sustainable transformation of this industry cannot solely occur with either of them engaging in sustainable entrepreneurship, but instead their interaction is essential to create a sustainable market presence (Hockerts & Wustenhagen, 2010)

The next sub-section will elaborate on the integrative sustainability triangle which can be used as tool to determine the extent of sustainability efforts an organization will be undertaking in their business.

2.7 INTEGRATIVE SUSTAINABILITY TRIANGLE

The IST promotes horizontal convergence of the interested parties as it acknowledges the priorities of various participants. The method promotes rationality as an analytical concept that minimizes ambiguity by putting the aggregate problems into a defined sense such as a framework. Within the sense of the large spectrum of sustainable growth and advancement, the IST promotes the cohesive inclusion of all the facets of sustainability. This obligates the individual to treat all the parameters into account in a fair and equitable manner. The diverse interests of the various parties are then delegated to the triangle where they can be merged and correlated (Kleine & Hauff, 2009)

2.7.1 The integrative sustainability triangle as a systemization tool

The IST can be inferred to as an interdisciplinary approach which is derived from the disciplines of engineering and material sciences. Such disciplines view ternary mixtures (a blend of three components) such as paper, computer screen etc., on a two-dimensional media. This is commonly referred to as the "Gibbs Triangle" which is also known in several other terms such as "concentration triangle", "triangle diagram" and "ternary plot". Figure 7 provides an illustration of the XY alloy-comprising of '10%X, 20%Y, and 70%Z'. With the term "integrative" the distinction from other 'sustainability' approaches is stressed (Kleine & Hauff, 2009).

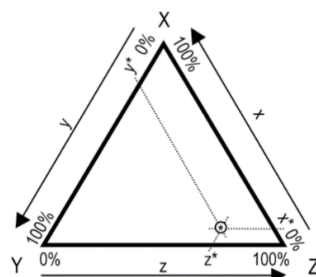


Figure 7: Sample blend of the three Gibbs triangle components. Adapted from 'Sustainability- Driven Implementation of Corporate Social Responsibility: Application of the Integrative sustainability triangle' by Kleine & Hauff, 2009

The above equilateral triangle can be transposed into the sustainable development model in three dimensions. It is achieved using IGT as shown in figure 8.

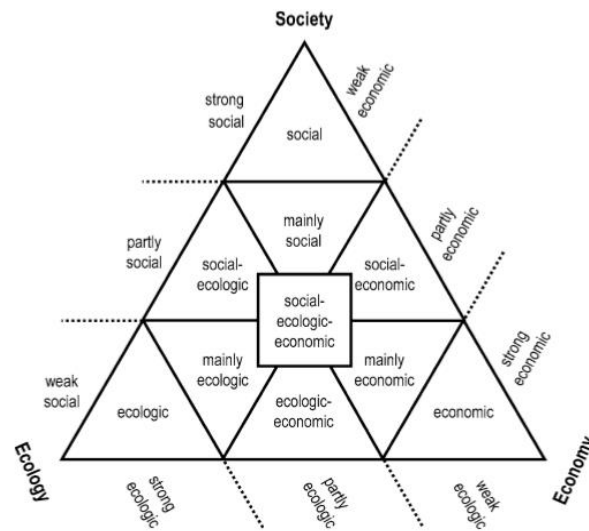


Figure 8: Fields of Integrative Sustainability Triangle. Adapted from ‘Sustainability- Driven Implementation of Corporate Social Responsibility: Application of the Integrative sustainability triangle’ by Michael von Hauff, 2009

The three dimensions (ecology, Economy and society) represent a dynamic interaction, which separates the triangle’s internal fields from its boundaries. Each corner of the triangle is representative of the dimensions of sustainability. The outer boundaries of the triangle represent the lines which connect the three corners to the dimensions of sustainability. The further the distance from every corner, lesser is the connection with that element. The parallel channels aid in measuring the distance with respect to the side facing that corresponding corner. For every aspect there are three degrees of association that is stated below:

- A strong association suggests the superiority of a particular aspect. The three “corner fields” of IST relate closely to either of the dimensions of sustainability. The corner areas themselves reflect a three-polar sustainability paradigm where economic, social and ecological are equally intertwined.
- A partial association implies that multiple dimensions influence a field. An area adjacent to a corner field is less influenced by an dimension in comparison to the strong association. For example, the “the mainly ecological” field inclines towards an ecological corner, yet the economic and social corners also influence the field moderately or a field can also be affected by two dimensions.
- A weak association exists for an area with little influence from a given dimension. In this area, the contributing factors come from one dimension or the other.

The region in the middle is a unique case represented by the IST. The central area is connected equally to all the three components(Kleine & Hauff, 2009).

CHAPTER 3

RESEARCH DESIGN

The tasks and methodology to be undertaken in order to address the research questions put forth for this study are covered in this chapter which is elaborated below.

3.1 RESEARCH FRAMEWORK

The research framework is the key step from the formulation of the research objective to the set of research questions. The main objectives of this research are: (i) to gain an understanding on how the retailers in the Dutch clothing industry are combining the aspects related to sustainability to create businesses that operate sustainably in the broader sense, and; (ii) to identify the challenges faced by the companies to incorporate sustainable production practices. In the current research, the research object comprises the business models of sustainable Dutch SME’s retailers/suppliers of apparel.

This research will assess the drivers involved with respect to the sustainability choices made by the Dutch retailers of the apparel/fashion brands. The research will also focus on the ways in which social, environmental, and economic sustainability are combined into these company’s business models. To give recommendations the research will use semi-structured interviews to interview various actors (retailers and fashion experts). Hence this research is inclined towards an evaluative and descriptive forms of research. This study used scientific literature in identifying core concepts and establishing an analytical model. The column on the right of figure 9 represents the theories that were used in this study, while the column on the left are the main concepts that were used to define the object of this research.

Key Concepts	Theories
SME’s and its Business models,	Theories on Sustainable business model
Sustainable Entrepreneurship	Emerging Davids Theory
Sustainable clothing	Retailers in Sustainable clothing
	Integrative sustainability Triangle

Figure 9: Sources of research perspective

The schematic presentation of the research objective is described by the figure below. This was devised in relation to the key concepts and theories used in this study.

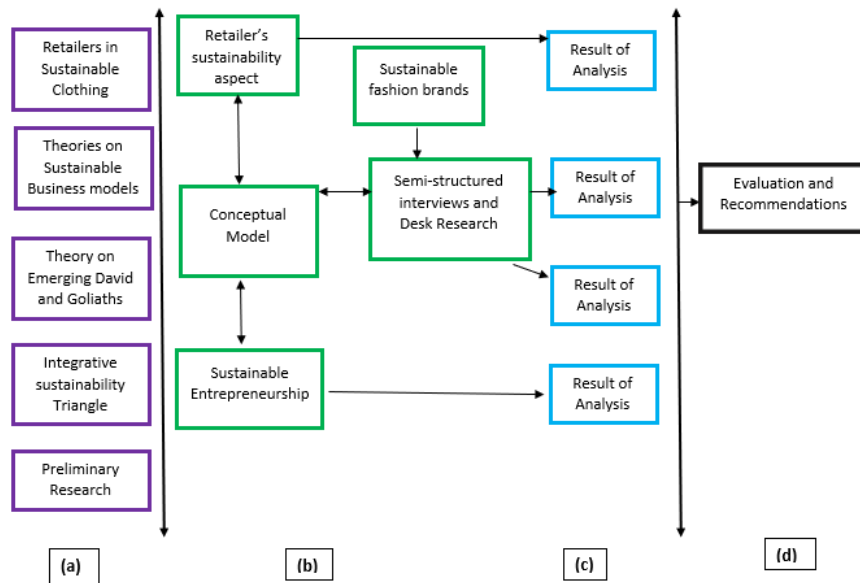


Figure 10: Schematic Representation of Research Framework

- a) The sources from which the research perspective has been developed are described in this section. It entails the study of theories on Sustainable business models and Emerging David/Goliath's theory, sustainability triangle and sustainable apparel. This is focused on the literature analysis of the research context of this study yielding to an analytical model.
- b) This indicates on how the research perspectives were applied to which research objects.
- c) The research object being sustainable fashion brands will be evaluated using semi-structured interviews and desk research.
- d) This segment indicates how the findings of the study based on suggestions interrelate the topic. The aim of the research was to explore the sustainability initiatives adopted by the companies and provide recommendations on the problems encountered by the businesses in order to address the facets of sustainability in practice.

3.2 DEFINING CONCEPTS

For the purpose of this study, the following key concepts were defined as stated below.

Sustainability: It is referred to as *“the development that satisfies the needs of the present generation without compromising the aptitude of the future generations to satisfy its own needs.”* (Commission Brundtland: Our common Future, 1987)

Social Sustainability: It can be defined as the framework or a process that promotes wellbeing by understanding the needs of the people from the places, they work and live. Communities that are socially sustainable are equal, diverse, inclusive and have a decent quality of life (ADEC innovations, n.d)

Environmental Sustainability: It can be referred to as the responsible engagement with the planet in order to conserve the natural resources and to insure that prospective generations will not lose the ability to fulfil their own needs (Evans, 2020).

Economic sustainability: Economic sustainability is the term used to identify different strategies which enable the best use of those tools in a way that is both effective and accountable, and likely to bring long-term benefits (Wisegeek, n.d)

Sustainable Entrepreneurship: It can be described as the discover, establishment and use of entrepreneurial resources that will lead to sustainable growth by social and economic progress that will benefit the society. (Greco & Jong, 2017)

Life Cycle Assessment: it can be defined as a tool for measuring a products environmental effects over its life cycle (What is life cycle assessment, n.d.).

3.4 RESEARCH STRATEGY

The research strategy used mixed methods to validate the information collected during the study by different sources of information. For this research the following research methods were considered.

Desk Research: This involved reviewing and analysing the relevant literature that covered aspects related to sustainable fashion, fast fashion, and sustainable business models. The search engines which was used were: Research gate, Google scholar and the policy documents of the European commission. Next to this I was provided with additional materials such as webinars and websites related to the research by Dr. Laura Franco-Garcia who is also the study supervisor of this research.

Semi-structured Interviews: The interviews were conducted with sustainable clothing brands in the Netherlands. The interviewees were mainly comprised of the founders and managers of sustainable fashion firms. The interviewees were also consisting of two fashion experts where one of the experts can also be classified as a founder of a sustainable fashion brand which is yet to be launched in the market. However, for the purpose of this research it was necessary that the interviewees are the owners of the brand in order to get the required data to answer the research questions. The interviews followed a semi-structured format with a list of open-ended questions (see appendix 2) that allowed for a discussion rather than a strict answer format. The interviews lasted about 30-45 minutes and it was conducted through online conference tools. This strategy was followed because there was a wide array of topics to be discussed that aided in answering my research question and also broaden my knowledge with interesting data in different areas.

3.4.1 Research Unit

The units of this research are: i) Sustainable clothing companies in the Netherlands ii) Retailers and Suppliers. However, the Dutch Apparel Companies are the main focus of this research.

3.4.2 Selection of Research unit

The clothing companies were chosen on the basis of their establishment and who have chosen to produce in a sustainable manner or have sustainable suppliers. The companies had to adhere to the 'Emerging Davids' theory that comprises of small sustainable companies which are not an old venture in the market. With reviewing the company's websites and statements on sustainability I was able to gather the sample of companies used for this research. The sample of companies chosen were mainly retailers as this research focuses on on the perspectives of retailers on sustainability.

3.4.3 Research boundary

The limitation of the study and its accuracy are determined using the research boundaries which also requires the set goal to be achieved in a specific time duration. Due to time constraints the Netherlands was chosen as the geographical location of this research. Although there is a probability that the findings of this study can later be extended to other countries, for instance my home country, but the main focal point of this research is the Netherlands. Lastly, the study had been restricted due to the unexpected COVID-19 pandemic where restrictions on travel and mass gathering were imposed. Nevertheless, online conference tools were used to perform the interviews.

3.5 Research Material and Accessing Method

Different strategies including semi-structured interviews and content analysis were used to gather data required to answer the research questions. Document analysis was conducted through reviewing existing literature about sustainability in the apparel sector, fast fashion, and sustainable entrepreneurship. Also, semi-structured interviews were conducted with key informants from the sustainable clothing brands and informants from experts in sustainable fashion. The data was also gathered from the sustainability report of the companies specifically the reports that are published not more than two years ago. This is crucial as this research contemplates on the current sustainable practices that are being followed in these firms. The interviewees considered for this research are listed below.

- a) Four informants from apparel retailing brands which comprised of: -
 - Three interviews with the founders of their respective fashion brands
 - One interview with the CR manager of the brand.

b) Two Informants who are experts in sustainable fashion

The companies considered for this research and the interviewees designation in the respective company are listed below which are anonymised in the findings section.

- Woven BV: This company is referred to as 'company 1' and the interview was carried out through online communication tools with the co- founder of the company.
- Unrobe: this firm is referred to as 'company 2' and the interview was a phone conversation with the founder and CEO of the company.
- Mud Jeans: This company is considered as 'company 3' where the required data was gathered through the sustainability reports published in the year 2018 and 2019.
- Kuyichi: This fashion brand is referred to as 'company 4' and the interview was conducted through online conference tools with the CR manager of the company. Additionally, data was gathered through the sustainability report published in the year 2019.
- Miss Green: this company is referred to as 'company 5' and the interview was held through online conference tools with the founder of the brand.
- The research participants include two fashion experts from two organizations: Texperium and Anahita. The notation of 'expert 1' and 'expert 2' will be used in the future stages of this research.

The data and information required and its accessing method in this research were identified through a set of sub-research questions displayed in table below:

Research sub-questions	Data/information Required to answer the Question	Sources of Data	Accessing data	Method of Analysis
What are the main drivers/motivations influencing the Dutch apparel retailers/fashion brands to incorporate sustainability aspects in their operation strategies?	The company's products, locations, establishment, their motivations to start sustainable business and their visions on sustainability	Key informants – experts, retailers of clothing brands (primary source) Literature sources (Secondary sources)	Content Analysis Semi-structured interviews	Qualitative – Analysing the main drivers and motivations to incorporate sustainability.
How are the factors of sustainability combined into these companies' business models?	Indicators of environment, social and economic sustainability	Key informants – retailers of clothing/fashion brands (primary source) Literature sources (Secondary sources)	Content Analysis Semi-structured interviews	Qualitative – Analyse each company's sustainability efforts in a detailed manner.
How are the varying approaches to sustainability adopted by these retail companies combined with existing sustainable business model frameworks?	Business model, missions, visions, and sustainability efforts of each company	Key informants – retailers of fashion/apparel brands (Primary Source) Literature review (Secondary Research)	Semi-structured interviews	Qualitative – Analyse the business model dynamic's and dimensions
What are the potential barriers the retailers in the clothing industry face while combining all the three facets of sustainability in practice?	Underlying causes of the challenges to occur, benefits and pitfalls of the market for sustainable clothing, initiatives taken by the firms to maximise their sustainability performance (if any)	Key Informants -Retailers (primary sources)	Semi-structured interviews	Qualitative: Analyse the reasons that positively and negatively influence sustainability in the clothing sector

3.5.1 Validation of Data Analysis

In order to ensure that the study addresses the research questions, validation plays a crucial part. The most effective approach to assess the relevance of a study is to find the solution to the research problem using the data obtained. In this case, triangulation was used to gather data on the same issue from more than one process: Desk analysis and interviews. The gathered material was therefore not only cross-validated but multi-dimensional and was also associated with multiple aspects of the same phenomena.

3.6. Analytical Framework

The schematic representation is as shown below:

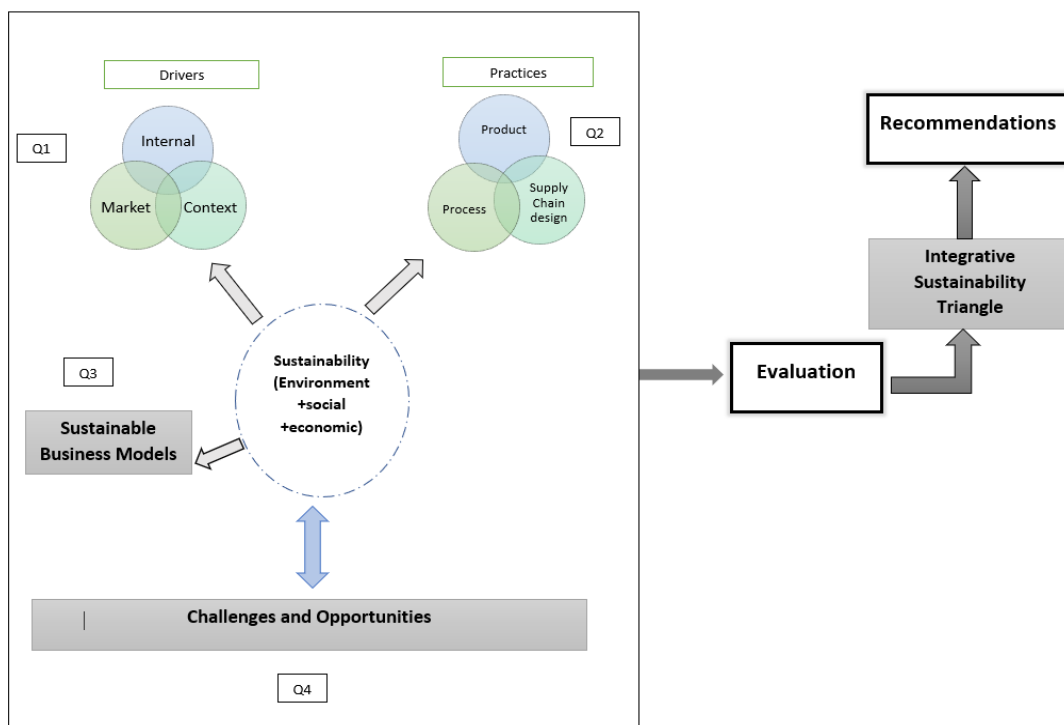


Figure 11: Analytical Framework (Source: Own Elaboration)

The conceptual structure outlined above served as the basis for the next stage of this study. This framework will also elaborate on the data analysis of each question. From the previous literature review, it is found that sustainability in the apparel industry includes various aspects. In order to structure the analytical framework, the 'Innovative design approach model' for the apparel industry was used as the basis. The sustainability efforts of entrepreneurs in the fashion industry whose companies qualify under the criteria of 'Emerging Davids' are the central focus of this research. (Kozłowski et al., 2016)

The drivers are related to the literature by (Caniato et al., 2011) who elaborated on the aspects which can be considered as motivators to influence the retailers to adopt sustainable business practices. The

drivers include external, internal and context related aspects. The model of innovative design approach for the apparel industry was used as a basis to define the practices in the framework. The practices refer to the product sustainability, process design and supply chain design. These above mentioned elements are covered in a company's business model which will therefore be analysed on these aspects and their possible ways in how environment, economic and social sustainability is combined in the business models of these companies. Since this research is inclined towards the retailers view on sustainability, the supply chain design will focus more on the supplier relationships and the transparency in the supply chain. However, by doing additional research on sustainable business models, the business model framework by (Bocken et al., 2013) came to light as it illustrated clear criteria on the environmental and social sustainability aspects along with technological innovation. With respect to challenges and opportunities the retailers face various challenges incorporating sustainability into their operations. The underlying causes of these challenges and the pitfalls of the market with respect to sustainable clothing will be analysed. The orientation of sustainability efforts of the retailing firms was analysed with the 'Integrative Sustainability Triangle' which provided a deeper understanding of the main research question. Furthermore, this research provided recommendations to practitioners to enhance sustainability aspects in their businesses. The drivers, practices, sustainable business models and challenges are internally connected as the 'Emerging David's' is a criteria which was used to categorize the firms considered for this study and the main motivations behind their choices is directly connected to the practices they incorporate in their organization. Furthermore, the practices integrated in the firm is a result of a business model that is devised with respect to the company's requirements and the extent to which the company is willing to undertake initiatives related to sustainability in their business to create a fruitful value proposition to the company.

ETHICAL CONSIDERATIONS

Clearly this research focuses on ethical issues, since the interviews could potentially provide reasonable facts and sensitive details about clothing companies' business models and the extent to which they are sustainable or not and how the companies are looking at ways to improve their visions on sustainability. Therefore, the following has been taken into account during this research:

- Consent: Prior to the research I have gained full consent from the interviewer's both orally as well as through a consent form whether they all agree to contribute willingly to be a part of this research and that the interview shall be recorded and transcribed.

- Confidentiality: The interviews' transcripts will not be shared with anyone other than the supervisor and the interviewer's privacy will be highly valued. To support the findings section quotes will be used rather than the whole context of the interview.
- Anonymity: All the interviewees were asked prior whether they themselves and the companies wish to be anonymous.

LIMITATIONS

This research is centred around the concept of sustainability which is quite broad. Furthermore, this study contemplated upon all aspects of sustainability. Although this research is largely inclined towards the concept of Emerging Davids, yet it involved different apparel firms with different products and sustainability initiatives that were undertaken. Therefore, in depth analysis of all the sustainability activities and all the different ways sustainability could be enhanced was not possible. Hence this study concentrated on the challenges and the required data about the sustainability activities of the retailers which provided the answers to the research question. Also, this study could not explore the ways in which sustainability is ensured by the companies in the 'use phase' of the clothing or in other words till the end of the clothing lifecycle.

CHAPTER 4

FINDINGS

This chapter discusses the results of the research derived from the information gathered from interviews from six key informants and the literature review that formed as a basis to devise the analytical framework. This section also contemplates on the information gathered from the recent sustainability reports of the apparel firms. Elaborative information and transcripts of the interview sessions can be found in Appendix 4. The interviewees were selected based on the criteria of Emerging Davids (see section 2.6) and their relevance to the aspects related to sustainable apparel production. The section 4.2 corresponds to the aspects of the 'Innovative design approach model' which was laid out by Kozlowski et al (2016), which is the basis for the concepts presented in this section and the analytical framework. The interviewees were questioned about various aspects with respect to sustainable fashion and general aspects regarding the fashion industry in the Netherlands. The data obtained through the interviews with the fashion brands and experts were evaluated qualitatively which is elaborated in the chapter below. The findings are divided into sub-sections focusing on the four sub-research questions.

4.1 Dutch Sustainable Apparel firms and their drivers to adopt sustainable practices

Firstly, this sub-chapter deals with a brief descriptive information about the sample of companies considered for this research and will further emphasize on the backgrounds and visions of sustainability of the apparel brands in the Netherlands. As the retailers belong to varied backgrounds, this section will explain about the motives behind sustainable choices of those ethical retailers.

Table 2: General information of the Sustainable apparel firms in the Netherlands

Brand	Established Year	Type of apparel	Country of production
Company 1	2018	Professional and fashionable clothing for men, women, and kids	Bangladesh
Company 2	2017	T-shirts for men and women	Portugal and Italy
Company 3	2014	Denim	Italy, Spain, Egypt, and Turkey
Company 4	2001	Denim	Peru
Company 5	2008	T-shirts, Dresses, Trousers	Turkey, Sri Lanka

¹All of the above-mentioned companies fit into the criteria of Emerging David as they are a recent venture into the market. The number of employees range from 10-15 with all their headquarters based in the Netherlands. However, company 4 and company 5 are not a recent venture into the market but since the business model of company 5 was changed a few years ago and company 4 adopted sustainable practices from 2011, therefore they qualify as Emerging Davids. The sample of company's used in this research have environment and social sustainability at the forefront of their business along with economic sustainability.

Backgrounds and visions of sustainability

In the table mentioned below the mission and vision of the brands as stated on their websites and sustainability report can be found along with the background of the sustainable entrepreneur who founded the company. This information is necessary for this study as the mission statement provides a certain direction with respect to the company's goals and visions for the coming years. The background of the entrepreneur is critical, as this study is inclined towards the theory of sustainable entrepreneurship and the background of the entrepreneur could provide some insights of their motivation and supporting mechanisms to start new businesses in the industry.

Table 3: Data about the mission of the company and background of the entrepreneur

Brand	Mission	Background of Entrepreneur
Company 1	Their goal is to provide high quality, customizable clothing to businesses and fashion designers while having a positive impact on the world.	Industrial Engineer
Company 2	Dressing people by undressing the industry by producing zero waste, using sustainable fabrics, price transparency, uncovering the source	Retail: Clothing
Company 3	The company's mission is to radically change the fashion industry by taking the world's most famous fashion piece: a pair of jeans and produce it in the most sustainable way possible without losing the timeless sense of style and elegance. They aim towards circular production and conscious consumption	Fashion Industry

¹ Company 1: <https://www.wovenbv.com/>

Company 2: <https://www.unrobe.com/>

Company 3: <https://mudjeans.eu/>

Company 4: <https://kuyichi.com/>

Company 5: <https://www.missgreen.nl/>

Company 4	Making sustainable denim and timeless wardrobe essentials, fairly made to last with the best quality possible.	NGO
Company 5	To produce apparel with love and respect for the environment and people around us by ensuring workers receive decent wages and operating with only GOTS and SA800 norms. Maximum usage of organic fabrics with no usage of harmful chemical usage.	Political Science

The mission statements of the brands do not actually reflect as to what the firms are achieving in terms of sustainability, however it provides us with a glimpse of their future endeavors. Two out of the five firms interviewed have a background in clothing/fashion industry. As emphasized in the above table, those who have a background in the apparel industry have a relatively same mindset about sustainability. *“You see everyone in the sustainable clothing industry think alike as they all strive towards the same goal: to reduce the negative impacts of production and the people who come from the retail industry always try to go one step further than the others”* (Founder of company 2, personal communication, May 25, 2020) This view was also supported by company 3 as they stated that *“Using Business as a force for good”*, (CR manager of company 3, personal communication, June 8, 2020). This statement made it evident that the entrepreneurs in this study are striving to bring a positive impact on the planet and people which motivates them to adopt green practices. The main drivers and motivations are elaborated in the next sub-section.

4.1.1 Motivation of Dutch retailers in the apparel industry to Adopt sustainability

The preliminary literature in section 2.4.1 emphasizes on how the drivers can be categorized with respect to context, internal, and market (Federico Caniato et al., 2011). Drivers also called motivators are a key part of the business as they are the impelling cause for introducing sustainability in supply chains. With increased awareness about the planet and the necessity to build a new market niche is compelling companies to change their traditional ‘business as usual’ scenario to encompass sustainability in their operation strategies. Below are some of the main findings with respect to drivers involved in apparel production from a retailer’s point of view.

Internal motivations

According to the co-founder of company 1 , minimizing the damage caused to the environment and helping people in the developing countries to acquire jobs was the main motive behind adopting sustainable practices. However, personal interest to affect change can also be considered as one among the key drivers. This view is supported by the founder of company 2, who decided to start a

sustainable apparel firm after the production agency decided to switch to unsustainable practices due to lack in financial investments and he believes that sustainability should not be compromised based on economic downfall. The founder of company 5, also started her own fashion brand when she realized that the planet is not sustainable, and she felt the urge to make a difference. Coincidentally the online business was gaining pace in the Netherlands especially in children's clothing and she decided to start the fashion brand. On a very personal note, she says she felt responsible for her children to live in a healthy and clean planet. However, she disagrees that a new market niche played a role in incorporating sustainability in the operation, instead the company prioritized at the online business model and its emerging opportunities.

According to the CR manager from company 4, the founders were exploring the cotton industry in Peru and they were shocked to witness the immense amount of pollution and poverty of the workers and they decided to start their own sustainable apparel brand. However, the interviewee from Company 4 believes, true sustainability goes beyond a cleaner production process and a clear mindset. The market for sustainable clothing did not match up to the demand for fast fashion and this led to birth of the company in order to create a demanding market for fair and ethical fashion. From the point of View of company 3, they believe if their consumers love their pair of jeans, as much as the planet, they are in good place. According to the CEO (company 3), his experience of 30 years in the fashion industry made him realize the detrimental effects of the unfair and unhygienic working conditions (website: company 3, n.d). The demand for labor was extremely high that compelled the workers to work overtime with unfair wages (Sustainability report of company 3, 2018: p 55). The entrepreneurs in this study have a negative image of the fashion industry resulting from their own experience or through the media. With their brands they aim to create green clothing and improve the market for sustainable clothing. It can be said that they are, indeed, striving hard to radically change the fashion industry. Although, internal motivations consist of various factors such as organizational related aspects, improving brand image by engaging in CSR activities and other green initiatives (Alzawawi, n.d). It can be observed that the level of personal commitment which is also stated in the literature acts as a crucial aspect in this case as the establishment of firms rely on the personal motivations of each individual.

Cost related factors also contribute to internal motivations as firms tend to adopt eco-friendly practices to reduce the costs. According to Caniato et al (2011), corporate values and pressure from the top management to adhere to sustainability norms act as the major internal driver. However, the interviewee's in this study do not agree with this statement as they perceive creating less damage to the environment goes beyond pursuing cost-related opportunities which was evident through the interviews that the economic position of these companies are not fruitful, yet they thrive on achieving

a significant effect on the planet and society. Although it can be argued that they are not 100% sustainable, but they believe collected effort towards the right direction will eventually create a sustainable fashion industry.

Market Drivers

Company 4 believes, increasing consumer awareness about transparency and sustainability in the production process and the damage that is caused to the environment had sparked an interest from the founders to adopt green practices which lead to collaborations with the farmers to produce in a fair and sustainable manner (Sustainability report of company 4, 2019: p 2) . According to the co-founder (company 1), apart from the government playing a controlling role, the common people constitute the demand side of the supply chain as they are more aware about the importance of sustainability and they demand the retailers to take action and incorporate sustainability in their business. According to Harris et al., (2016), the common people use clothing to express their desire of recognition and to fulfill basic needs. Although, the consumers act as the driving force to push companies to adopt green practices, there is a large group of consumers who are still unaware. For instance, among the American consumer groups, the desire to purchase eco-friendly garments are largely affected by social pressures and consideration towards the planet and partially driven by awareness of sustainable apparel. Although purchases are dependent on environment friendly products the disposal methods are mostly influenced by routines and habits. Nevertheless, the firms in this study are trying to change consumer buying and disposing patterns but it appears that the consumers are only partially motivating the retailers because the consumers are failing on their part with improper garment care specifically in the use phase.

But the production of apparel is a long process, there always exists a chain where someone is producing the product, someone is using the product and in the center of the chain someone is providing the services and regulating the chain. However, the co-founder (company 1) believes that if end users(customers) oppose the usage of unsustainable/inorganic clothing, the selling company will be compelled to offer more sustainable products with fair and ethical trade. If they fail to do so, the customers will eventually look for a new service provider and this will hamper the economic growth of the firm. The government in this case acts as a negotiator by enforcing regulations that will tie up the businesses and customer requirements.

Context related drivers

Besides internal pressure, there exists external pressure leading to the integration of sustainability in the operation strategies of retailers. These external drivers are called context related which have a

significant effect on the organization's internal operations and activities, forcing them to adopt new management tactics. The government, customer awareness, international standards define these external factors. The co-founder (company 1) supports this view and in his opinion, the government can be considered as the most powerful body to enhance sustainability by enforcing regulations with respect to fair and ethical practices. As they are at the top of the pyramid, they have the ability to pose a ban on the unsustainable fabrics such as polyester and by doing so, can reduce the damage caused to the environment.

The Government is also taking initiatives and introducing programs that bring businesses together, enhancing their knowledge on fabric recycling, eco-friendly dyeing process, and waste management. According to the World Economic Forum, the government can act as tool to start a green revolution (Thorning-Schmidt, 2014). Although there are certain regulations laid out by the Dutch government on textiles for the firms to follow but in this study the government does not act as a key driver but rather a mandatory aspect to be followed. That said, the government recently passed an order to make 'due diligence' a compulsory aspect in every organization including textiles which proves that the organizations are bound to follow the rules imposed by the government.

However, the CR manager from Company 4 opposes this view and argues that there is not enough regulations with respect to sustainability and innovation and the funds released by the government are dependent on the scale of the organization making it harder for smaller firms to access and enjoy the benefits of these funds. But according to the European commission, it is actively working on various initiatives to enhance the sustainability aspects of the fashion industry and help the small and medium fashion firms to gain access to funds that will facilitate in innovation and creativity. With respect to finances a programme called 'COSME' was initiated which aims at providing funds that target companies in various stages of life cycle of products. A competitive research innovation funding has also been initiated from the year 2020 which aims to upscale innovation in the small fashion firms (European Commission, 2020). Although, the view of the CR manager from company 4 cannot be ignored but it can also be linked to the personal interest of the company in gaining those funds and the level to which the organizations satisfy the criteria laid down by the government.

4.2 Aspects of Sustainability within the Dutch Apparel retailers

Achieving sustainability can be considered as a major issue in this modern world. It has also become a key issue for many apparel and fashion firms all over the globe. Increasing awareness with respect to social and environmental issues that prevail in the clothing industry has led to development and implementation of sustainability programs. Fashion brands have become increasingly concerned about their effect on the environment and social responsibility in their supply chain (Islam & Khan,

2014). This section will reflect upon the sustainability efforts (social, environmental, and economic) of the retailers in the clothing industry.

4.2.1 Environmental Sustainability in Dutch Apparel Firms

As previously explained in the sub-section 2.2.1, the apparel industry has many negative effects with respect to environment sustainability. This section will elaborate on the sustainability initiatives adopted by the apparel firms with respect to the environment. Although environment sustainability includes various parameters that include waste, water consumption, biodiversity, deforestation, pollution, materials, packaging, Logistics, transport, chemical discharge etc. the most predominant and relevant parameters with respect to the apparel industry that was addressed during the interviews are explained below:

Fabrics

Sustainability of a product can be accomplished through various aspects such as fiber, manufacturing processes, packaging, green logistics etc. However, fiber selection is always the first step in the production of clothing where designers and product developers roughly estimate the effect of a garment on the environment. According to the founder of Company 2, they are currently using organic cotton of the highest certification (GOTS) which does not allow the usage of chemicals or pesticides during cultivation. It therefore contributes to the environment and farmers by saving 90% of water, which otherwise consumes large quantities of water. He also claims that for their new capsule they are in the process of development of yarns made of ocean plastic and fishing nets. The collection line of company 5 is crafted exclusively from environment conscious materials. They take 'Sustainable Yarn Benchmark' study as their starting point for the choice of materials. 76% of their collection is made from organic cotton, 15% is made from Tencel and the rest by either micro modal or bamboo.

According to the sustainability report of Company 4, a preferred material matrix has been laid out which classifies the materials as A, B, C and D based on their negative impacts on the environment. The products ideally contain only preferred materials from A and B. A consists of materials such as recycled cotton, post-consumer recycled denim and recycled polyester whereas material B consists of organic cotton, Tencel, linen and T400 Eco made. The materials in C and D are not preferred materials but accepted after the approval from Kuyichi. However, materials belonging to D such as Polyester/Polybutylene Terephthalate (PBT) are strongly limited in their company products. The producers of company 4 products vow to use organic cotton in their products and continue to do so. Even with denim being the focal point in the company, they are also using vegetable tanned leather that is PETA approved for manufacturing of belts. They claim that they are proud to work along with

two suppliers who are aware about leather goods and respect the animal product to the fullest (Sustainability report of company 4, 2019: p 11).

According to the sustainability report of Company 3, they have a holistic approach in caring about the planet, people and the animals. Their denim is made up of recycled and organic cotton and printed labels are used instead of leather patches (Sustainability report of company 3, 2018, p: 11). They work only with 5 fabrics, one button, one rivet. There are two fabrics compositions available, the rigid one is made with 40% recycled consumer cotton and 60% GOTS certified cotton and their stretch is made up of 23% post-consumer recycled cotton, 2% elastane and 75% GOTS certified cotton (Sustainability report of company 3:p 39). However, in the co-founder's point of view from company 4, their products are not all eco-friendly and he argues that business services depend on the buyer's demands and if the buyer demands the clothing to be made from polyester they are bound to do so in order to keep up with the sales. This is because the company specializes in custom-made professional clothing where they give the option to the clients to choose fabrics from their warehouse or the clients can provide them with the fabrics and materials which they would have purchased elsewhere. Therefore, if the client wishes to use polyester due to its low-cost and durability, the company is bound to do so as they also offer stitching and manufacturing services for materials that do not come from their warehouses. Nevertheless, they are trying to negotiate with the buyers and convince them to choose better alternatives to polyester which minimizes the damage caused to the environment. That said, the next industrial revolution however, will not be about restoring to some idealistic state wherein all garments will be produced using natural fibers. It would not be practical to use just organic fabrics as one of the several safe strategies of meeting customer's needs. This will lead to higher demand of natural resources and will eventually lead to depletion. For this very reason, the sustainable designers must find ways to upcycle the existing resources rather than using new materials for the collection line each year (Obregon, 2012).

Furthermore, the fabric phase can be considered as one among the most water intensive processes. Therefore, it becomes crucial for the apparel firms to monitor their water consumption and the firm's efforts towards water savings is elaborated in the next sub-section.

Water Consumption

The consumption of water and the process leading to the finished fabrics are interrelated as water is used for crop cultivation, washing process, dyeing, and finishing processes. According to the founder of company 1, the consumption of water is a complicated issue and specifically it causes extensive damage to the planet considering the manufacturing process of clothing. However, Company 1 is actively developing a program related to circular textiles that aims to use eco-friendly materials in the

garment production and in turn contribute to less water consumption and waste generation. However, the interviewee also makes it clear that there is no physical action taken towards the circular textile programs as of and the company looks forward to in the coming months.

In the point of view of the founder of company 2, the water footprint of their company is less, and they managed to save 7.371.000 liters of water until last year. According to the founder of Company 5, their fabric factories have different requirements that includes cultivation of the crop until the end-product. Roughly 200L of water is used to wash and dye the fabric and the wastewater is collected, filtered, and pumped back to be used in the production process following a closed loop system.

According to the data published in the sustainability report of company 3, in the year 2018 and 2019, their fabric mills: Tejidos Royo has two wastewater treatment units at their facility. Each plant is used to remove chemicals, solid and organic materials from the wastewater discharged from the production process and discharged to a nearby water body to minimize the environmental damage. The jeans which are returned from the customers are not washed, instead an innovative technique of laser and ozone is used (Sustainability report of company 3, 2019: p 28).

At one of the stitching and laundering factories: Yousstex International, 95% water that is used is recycled through a process called reverse osmosis and the remaining 5% is evaporated. However, the 5% is then refilled with rainwater and therefore no fresh water is being used in the production process. Also, Tejidos Royo, the fabric supplier of Mud Jeans has developed a revolutionary dyeing process in 2019 which is called as Dry Indigo which employs foam dyeing. It is a technique that allows Royo to dye yarns with indigo dye without using any water for the entire process (Sustainability report of company 3, 2019: p 28). From their last LCA in 2016 to their most recent one they are able to demonstrate their decreased water impact by 61%. Compared with industry standards, MUD jeans is using 92% less water per pair of Jeans. From 2016-2019 they saved 533 million liters of water which is equivalent to 213 Olympic-sized pools (Sustainability report of company 3, 2019: p 33).

According to the sustainability report of company 4, Indigo dyeing cannot dye to the core of the yarn, and Indigo as a color appears green in water only if exposed to oxygen, it oxidizes into the deep blue indigo color. To attain this deep blue color of the denim, it goes through various washing phases which creates stress on the water resources and has a high chemical impact. Therefore, they are using advanced dyeing techniques and innovative ideas from their suppliers such as Pre-reduced Indigo, analine-free dyeing and low sulfide salts techniques that result in lower water impact and cleaner wastewater. All their dyeing facilities have a wastewater treatment plant in order to ensure no hazardous components are released to the environment. The laundry processes are using various techniques such as ozone, laser and E-flow which facilitates possible water savings up to 67%

(Sustainability report of company 4, 2019: p 44). According to Environmental Impact Measuring (EIM) their score with respect to water impact stated that 50% of washes use less than 10 liters and on an average in the year 2019 their wash phase use 16 liters per jeans (Sustainability report of company 4, 2019: p 60).

To sum up, it is a well-known fact that when it is concerned with water consumption every fashion brand has numerous risks to address which is also evident in this section. However, an equitable and realistic strategy is crucial in achieving the water goals of the fashion industry. Some environmentalist and scholars argue that large-scale textile manufacturing must shift to countries with sufficient space and sources of energy and higher capacity for water recycling (Gould, 2014). But according to the data gathered in this study, it seems that the brands look for a more holistic approach as most production takes place in developing countries where the textile industry empowers employment and economic development. The brands in this study which are established with a centered focus on moral values as elaborated in the previous section and the firms will therefore look at the big picture where a positive impact is made on the society rather than trying to curb the fruitful outcomes which is emerging in these countries due to textile production.

Transport

As customers become tech savvy, there is immense pressure on the transportation sector due to the high number of online orders via e-commerce. According to the founder of company 2, their orders are mainly based in Amsterdam which provides them the opportunity to drop them off at the doorstep either through electric van/bike which considerably creates lower impact on the environment. However, he also puts forward a point saying, the truck used for transportation of clothing from Portugal to Holland is not in his control as he is not aware as to what transportation is used from the factory and intends to use E-trucks in the future. According to the co-founder of company 1, e-commerce are products that are brought mostly via air which has more environmental impact and to reduce that they are shipping products from their manufacturing locations via sea to reduce the footprint.

According to the sustainability report of Company 4, they believe that transportation is only part of the problem when it comes to greenhouse gas emissions, but it is also a key part of the industry that can have a direct effect on the environment. Therefore, they brought down their transport kilometers by local sourcing. The spinning and weaving mills of fabrics are almost in the same country as the production facilities, limiting the transportation distance between the same links in the supply chain. Also, they have centralized most of the trim suppliers who are based in Turkey as most of their production takes place there (Sustainability report of company 4, 2019: p 87). Company 5, however,

uses a third-party delivery service and they feel the transportation can be greener and more sustainable. They are pressurizing the delivering company to use more green options for transportation and look forward to implementing in the coming years.

Chemical Impact

Various types of chemicals are used in the entire life span of garment production from a cotton pulp to a fashion item. It has been estimated that 8000 chemicals are used in textile, fashion, and shoe industry to turn raw materials into end products. According to the co-founder of company 1, there are certain limitations regarding the amount of chemicals that can be used in the manufacturing of a product and this is being checked by the certification company. If a company has the right certifications, then they are aware about the right chemical usages during manufacturing. On the other hand, the companies without the possession of the certification use chemicals based on the demands from the buyer. According to the founder of company 2s, the chemical usage is regulated under the GOTS certification and there is a minimal kind of chemical that are used which is environmentally safe. The dye houses are circular and the wastewater that is produced by dyeing is filtered out and then pumped back into the Portuguese water system and the factory. According to data published on the company website, they managed to save 580 kilograms of chemicals until 2019.

According to Company 4, they work together with their suppliers to set up a document that consists of a set of chemical restrictions. Certifications with chemical restrictions such as GOTS, GRS, and OEKO-TEX are used in product manufacturing. The restricted chemicals are divided into categories: RSL (Restricted Substances List) and MRSL (Manufactured Restricted Substances List). The former consists of the list of substances that can stay behind on the garment and the list is based on the standards of REACH and OEKO-TEX 100. The latter refers to the list of limits for contents in chemicals that can be used in the production process and the related standard used is ZDHC (Zero Discharge of Hazardous Chemicals). This way they believe the chemical combination in the fabric manufacturing can be tackled at the core (Sustainability report of company 4, 2019: p 82).

According to company 3, they are against the usage of harmful chemicals and acquired the Nordic Swan Ecolabel certificate for their products. This certification provides a confirmation that only non-harmful and biodegradable chemicals are being used in the production process (Sustainability report of company 3, 2018: p 46). Company 5 is also a GOTS member and they do not use heavy chemicals in production. However, the customers complain about fading of black jerseys/ T-shirts after a few months. According to the founder, it is the issue with black and white paints as extensive usage of those paints are restricted by GOTS due to its polluting nature and this is one downside of sustainable clothing where bright colored clothing will last for only a few months.

The brands are restricting their usage of chemicals as customers are more aware of the chemicals and its disposal methods but it appears that the firms are investing a step more in fabrics when compared to changing the chemistry related to chemicals. According to a recent article, the fashion brands are well aware of the toxic effects of chemicals, but the brands continue to use them due to lack in alternatives. A noteworthy point was mentioned that a chemical named 'Teflon EcoElite' has surfaced as an alternative due to its high ability to repel water but there are none that work on oils and stains. Although, the use of fluorinated chemicals did not come up during the interviews, according to the article, it is the most widely used chemical in the fashion industry (Cernansky R. , 2019). However, with all the current market and consumer concern over hazardous products, only a small expenditure has been made with respect to chemicals. Most innovation is on the fabric side, product designs but not generally to incorporate healthier chemicals.

Packaging

Packaging of a product plays a vital role, as it can contribute to excessive waste generation if biodegradable/recyclable packing is not used. According to company 4, the packaging that are used for the webshop orders is made up of 60% recycled-film-plastic produced by Raja Pack. There is a card with information attached to the product about the eco-friendly wash and care to encourage the customer to take care of the clothes in an environment friendly manner. There are no polybags used for the samples, instead a fabric string which is the cutting waste that is generated from the extra trimmings from the fabrics during stitching is tied around the product to give it an appearance as a present. At the warehouse, the packaging used by the suppliers are recyclable and they are reused (Sustainability report of company 4, 2019: p 87). According to the sustainability report of company 3, from the past three years they have partnered with Repack to ship their jeans in durable and reusable packaging. To ensure maximum efficiency in the use of the materials, the logistic partner uses a special machine that produces boxes to the specific size of the jeans that is being sent. All the webshop orders are packed in these envelopes which the customers can use while sending back the jeans for recycling purposes. Packages from Repack has carbon footprints which is 80% smaller than one-time use or throwaway packaging. They are investigating new methods in search of new solutions with lesser footprint and easier reusability. (Sustainability report of company 3, 2018: p 23).

However, according to the data published on the website of company 5, they use recycled and resalable boxes wrapped with paper tape that is certified by the Forest Stewardship Council (FSC) to distribute products to its customers. They Forest Stewardship Council (FSC) certified reusable and returnable boxes with paper tape to deliver clothes to its customers. The packaging material is also PVC free. In order to actually make substantial strides towards sustainable packaging, improvements

to the wider packaging and recycling framework would be important where production and implantation costs are higher and specific stakeholders may consider it challenging to accomplish (Berg et al, 2020). According to a recent survey conducted in 2018, using sustainable packaging can also be a key tool in attracting young customers as they are more aware and concerned when compared to the higher age groups and this can in turn provide the brand with long-term loyalty (Erez, 2019).

Waste Management

Managing the generated waste is crucial for the health of human beings as well as the surroundings. According to the co-founder of company 1, their project related to circular textiles will provide a solution to maximise the efficiency of how wastes should be handled. However, no physical action has been taken yet as the process is in the developing phase. According to the CR manager from company 4, the lesser information about what constitutes a waste stream, more challenges are encountered during recycling. The wastes are classified into three waste streams namely: Pre-production Waste, Pre-consumer waste and Post-consumer waste (Sustainability report of company 4, 2019, p: 25). However, denim belongs to post-consumer waste which refers to clothes that are discarded after being worn by the consumer and in this type of waste stream there is lack of information as to what constitutes the stream. All their products are produced using post-consumer recycled denim which reduces the waste that ends up in a landfill and fewer chemicals and cotton are needed for cotton production and dyeing. In the founder's opinion from company 5, during the design phase the necessary measures are taken by designing smartly and innovatively, the fabric is used optimally without any compromises in the design.

According to the founder (company 2), recyclable fabrics are used that minimises the probability of clothes ending up in a landfill. A 5-year guarantee is given to the product and if there are any broken/damaged product a free repair service is offered to extend the lifecycle of the garment. All the garments are sold based on collections where they sell goods of pre-order for few days, where customers can purchase those goods. Goods are only produced the exact quantity that is being sold which is estimated by the pre-orders and not a single piece more. The fabrics that are being cut off in the factory during the product design are all organised, collected and later used in the warehouse in Spain. The cut-off fabrics are used to make accessories such as scrunchies and headbands in order to use the left-over fabrics effectively.

Company 3 also supports this view where they ensure that their products do not end up in a landfill by designing the product consciously. This reduces the over-production of garments in turn contributing to decreased waste generation (Sustainability report of company 3, 2019: p 31).

Furthermore, the consumers of company 3 can participate in Circular economy by sending their old jeans for recycling irrespective of the brand. They also offer leasing services for a year and additionally a repair service for free. Their products are not based on seasons instead they produce them based on demand. The fabric waste from jeans in Yousstex International where the stitching and laundry take place are recycled and reused (Sustainability report of company 3, 2018: p 25). The companies are limiting the amount of waste generated by using a circular approach and offering various schemes to avoid the habituated activities of consumers with respect to discarding the garments. The firms seem to be one step ahead in tackling the waste in initial and final stages of production but not after the use phase of the garments. Only two out of

However, designing consciously and using the leftovers to devise scale up solutions will not suffice as extensive recycling methodologies along with strategies for reusing should be employed with strict adherence to legislative regulatory contexts.

Energy

In the co-founder's opinion from Company 1, they are discussing the opportunities with the manufacturer as to how less energy can be used to dye the fabrics and they look forward towards a new innovation, where water and energy are not required for the dyeing process. The energy efficiency constitutes the highest spot of the agenda of company 3. Throughout the supply chain they aim to prioritise energy-efficient manufacturing methods and use of renewable resources. Tejidos Royo is equipped with a co-generation station where the steam that is generated from the factory boilers are used to generate electricity (Sustainability report of company 3, 2018: p 44). According to the CEO (company 2), one of their factories in Portugal runs on led lighting along with solar panels and they aspire to transform all the factories into energy efficient facilities. The suppliers with which Kuyichi works are very conscious about their energy consumption. 52% of their suppliers use renewable energy such as wind and solar energy. They intend to use 10% less energy per garment/m² of fabric (Sustainability report of company 4, 2019: p 86).

4.2 Social Sustainability within the Dutch Apparel Firms

Consumers in today's fashion industry are demanding rapid improvement with regular release of new collections. Such factors contribute to increased stress on the manufacturers of apparel to raise prices and reduced lead times. The literature has defined the essence of the customer-driven apparel industry and it is observed that it is characterised by downward price pressures, negative cost-related purchasing practices, speed and flexibility and the complexities of the supply chains. Such attributes contribute to social issues in the supply chain. This section will elaborate on the social sustainability efforts of the Dutch apparel retailers (Koksal, 2019).

Certified Factories

The main production hub of company 2 is Europe, namely Portugal where the ethical standards are higher when compared to Asia. The production factories have two well-recognised certificates: GOTS and smeta certified which are the highest certifications possible. The factories of company 1 are following ACCORD (from Bangladesh), AGT, Alliance and BCI. These certificates are owned for ensuring worker's safety, fire safety and efficient waste management. Company 3 has acquired various certifications such as GOTS, OEKO-TEX, C2C certified, PETA approved Vegan etc., they consciously source goods in nearby factories. They want their employees in the factories to have safe and healthy working environment and they aim to achieve this through conscious decisions in production and product development. Company 4 is a member brand of AGT (Dutch Agreement on Sustainable Garments and Textiles) which consists of nine themes that brands must work upon to improve their current practices. Six of them are focused on social impact for the workers and their work environment. Their factories are PETA approved along with GOTS, OCS, GRS and OEKO-TEX and ISO 14001. Company 5 is committed to GOTS and all their products are PETA vegan approved.

With companies trying to acquire the required certifications in order to showcase the customers their company standards and to improve the brand image, there is a conflict of interest that exists with respect to the ideology of certifications. Although, the companies claim that they are unable to maintain a significant economic growth and naturally they would be interested in holding the prices of the supply chain low which would not push voluntary initiatives to follow more rigorous requirements which will entail substantial effort to be enforced. Yet, every sustainable brand is involved in acquiring certifications as not doing so, would lead to damage to the brand reputation. Although, in reality the certifications do not guarantee if the workers are paid the living wage and respects their 'freedom of association' and 'collective bargaining rights' (Cernansky, 2020). But it provides for an assurance for the companies to approach these certification bodies if there are any complications that is encountered during the business.

Transparency

Transparency can be considered as the one among the key issues in the supply chain. The customers of company 2 receive production updates about how their products are being manufactured in the factories. They believe that customers should know at what price the retailer purchased it from the manufacturer that includes cost of fabric, trimmings and making expenditure. They are also transparent about their margins and communicate them to their customers. They value transparency at its highest level; therefore, their products are attached with a hangtag that consists of QR-code which gives relevant information about the product (Source: Website, Company 2).

Company 4 believes that the first step towards better practices in the garment industry is transparency since it comes with accountability. They signed a Transparency Pledge last November to bi-annually publish the updated supplier list on the website along with supplier details to ensure that NGO's can contact them easily if they find any abuses in the factory (Sustainability report of company 4, 2019: p 70). According to the sustainability report of company 3, they work with factory owners who have the same mindset, transparency, fair wages, and good working conditions (Sustainability report of company 3, 2018, p: 27). However, it must be noted that the social factors such as wages of the workers are not revealed to the customers which is also applicable to the firms in this study, making it a strong point to put forth when aspects of transparency are in picture.

Equality and Fair wages

According to founder of company 5, the wages of the employees were monitored with safe working conditions such as transport was provided if there was a necessity for the employees to work overtime. However, being a member of GOTS along with strict Dutch regulations ensured good working conditions and no child labour. Company 1 however does not deal with the workers directly but monitors the monthly wages of the employees in the manufacturing factory. Company 2 monitors the wages of the workers through the GOTS certification which also protects the workers in terms of working hours, safety, and Equality. Although no specific monitoring methods were revealed in the interviews, the companies rely on the certifications and their gut feeling which has its own set of advantages and drawbacks. Company 4 is however, a part of the Fair wear Foundation which is an international and independent organization that fights for better labour conditions. Company 3 ensures to provide equal and fair pay to enhance the livelihood of everyone working across the supply chain. They care for inclusiveness, harmony, democracy irrespective of gender, race and age (Sustainability report of company 3, 2018, p: 59).

Supplier Relationships

All the interviewed firms work with certified suppliers who have sustainability as a priority and the required certifications to ensure green practices during the production and sourcing. According to the co-founder of Company 1, working with certified suppliers depends on the factory as some factories are really efficient with product design and its sustainability while others are in the process of getting the certificates to incorporate sustainability in their supply chain. According to the interviewee from company 2, it is important to have partnerships and collaborations with suppliers a sustainability in fashion is not easy as prices are higher and not all product design can be achieved due to sustainability issues. Therefore, the process to produce garments becomes difficult and it is crucial to ask suppliers to produce sustainable clothing. It is important to work along with like-minded people who have

sustainability at the forefront of their business. In the founder's opinion from company 5, it is important to maintain a business in the fashion industry because the production is so complex and therefore it requires good cooperation with the manufacturers and suppliers because as a brand they are dependent on them. Company 4 sees their suppliers as partners who innovate and improve together. They started the partnership with suppliers in order to build a long-term relationship on trust and respect for one another. They have put together a responsible business conduct that covers elements related to social sustainability and the suppliers should strictly adhere to the business Conduct (Sustainability report of company 4, 2019: p 72). Company 2 and 3 also have a fair-trade agreement along with a code of conduct with the suppliers.

Product Locations

Company 2 produces predominantly only in Europe. The factories are certified with GOTS that protects the workers in terms of working hours and safety. According to the founder of company 2, choosing product locations close to home reduces the carbon footprint as well as it is easier to monitor the production process. According to the interviewee from company 5, owning product locations combined with frequent visits are crucial in the fashion industry. It would provide a broader outlook on how and what conditions the clothing is produced along with scope for improvement.

4.2.3 Economic Sustainability within the Dutch Apparel Firms

Economic sustainability relates to the actions made in the most stable and healthy way possible, thus taking into account other elements of sustainability. In certain instances, these choices are taken in consideration of long-term gains rather than short term advantages. Businesses rely solely on economic development, and this conventional approach to a wide-scale business management can inevitably contribute to unsatisfying outcomes. However, if efficient corporate governance strategies are paired with environmental and social management elements, successful outcomes that are beneficial for the earth and its inhabitants can be achieved. This section will shed light on the aspects related to economic sustainability in the apparel industry.

In the interviewee's opinion from company 1, the maximum cost lies in the fabric and its processing. The use of natural fibres would result in greater recycling efficiency and minimise the cost in the supply chain. The founder of company 2 supports this view, as most of the costs are related to the products. The fabric production takes place in a premium factory in Europe, leading to higher buying prices of the garment because the company wants to invest in the fabric as it plays a crucial role in apparel sustainability and for the people. When products are sourced from Asia, they are much cheaper than the products sourced from Europe and this adds to increased costs in the operation while simultaneously maintaining green practices in the supply chain. Unrobe sells directly to customer

which provides them the opportunity to invest in the product and sell it at 50% lower price than the traditional model without the profit margins getting affected. This model allows the brand to manufacture high quality sustainable products for affordable prices.

According to the founder (company 5), the certifications are expensive for a small brand like theirs which adds up to the overall cost. Since their quantities are much smaller when compared to big brands it costs them more money in the factories to set up everyone in line and the workers need to be instructed as to what has to be done on the sewing side. As a small brand the margins are quite low which results in higher buying costs as the product was manufactured sustainably. This statement can be contrasting to the usual mindset that lower margins should result in lower prices. However, in practice it is the other way round because when workers start stitching the garment the first 100 pieces are not up to the desired quality. However, as they go on further up to 80-90 pieces the workers are well-versed with the fabric cuts and designs. Therefore, these smaller companies usually have order portfolios of around 2000 while in the case of Zara and H&M the order portfolios are approximately around 15000 and the article tends to get cheaper as workers are familiar with the product and ordering larger portfolio's also provides for discount. Therefore, for every 15000 pieces, if 100 pieces are wasted, the impact on the price is very low. But, with 2000 pieces to be manufactured if the first 100 pieces will be scraped and wasted it will cause a noticeable impact on the price. Therefore, the company imposes these wastage charges on the final price as they want to retrieve their money because the market for sustainable apparel is low when compared to fast fashion. It is therefore difficult to have a business model that works with lower profit margins.

According to the CR manager (company 4), every material which is chosen consciously is more expensive when compared to conventional textiles such as Lenzing, organic cotton and recycled denim. The price keeps adding up with every conscious choice that is made with respect to fabrics, washes, dyeing methods, and other raw materials. Innovation also costs money over the years as there are always new and upgraded methods for washing, dyeing, and recycling of fabrics etc., and these costs end up reflecting on the prices of the products. If social standards must be maintained with good working conditions and wages, the firms must invest money and get a good payback in order to uphold the social sustainability standards. The profit margins for company 4 is lower when compared to other firms as they deal with smaller quantities and the cost of production for sustainable apparel is high. The certificates add up to these economic costs because for every certified product that is manufactured, part of the profit margins is paid to the certification company and to the certified suppliers who have to also cover the certification costs.

4.3 Sustainable business models and different approaches to sustainability

All of the retailing firms considered for this research are not fully oriented towards economic benefits. However, they mostly perceive economic factors are important to keep the company alive which drives the manufacturing of products. These products are mostly sold online through their web shops and in some cases, they are sold in stores. The part of their profits is responsible for their firm's revenue each year. Since most of the firms were determined to reduce their ecological footprint and make a positive impact, most of the archetypes in the sustainable business models can be found in their own business models as well. The table below will map the sustainability initiatives of the Apparel firms in terms of the sustainable business model.

Table 4: Illustration of Technological Archetypes

TECHNOLOGICAL

BRAND	Orientation	Maximise material and Energy efficiency	Create value from waste	Substitute with renewables and natural processes
Company 1	Soc+Eco ²			Raw materials such as yarns, viscose, and linen.
Company 2	Env+Soc	Capsule collection for limited orders only produces what is sold. Solar panels in factories	Recyclable/biodegradable fabrics	Eco-friendly materials: Organic and recyclable cotton, Polyester (PET) and ocean plastic.
Company 3	Env+Soc	Steam of factory boilers used to generate electricity. 3 collections per year.	Circular business model and recyclable fabrics: organic cotton	GOTS certified Cotton and post-consumer recycled cotton
Company 4	Env+Soc	Using leftovers for a new style next season	Switching Gear Project: Adoption of a circular business model. Denim recycling	Organic Cotton, Tencel, Micro-modal and T400 Eco made
Company 5	Env+Eco	Fabric cutting is done with special equipment with in-built computer programs to reduce waste	scrunchies are made with leftover fabrics	Organic cotton, Bamboo, Tencel and Micro modal

² Eco corresponds to Economic; Env corresponds to Environment/Ecologic

The first column indicates each brand’s orientation which were gathered from their sustainability efforts which came through during the interviews and also from the missions and visions of each brand. However, all the brands are intending towards incorporating all three facets of sustainability, but they are predominantly directed towards one of the sustainability dimensions which is indicated in **bold** in the table above.

As it can be seen in the above table all of the brands have an orientation of environment and social sustainability except Company 1. From the data gathered from grey literature and interviews it seems that the efforts of Company 1 towards environment sustainability are not full-fledged yet. For the sustainable entrepreneurs interviewed for this research, sustainability is a broad concept. It is a principle that is related to the long- and short-term priorities of the organization. The short-term goals, though, are accomplished easily compared to the long-term objectives. The main reason for this is the fact that all the interviewees consider sustainability in terms of ethical factors. They are not fully focused on the economic side as they perceive sustainability in their business is the result of conscious choices. This leads to a mixture of different practices and initiatives with reducing the negative impact of their products at the forefront of their business. However, company 4 can be considered as a firm that made sustainability through business factors as the company was born when a market gap was found with respect to sustainable apparel as the market was quite low. Therefore, the main ideology behind the birth of the company was to increase the market for ethical and sustainable cotton. But their business sense was also coupled with sustainable practices which they incorporated over the years. Table 7 depicts the sustainable efforts in terms of Social and Organizational.

Table 5: Illustration of Social and Organizational archetypes

Brand	Social			Organizational	
	Deliver Functionality rather than ownership	Adopt a Stewardship role	Encourage sufficiency	Repurpose for society/environment	Develop scale-up solutions
Company 1		Pay 5-10% more to the manufacturer to increase worker wages	Focus on quality and customised products	Creating jobs for people in the developing countries	
Company 2	Free repair/fixes with 5-year warranty		Focus on quality and durability		Fashionable design with affordable prices

Company 3	Leasing a denim/jean	Proactive engagement with the customers, suppliers, retailers, and NGO	Educate people with the right garment care practices		Collaborations with like-minded organizations
Company 4		Upstream Stewardship: Supplier Development programmes	Encourage customers of Responsible buying practices and washing practices		Collaborations with NGO's
Company 5	Leasing a denim/jean	Proactive engagement with the customers, suppliers, retailers, and NGO	Focus on quality		

From the above table, it is clear to a certain extent that all companies often start with either one perspective of social or environmental sustainability. For instance, the firms in this study are willing to use more sustainable forms of transportation or packaging as they are aware of the extensive pollution leading to climate change and waste generation that is linked with these aspects. This can also be linked to a rational mindset of creating a positive impact on the planet and society. But, for the entrepreneurs in this study moral reasoning reaches beyond people and the planet as they mostly believe that true sustainability goes beyond a clean production process and a circular mindset. Therefore, with every year passing by they strive harder to improve their business model and adopt more greener practices in their operations. Nevertheless, it can be seen from the technological table that the firms are slightly more inclined towards environmental sustainability and the technical archetypes from the sustainable business model also correspond to the environment. Most of the companies were started with a 'green approach' towards businesses which partly justifies their efforts related to the environment. However, when two firms with opposite orientation such as Company 1 and company 5, it can be seen that Company 1's business model includes one technological aspect which is also related to economic sustainability justifying their orientation, while Miss Green includes all the aspects related to technical which rightly justifies their orientation towards the environment.

Contrasts in Backgrounds of Entrepreneurs

It is hypothesised that difference in backgrounds can lead to different sustainable business models. Generally personal motivations are largely created by what people have achieved or experienced in the past and the academic/work related aspects influence this factor. There is, however, almost no

connection between the interviewees background and the inclusion of sustainability in their businesses. For example, both company 2 and 5 strive towards sustainability which was started by two individuals with a completely different background. The former has a background in the retail apparel industry while the latter is a political science journalist but both the firm's efforts were driven towards the environment. Similarly, both firms focus on product quality that is evident in the archetype from technological which provides clarity on this aspect that two-like minded innovators will invest in sustainability regardless of the background.

4.4 Barriers to implement sustainability in operation strategies

Consumers are continually responding to the environmental concerns and insist that retailers meet with their rising expectations. Most of them normally believe that the idea of sustainability is a high cost option, and even the 'luxury' that 'normal people' cannot afford in some cases. Hence, the retailers play a significant role in promoting the accessibility of sustainable products. Retailers are willing to help the customers to make green choices by taking very different viewpoints on how they must direct their customers to make sustainable choices. Nevertheless, the retailers face various challenges to incorporate green practices and the prominent challenges faced by the Dutch retailers considered for this study will be elaborated in this section.

Costs: The price for sustainability

Retailers play a vital role in providing accessibility of the sustainable products to all customers. In order to do so, retailers take very different lines of how far their customers purchases should be directed towards more sustainable options (IPSOS, 2007). Many studies have revealed that integrating sustainability in the operations is expensive mainly for the small and medium enterprises. For instance, to purchase modern energy efficient machinery or use non-toxic dyes it costs money and they are not one-time expenses rather the SME's have to spend money over keep their performance recorded (Klapper & Beinker, 2017). The biggest challenges are faced on the business model side because there are always new and innovative business models emerging in the apparel industry and to become profitable there is a requirement of a steady business model. According to the interviewee (company 5), most of the firms lack financial investments and they face challenges as they have to pre-finance the production after the design phase is initiated. In most cases the order portfolios are large and 30% of the expenses must be paid to the manufacturers prior to the production which accounts roughly to a million Euros for each order portfolio. This is a crucial step as the costs paid by the retailers are used by the producers to buy the fabrics and other raw materials. The cost of ethical production practices with sustainable fabrics increases the investments at initial stages with no guarantee of payback. If

there is a gap in pre-financing the production, this will in turn create a delay in the production process and will eventually hamper the growth of the firms.

The problem of Choices

Environmental sustainability itself consist of various factors that are necessary to be investigated and practiced as a retailer. However, there are always contradicting factors with respect to maintaining sustainability in a business. For example, if a new water reducing dyeing technique is available in the market, the energy consumption will increase leading to an imbalance of resource efficiency within the company. The land and water usage for a pair of jeans is comparatively lower when compared to that of a cotton shirt, but the recycling of jeans is an extensive and time consuming process and contrast to that, the land and water usage for a cotton t-shirt is higher but recycling of a cotton t-shirt is easier to a certain extent as the fibres in a cotton t-shirt are easier to recycle. The choices between recycling methods are dependent on the fabric composition but the existing recycling processes such as mechanical and chemical recycling have their own set of contrasting disadvantages and advantages. Mechanical recycling cannot be used to recycle the entire fabric whereas chemical recycling can be used to recycle the full garment, but it is a chemically intensive and polluting process. Therefore, it depends upon the choices that must be made by the retailers to balance the collections and to reduce the negative impacts. However, the firms considered for this study believe that as knowledge and innovation start improving, there would be a solution for these kinds of issues. With respect to social factors, the companies can prioritise on one or two factors depending on their firm's capacity, but a company with 4000 employees can focus extensively on all the factors related to social sustainability and the small firms in this case lack manpower. The retailers emphasize on priorities that must be made with the risks involved in the supply chain and choose the most important and urgent risk that must be addressed within a certain period.

Transparency:

Although most of the companies interviewed consider transparency as a critical aspect of their business, but it is still a prevailing issue in the apparel industry. Consumers are highly cynical about the ethics of the businesses and they believe that most of the companies 'pretend' to be ethical in order to charge higher prices and maximise their margins (sector, n.d) . According to the co-founder (company 1), lack of supply chain control is leading to transparency issues in the industry. Since the supply chain is intertwined with various actors, it tends to become tedious to monitor at every step of the supply chain and to be able to set everyone in line also requires financial investments from the retailers. According to the founder of company 5, they cannot visit the factories on a weekly basis or investigate the production closely through cameras to make sure that their demands are being

fulfilled. In the view of expert 1 from organization 1, the supply chain in the garment industry is very opaque and transparency along with legitimacy can only be achieved throughout the supply chain, if all the actors involved have a sense of social responsibility. In view point of the founder and CEO of company 2 , there must exist mutual cooperation among every actor involved in supply chain, because if one actor fails to deliver their responsibility towards the environment and social aspects, the whole supply chain will still be considered opaque and unsustainable. Although there are many improvements with respect to sourcing strategies, labelling and compliance being made from past few years, but it is still difficult for the retailers to exactly know from where, how and what their products are made of. Nevertheless, it can be argued that supply chains were not built for being transparent. This is because companies and vendors also believe that revealing too many details will weaken or subject them to scrutiny of competitive advantage. Another explanation can be stated that the critical details of the upstream supply chain may not be collected and if it does exist it may be inaccurate. Ultimately the ROI for transparency projects does not necessarily fulfil the expectations in short term. But, despite these issues, there are ways of evaluating the importance of transparency and get insights of how the company is performing which still makes transparency an existing challenge that the retailers face today (Bateman & Bonanni, 2019).

Sustainability and Efficiency: A delicate balance

Demanding more exacting terms from the suppliers/manufacturers regardless of their origin is viewed as a big challenge for retailers with respect to performance in the supply chain. According to expert 2 such efficiencies is what made the retail businesses in the garment industry successful and therefore, addressing this issue can be complicated if the retailers want to attain economic growth and be sustainable at the same time. Most of the retailers do not want their supply chains relatively efficient to the extent that their suppliers are out of business. Therefore, the firms struggle with productivity and performance which was also stressed by the interviewee from company 5. According to expert 1, it is not easy to judge the difference between a very efficient supply chain and an unsustainable, yet brutally efficient supply chain to the point where the suppliers might go out of business which will eventually affect the security of suppliers. The main reason lies in the fact that efficiency is a cost related gain which implies quality improvements through production and supply chain nets (Borgstrom, n.d). This issue is mostly linked to social compliance and effectiveness, where there is a degree of expectation and standards set that irrespective of how and where the products are made, retailers must offer high quality jobs and good working environments. There always exists a thin boundary between the retailers and suppliers with respect to what extent sustainability can be incorporated during operation.

Sustainability: A Northern Ideal?

The preliminary literature provides information on the major apparel production hubs situated in the developing countries and concentrated mainly in Asia. There is limited production of apparel in Europe and most of the production takes place in Turkey, Portugal, and few parts of Italy. However, two of the five interviewees stressed on the fact that sustainability is more inclined towards the northern part rather than the southern part. The firms considered in this study produce in Europe and developing countries mainly Bangladesh and few parts of Sri Lanka. According to the interviewee from company 5, sustainability in these developing countries is not a core part of the business and its rather an option that is dependent on the manufacturer. There are very few regulations imposed by the government in the developing countries with respect to adopting green practices in the supply chain. This view was also supported by Velrade (2011) who highlights that the national regulations with respect to sustainability in the developing countries are not yet fully enforced and foreign regulations have serious restrictions if not approved by the parties. Due to these reasons, the retailers face difficulties to convince the manufacturers to incorporate sustainability in their operations because it is neither at the forefront of their business nor their priority. They presume sustainability as a costly option that would hamper economic development for small and medium production enterprises.

Lack of Innovation and regulations

Innovation in the apparel industry plays a major role. Although there are new processes and innovations in the sustainability side, the interviewees still feel there is a lack of innovation in the clothing industry and awareness among customers. According to the interviewee from company 4, there is not enough regulations with respect to sustainability in the textile sector and the government must take a more leading and active role. Although recently all the firms signed a government order which stated that all the firms must practice due diligence based on the UZU guidelines as a mandatory aspect included in the operation strategies of organizations. Yet, the firms are still struggling to gain access to funds issued by the government. The interviewee's (company 4 and 5) , agree on the fact that there exists a large number of consumer groups who are still unaware of the devastating effects of fashion and do not prioritise ethical fashion mostly because it is expensive when compared to fast fashion. Although, the second-hand markets are gaining pace in the Netherlands, consumers are attracted to trendy and attractive clothes which is a result of fast fashion and eventually purchase them due to lower prices.

Market size for sustainable apparel

Although sustainable apparel is gaining pace in the Netherlands, the retailers still face challenges to increase their profit margins. According to the interviewee from company 4, certifications act as the drivers for adopting green practices, but on the other hand they act as a barrier for retailers as the certifications are expensive. For every certified supplier that is chosen for business are even more expensive as the suppliers have to cover the certification costs. There is an audit that is conducted every three years and the price margins of the certificates are dependent on the type of certificate acquired by the company. According to Maaïke Groen from Miss Green, it takes enormous amount of time and effort from the brands, manufacturers, and producers. Brands have to cover these certification costs as well as the costs for sustainable production which directly reflects on the price of the product resulting in higher prices for sustainable apparel than conventional clothing. Another major barrier for sustainable clothing for these firms qualifying as Emerging Davids are the size of the order portfolio. Although the order portfolios are quite large, but they cannot match up to the order portfolios of bigger brands like H&M. The first 10 pieces will not match up to the intended quality and after 100 pieces the workers are well aware of the sewing process and the product becomes cheaper. Since the margins of these firm are quite low, customers prefer bigger brands where products are priced cheaper.

4.5 DISCUSSION

Central to this research was sustainable entrepreneurship with the models of Emerging Davids and Greening Goliath's as the starting point of this research. This study also shed light upon the sustainable business model framework and the value chains of the sustainable apparel companies in the Netherlands. This research corresponds to much of the literature with few contributions mentioned here.

The findings of this research made it clear that contrast to the traditional fast fashion firms, the sustainable clothing brands require more than only capital investment to fulfil their demand as sustainability is more than just aiming for economic gain but rather focussing on the methods employed and the impact that is left behind during production and use phase of the item. However, the firms in this study are well aware that the bigger companies (Greening Goliath's) can defeat them in R&D, advertising and production to enter the market gap. Therefore, the emerging Davids prefer to maintain a small market value which is not attracting unreasonable interest from competitors. But overall, the interaction of the Davids and Goliath's will not lead to a sustainable clothing industry as the Davids have a smaller consumer position and are trapped with their high-priced goods, while the

Goliath's will probably or eventually would be pressurised by the cost factors, leading to lower sales and will therefore lower their sustainability performance.

Secondly, most of the firms produce in Europe and very few firms want to invest their money for production in developing countries. Although, the literature stresses that the working conditions and sustainability aspects are not that extensive when compared to Europe, but the sustainable entrepreneurs abide by their own sense of responsibility and internal motivation to affect change. Therefore, the fact that these entrepreneurs chose to produce in Europe is contradicting their perception about positive impact because if they are drawn towards creating a change, then why not produce in developing countries where there is a necessity for change? Therefore, this is an interesting point for the sustainable entrepreneurs in the clothing industry to think about and act accordingly. With respect to the sustainable business model, there is not enough means to assess social sustainability aspects. However, it must be noted that the social, technological, and organizational in the framework do not correspond to social or technological sustainability within the firm. They rather correspond to the way that the firms are ensuring sustainability; social, technological, and organizational. In other words, they correspond to the areas of innovation that are undertaken by businesses to ensure sustainability in their organization. Thirdly, this research relates to the body of research in the clothing industry. This study elaborated on sustainable fashion and the extensive efforts of the small firms which are sometimes unnoticed by researchers and practitioners. Therefore, this study can act as a baseline for other companies to integrate, innovate and intensify their sustainability efforts that can contribute to a better society and planet.

CHAPTER 5

CONCLUSION

The results for the main research question of this study are summarized in this chapter. The key research question is as stated below:

To what extent are the elements of sustainability practiced by the Dutch apparel retailers comprising the characteristics of Emerging Davids?

Sustainability problems in the apparel sector are increasing across the globe as new developments add to the increasingly massive and rising social and environmental impact of dressing 7.7 billion people all around the world. Innovative policies and technical innovations are being implemented to improve the industry in the coming years.

To answer this research question, I have investigated 5 sustainable apparel firms and their sustainability efforts. I have also engaged in conversations with two fashion experts who provided a general outlook with respect to the sustainability aspects in the fashion industry. The business models and value chains of the firms were considered as the starting point for this study. The sustainable entrepreneurs in this study are Emerging Davids who have recently ventured in the niche market. The actual sustainability efforts of these companies are explained in the previous chapter. These companies are owned by a small group of people with limited manpower and each step of the manufacturing process is mostly monitored by the suppliers. However, there are other companies that are involved in the internal operations of these companies to become sustainable. However, this research only an attempt to map the inclusion of sustainability in their business models with respect to the Sustainable business model framework. However, there are other archetypes which will be discussed as future research opportunities in the further sections. In order to provide a deeper insight of the main research question, the extent of sustainability efforts of the retailers is mapped on to a sustainability triangle as shown in Fig 12. However, it should be noted that the data required for justifying their position in the triangle was gathered through interviews and reviewing their most recent sustainability reports. The firms considered for this research are assigned numbers 1,2,3,4,5 . that is depicted on the Integrative Sustainability Triangle in order to demonstrate the degree to which the firms are incorporating all the aspects of sustainability.

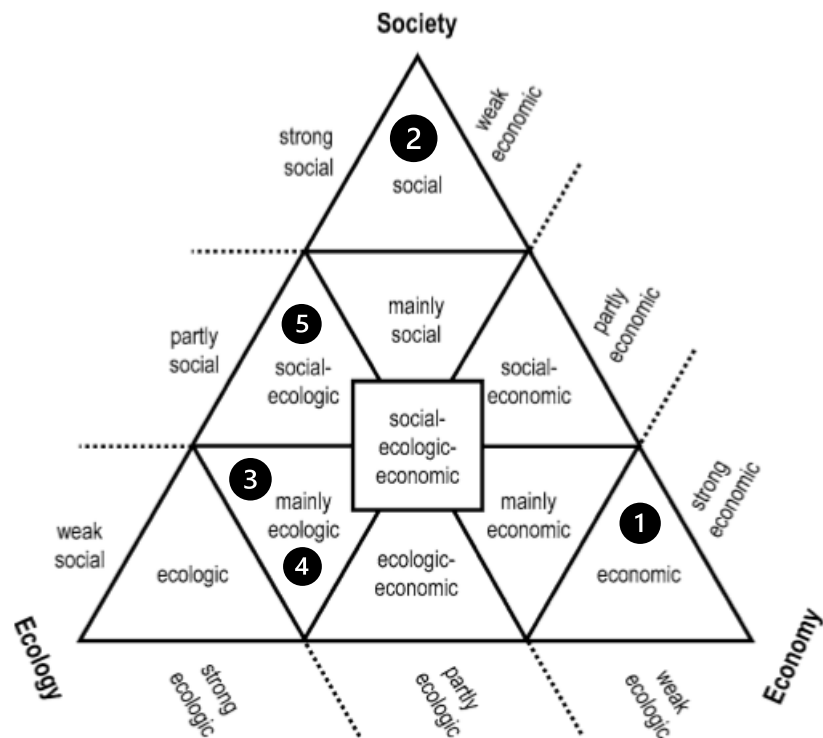


Figure 12: Indication of the apparel firms based on their sustainability inclusion in operations

Company (1) is placed in the quadrant of 'economic' with coordinates involving strong economic, weak ecologic and weak social. The main reason for weak ecologic is that Company 1 does not produce all products using sustainable/recyclable fabrics currently and their design style is primarily dependent on fabrics made from polyester. Although the founders argue that customer demands for polyester is hindering them to use PET and other recyclable fabrics, the materials play a critical role in ensuring environment sustainability. Therefore, justifying their orientation of weak ecology performance. Additionally, the firm is not GOTS certified which is one among the highest certifications with respect to textiles which deals with both aspects related to the society and planet. The company has a strong focus on the economic aspect which was evident from the interview as the company lacks financial investments and they believe achieving economic growth is interrelated to achieving environment and social sustainability as sustainability comes with a price.

Company (2) can be placed in the quadrant 'social' with coordinates strong social, weak economic and strong ecology performance. The company equally focuses on integrating social and environment sustainability in its operations. This can better be justified from the interviews where the founder gave insights about the environmental and social factors that they are adopting in their business model. They claim that have a very transparent way of dealing with the products they manufacture by ensuring the customer is fully aware of how and when the products were manufactured. Although, it can be argued that no fashion supply chain can be extremely transparent, but the company aims to

change this outlook. Additionally, the major production sites are situated in Europe which partially adds to ensuring well-maintained working environments and daily wages of the workers. The fabrics used are all sustainable and recyclable with no unwanted wastes generated. The water footprint and carbon footprint of the company is low as they use E-trucks or bikes to drop off the online orders. However, it was evident through the interview that the company faces issues with finances as the company recently laid off its employees and is now working with freelancers. Although it can be argued that the company is interested in working with freelancers but there is no evidence that came across during the interviews, rather it was clearer that the profit margins are not very high although their working standards are high.

Company (3) is placed in the quadrant of 'mainly ecologic' with coordinates involving partly social, strong ecologic and strong economic. Their efforts towards the environment side are extensive as they strive to incorporate the concept of Circular Economy in their operations. Although Circular Economy implies closing the loop without any unwanted waste streams the company is more focused on the environment and partly focused on the social aspect as their perception of social sustainability along the lines of the circular economy concept is partly hindering them to combine both social and environment sustainability. It can be clearly justified from their sustainability report which laid down their future goals and the extent to which they could achieve the previously set goals. However, their future goals are mainstreamed with respect to environment sustainability and Circular economy and it can be observed that they were able to achieve most of the set goals in the allotted time frame. Nevertheless, it is also evident through the sustainability report that there were very few targets set with respect to social factors with very limited achievements in the past years. The company also has a moderate economic aspect since their business model is inclined towards leasing of apparel rather than one-time sale which moderately ensures constant flow of profits. Company 3 was one among the first firms to introduce leasing of jeans in the niche market in the Netherlands which also contributed to their economic growth.

Company (4) can also be placed in the 'mainly ecologic' quadrant with coordinates of partly social and weak economic. One prominent point was highlighted during the interviews that the company is interested in environmental innovations and are constantly trying to upgrade their processes and methods which justifies their orientation as mainly ecologic. The company has limited manpower and they do their part with social aspects. Due to the limited amount of manpower available they are not able to address all the aspects related to social sustainability and therefore they strive harder on environment sustainability to keep the business consistent. Although, the company's profit margins are not very high when compared to other firms they are actively integrating with various projects

that involves new dyeing methods, new machinery etc., to create a better market for sustainable apparel in Europe.

Company (5) is placed in the quadrant of 'social-ecologic' with coordinates involving partly social, partly ecologic, and weak economic. The company solely focuses on the environment but it is also evident from the interview that the firm is using eco-friendly materials for its products but fails to control the greenhouse gas emissions that are emitted due to online shopping which is the core part of Miss Green's business model. This was a major concern that was expressed by the founder of this company and they look forward to adopting greener methods in the future. Although GHG emissions is only one of the indicators in environment sustainability but its high contribution to climate change and pollution makes it a deciding factor in this case. The company has a weak focus with the economic side as their profit margins are quite low and they are striving hard to increase their profits which also contributes to the moderate social sustainability aspects. . Nevertheless, they are focused on further improving social sustainability by ensuring more transparency and better working conditions in the developing countries.

However, it is indeed evident that the sustainable entrepreneurs in this industry are trying to combine all the three facets of sustainability. But it can be observed that the companies are more oriented towards environment and social sustainability rather than achieving economic growth as this generates from the mindset of people who intend to create a positive impact both on the planet and people. The integration of sustainability also depends on various factors which is hindering the entrepreneurs to achieve sustainability to the desirable extent. The interviewees in this study believe that transition to a fully sustainable business is not only about creating and incorporating alternatives, but also about letting go of the existing systems. However, the fact that the firms in this study are not fully inclined towards achieving social sustainability was evident through the interviews although they perceive that environment and social sustainability go hand in hand in the apparel industry. There may be many impeding factors/reasons that support the view of these entrepreneurs which are elaborated below.

Firstly, the improvement on environment sustainability offers a wider range of possibilities as the environment is rather highly impacted by various activities in the textile industry when compared to the impact on society. The environment plays a crucial role in every phase that includes the wash phase, drying phase, or the dyeing phase. Therefore, there is always scope for improvement and innovation with respect to aspects related to environment. It was also evident from the interviews that most of the 'Greening' took place in the fabric stage of the supply chain. But it can also be

observed that, not every aspect is achieved on this front, and therefore, the companies seem to be more mindful of the sustainability issues that can still be tackled.

Secondly, companies that are more environmentally conscious are preferred as business partners and other ventures as they tend to generate greater value for different stakeholders. Additionally, the companies image also improves leading to a positive market response to the company's environmental performance. Furthermore, trying to build value for all the actors in the supply chain through creation of environmentally friendly goods, optimizing the production process can lead to a greater awareness, especially among customers of the firm's environmental responsibility and influence their opinion on the company's loyalty. On the other hand, the social factors are bound by cultural differences and political backgrounds for example: In Turkey it is not normal to be unionised and therefore the company must change few aspects with respect to their social standards. This point was put forward during the interviews as the companies were in dilemma on how to handle this issue. This can also be linked with personal experiences of the entrepreneur in the apparel industry. Aspects of social sustainability is also interdependent on economic sustainability as a small company with less profit might pay lesser wages when compared to a company with a mediocre profit.

Although there are many frameworks and guidelines issued for companies to establish a socially responsible business in the apparel industry, they are not widely used. Frameworks like ILO, Decent Work Framework etc., are criticised by some as they are sometimes not applicable to the varied situations these entrepreneurs face in their business. Other certifications such as GOTS, OEKO-Tex, PETA-Vegan are expensive which was evident through the interviews as well. It was rather found that these entrepreneurs rely on their own sense of social sustainability and experiences, of which production in Europe and Asia is a big part. Also, the establishment of the firms play a critical role as the firms established very recently are yet to familiarise with the industry and therefore, their sustainability efforts might not be directed towards a specific direction. Therefore, not abiding by the certification guidelines or not acquiring the certifications do not pose as a barrier, but not everybody in this industry who starts a sustainable business has the required expertise. . Additionally, the low market for sustainable apparel is restricting these entrepreneurs to create a fruitful position in the market.

Sustainability being a broad spectrum of indicators, all the firms have their own methods and priorities in tackling the sustainability issues and this creates a rather fragmented landscape of the clothing industry, leading to speculations that the firms are focused on either of the sustainability aspect. Nevertheless, there is no consistent blueprint or a business model on how to be sustainable, therefore recognising sustainability is still a ongoing process or concept. Although the firms encounter various

barriers to incorporate sustainability in their operations, they are trying to maximise their sustainability performance as it has become a mandate aspect in the apparel industry. But it is noteworthy to remember that even if companies will steer through the complexities of assessing the environmental impact of their apparel product or a process, it should be borne in mind that the life cycle of clothing is never impact free. At each and every stage of the apparel production, it is dependent on the surroundings to provide specific inputs and outputs. With this fact in mind, businesses can consider that minor yet carefully systematic moves in the appropriate path can be much more successful in sustainability than aiming for broader unreasonable leaps.

Future Research Opportunities

This study offers numerous opportunities for future research. This study embarked upon the sustainable business model by Bocken et al., (2011) which included archetypes with respect to technological, social, and organizational. However, the social archetype did not reflect the actual social sustainability efforts by different firms mainly with respect to transparency which is a core indicator of social sustainability. Future research calls for further enhancing the social sustainability aspects in the sustainable business model framework which was used as a baseline to elaborate on the inclusion of sustainability aspects in the business model of the retailers in the clothing industry. The future research can also be directed along the lines of sustainable clothing consumption, customer patterns and behaviours. Lastly, future research can be conducted to examine how technology such as artificial intelligence can be incorporated in the manufacturing of apparel in order to improve efficiency, reduce workplace accidents and increase precision. Nevertheless, the government should also play a more proactive role by sanctioning funds/incentives to those ethical retailers who are committed to achieving sustainable practices in production. The future case studies can also focus on what ways sustainable apparel can improve its market position as in the emerging markets, sustainable fashion is present only on a smaller local scale and therefore a detailed action research can prove to be fruitful to the entire industry.

RECOMMENDATIONS FOR PRACTITIONERS

This research aims to provide recommendations to the pioneers in the sustainable clothing industry centred on the Netherlands who face difficulties incorporating green practices as well as for the clothing industry in general. Although, the sample of companies considered for this research are small, one can say that the issues discussed in the interviews which are elaborated in 4.4 are representative of the core issues that the Dutch sustainable fashion industry are facing currently. The proposed

recommendations are not only for practitioners but the government as well. The recommendations include:

- **Active governmental participation**

Although there are existing regulations on textiles and its manufacturing, the firms in this research consider that the government is not very proactive that can boost the sustainability stance in an organization. The government must promote cooperation between fashion retailers, water companies with laundry departments and take the lead to mitigate the microfiber pollution and enhance sustainability in the firm. It can play an integral part in 'extending the liability of producers'- forcing companies to embrace the goods they sell when the customers return them at the end of their life cycle. The government can encourage the firms to shift from conventional cotton to organic cotton and from virgin polyester to recycled PET. The government must change taxes to reward retail firms producing products with a lower effect on the environment and penalizing those who do not. This can also motivate the retailers to enforce green practices in their firm.

- **Advent of Technology: A boon for the clothing Industry**

There are always new technological developments including automation in many fields. Digital technology is used in numerous supply chains throughout the world. However, the clothing industry lacks the incorporation of technology in its processes. The fashion industry being a modern high-tech society should invest in technology to increase the transparency and other aspects in the supply chains. The usage of 'Big Data' will help the retailers to fully understand their supply chains and measure their environmental impact of their production processes by making use of the concepts of 'Data Analytics' and 'Machine Learning'. The retailers in the fashion industry, often work with old data as the procedure to measure the impacts is time consuming. The advent of technology in the production processes and supply chains can provide the retailers with real time insights. Although the retailers lack direct control on the production process which might hinder the incorporation of technological opportunities in production. However, they have direct control on the suppliers and in most cases the retailers maintain good relations with the suppliers which provides them the opportunity to compel their suppliers to fulfil the necessary requirements to use technological aspects in production.

- **Technological Advances in Fabrics**

Fabrics form the core part of the apparel industry which has the highest impact on the planet and the people. Although, there are many eco-friendly fabrics already being used by the clothing firms in the

Netherlands, there are new inventions which are noteworthy to mention namely fabrics produced from food leftovers that are listed below:

- **coffee ground fibres:** These fibres are manufactured from 'post patented coffee' ground along with polymer to build master batches which will eventually be spun into yarn. The resulting multipurpose coffee yarn can be used in a variety of apparel sectors that include sportswear, household and outdoor.
- **Pineapple Fabric:** It is considered as a vegan substitute to leather that is primarily produced from pineapple leaves by a process called 'decortication' which involves extraction of the fibres from pineapple leaves. The extracted fibres are then subjected to an industrial process which results in a non-woven textile forming the basis of the fabric. The by-products are used as biomass or fertiliser which closes the loop of material production. This fabric was developed by a company in UK which is 100% vegan and sustainable.
- **Banana Fibres:** The banana fibre can be considered the finest natural product in the world that is produced from core of the banana tree that is completely biodegradable and sturdy in nature. These fibres are commonly produced from recycled banana stems which is otherwise considered as waste and discarded by the farmers. Although, this fabric possesses many advantages, the method of producing these fibres is labour-intensive as the yarn is made by boiling the sheath strips in an alkaline solution resulting in softer and separate threads. Nevertheless, they can be considered as an alternative to bamboo fibres as they better tensile power, fineness and spin ability.

- **Production Transparency: Make Sustainability reports mandatory**

Out of all the companies interviewed for this study, 3 out of 5 companies do not publish a sustainability report each year. However, most of the companies that were selected for this research and could not be interviewed for unavoidable reasons also did not publish any sustainability reports in the past years. Although some companies achieve transparency to some extent, but they are not recorded anywhere. Therefore, the sustainability reports can provide detailed information on the workers, conditions of the factory, suppliers, materials used etc., that can aid in enhancing consumer understanding as to what they are buying and helps them become more informed citizens. Such information can create more positive customers who can connect to the brand and in turn the brand will be able to respond more actively to their needs.

- **Collaborations within the industry**

A solid point was put forward by the interviewee's that companies are facing challenges with volumes as they are quite low. Operating in a pre-competitive setting, peer companies that share the relatively same supply chains can establish and put together common standards and future expectations that involves best practices to enhance the sustainability performance in their firm. This can also act as a baseline to judge their suppliers on the same metric. Such partnerships can help avoid audit fatigue, maintenance preparation and mountains of paperwork for suppliers working to fulfil specific customer requirements. Working with the peers in the industry can be a positive step towards sharing information and learning about other supplier's sustainability performances. Therefore, collaborations within the firms in the industry could result in result in larger volumes where the article gets cheaper as the process flows, and firms can gain more collective stance to demand the suppliers to adopt green practices.

- **Baseline supplier performance**

When the businesses are aware of their target suppliers and a set of regulatory criteria has been laid out, the collection of supplier data can be obtained through a simple benchmarking questionnaire or self- assessment that will provide a deeper understanding and improve partnerships. The retailers can evaluate the performance of their suppliers through surveys and questionnaires. Companies should increasingly incorporate every area that is specified in the code of ethics with particular focus and priority on self-assessment of those areas that are more relevant to the company. The organizations are expected to match the quality of their tests with the guidelines laid out by GRI. . The baseline assessments can act as potential point for firms to enhance their sustainability in the supply chains and help them determine where there is there is a greatest need for change. This information should be communicated back to the suppliers in a constructive manner as it is critical for future engagement ad encourages improvement.

- **Reduction in cost of sustainability**

As it is rightly said sustainability is a costly option making goods produced sustainably expensive. Due to this high cost of products produced eco-friendly, sustainable consumption is being hindered to a certain extent as the customers are not willing to pay such high costs. The part of the reason lies in the fact that acquiring these certificates are time consuming as well as expensive. Although these certificates ensure standardization in production, they are often quite expensive for the manufacturers to afford them and the cost of sustainable fabrics and suppliers adds to it making the end products priced higher than traditional clothing. Therefore, by reducing the price of these certifications, audits, assessments, and fabrics, sustainable goods can build a better market value and

be easily affordable by the consumers. By lowering the prices, the firms who cannot afford sustainability can perceive these as incentives and integrate sustainability in their operations.

- **Build capacity building and educational programmes: Learning and creativity**

This is a crucial step towards enhancing quality and promoting improvement with respect to behavioural changes around the supply chain. Although, the interviewee's stress that they work with suppliers who prioritise sustainability in their business, but there are almost no supplier development initiatives that are being carried out in these firms. Except for company 4 the other firms do not have such programme's directed towards supplier development. That said, additional tools targeted to the unique requirements of the apparel industry can be used to promote these initiatives. One of the most influential methods of sharing information across the supply chain to incorporate best practices and statistical analysis of top-performing suppliers by professional education programs and skill development activities at annual distributor conferences. By showcasing the success stories of chosen suppliers, organizations not only recognize their efforts but also demonstrate the realistic advantages of environmental programs to those inside the supply chain.



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Appendix 1: Organizations and Individuals interviewed

Organization	Interviewee	Contact Type/Address
Company 1	Jaman Miah	Skype Interview info@wovenbv.com
Company 2	Daan Ubachs	Phone interview hello@unrobe.com
Company 3	No interviewee	info@mudjeans.eu
Company 4	Zoe Daemen	Skype Interview info@kuyichi.com cr@kuyichi.com
Company 5	Maaike Groen	Skype Interview info@miss-green.nl
Organization 2	Anita Matuszewski	Phone Interview LinkedIn: https://www.linkedin.com/in/anita-matuszewski-78668a51/
Organization 1	Paula Konter	Phone interview Paula.Konter@texperium.nl

Appendix 2: List of Interview Questions

Drivers:

1. What motivated you to adopt sustainability practices?
2. Do you think requirement of a new niche market also played a role in incorporating sustainability in your business?

Business model -Social sustainability

1. Do you monitor the daily wages and satisfaction of employees along with appropriate work environment to maintain and attract competent people?
2. How can owning product locations contribute in enhancing the social issues?
3. What is your view about certification standards? Which certification standard are you currently following?
4. How is health and safety of the employees being guaranteed through the supply chain?

Environment Sustainability

1. With respect to product design, does your company work with certified suppliers who have sustainability as a priority?
 - What type of materials (fabric) and packaging are currently being used in your company?
2. The ease of ordering via e-commerce has led to faster shipping rates leading to increased pressure on transportation and eventually leading to GHG emissions. How is this being assessed and monitored in your company?
3. How is the use of toxins and chemicals regulated in the production process without hampering cost and performance?
4. How does your company approach the problem of waste generation? Is there a strategy devised to handle the wastes?
5. Apparel production is considered as a thirsty business, what is your say on the water footprint of your business?

Economic Sustainability

1. What are the most important costs incurred while operating sustainably and how important is it for your company to minimise costs? *
2. With increase in the prices of raw materials (Water, fabrics, certifications), how are the profit margins getting affected? *

Sustainable business model

1. With respect to demand for energy and resources, what steps have been taken in your company to maximise material and energy efficiency? *
2. Is your business model focused on offering the manufactured product or a combination of both products and services to the customers?
3. How are all the relevant stakeholders engaged in order to ensure the well-being and health of your firm's value network? *
4. What does your company prioritise with respect to sustainability? *
 - Social, Environment or economic profit?

Barriers

1. What are the possible barriers that you incur in your business while operating sustainably? *

QUESTIONS FOR FASHION EXPERTS

1. What are the possible sustainability issues the retailers in the clothing industry might face?
2. How can partnerships and joint collaborations of different stakeholder's and firms help in governing social issues?
3. What is your say on renting/leasing of apparel?
 - Do you think its contribution with respect to sustainability is higher when compared to one-time sale of apparel?
4. How will the market for sustainable apparel change in the upcoming years?
5. How can legitimacy and accountability be maintained through the supply chain?
 - Do you think suppliers play a key role in maintaining transparency in the process as they are directly in contact with the manufacturers?
6. In the Netherlands, pioneers are looking to stimulate local production of apparel rather than sourcing from developing countries, what is your opinion on that?
7. How Do you think competition between firms can influence economic sustainability?

