



DEGREE PROJECT IN INDUSTRIAL ENGINEERING AND
MANAGEMENT,
SECOND CYCLE, 30 CREDITS
STOCKHOLM, SWEDEN 2020

Strategic Proposals for Sustainable Supply Chains in the Fast Fashion Industry

Exploring ways to incorporate concepts and
methods to confront the damaging effects of the
industry

ADIL ABDULGADIR

IMAD ABDULGADIR

TRITA TRITA-ITM-EX 2020:585

Strategic Proposals for Sustainable Supply Chains in the Fast Fashion Industry

Exploring ways to incorporate concepts and methods to
confront the damaging effects of the industry

by

Adil Abdulgadir
Imad Abdulgadir

Master of Science Thesis TRITA-ITM-EX 2020:585
KTH Industrial Engineering and Management
Industrial Management
SE-100 44 STOCKHOLM

Strategiska Förslag för Hållbara Försörjningskedjor inom Snabbmodeindustrin

Utforskar möjligheter till att införa koncepter samt metoder för
att konfrontera de skadliga effekterna av industrin

av

Adil Abdulgadir
Imad Abdulgadir

Master of Science Thesis TRITA-ITM-EX 2020:585
KTH Industrial Engineering and Management
Industrial Management
SE-100 44 STOCKHOLM



KTH Industrial Engineering
and Management

Master of Science Thesis TRITA-ITM-EX 2020:585

**Strategic Proposals for Sustainable Supply Chains in
the Fast Fashion Industry**

Exploring ways to incorporate concepts and methods to
confront the damaging effects of the industry

Adil Abdulgadir

Imad Abdulgadir

Approved 2020-11-01	Examiner Matti Kaulio	Supervisor Jannis Angelis
	Commissioner Confidential	Contact person Confidential

Abstract

Accounted as the second largest cause of pollution, the fashion industry is only behind the petroleum industry worldwide. In recent decades, the supply chains of retail companies have become international with the growth of a global economy. As a result, fashion companies have increasingly shifted their supply chains into developing countries with cheaper labour. The shift is made possible due to their lower environmental awareness and looser environmental regulatory systems. This dominant business model within the clothing industry has gained enormous traction within recent decades and has been coined with the term *fast fashion*. However, due to the negative economic, social and environmental impact, mainly in developing countries, fast fashion companies increasingly focus on sustainability efforts within their supply chains to ensure the same quality and standards in production and working conditions. The thesis seeks to investigate what efforts have to be done within the supply chains of fast fashion companies in order to become more sustainable. A case study is conducted with a fashion retailer based in Sweden, referred to as Company X, through several semi-structured interviews in order to explore how Company X manages to keep a competitive advantage through its extensive sustainability efforts within its supply chain. The findings and analysis of this study show that there are numerous supply chain strategies for improvements, including sustainable manufacturing, eco-material preparations, green distribution, ethical consumers and reshoring vs. offshoring strategies. The major competitive advantages that are achieved according to the company itself come from; a shift from labour-intensive suppliers to capital-intensive, strong brand image, credibility, increase in ethical consumers, partnerships, transparency and traceability. Conclusively, purchasing from capital-intensive suppliers rather than labour-intensive suppliers will yield new innovative solutions for technologically advanced eco-material as well as efficiency in the production process. Furthermore, it was found that for a reshoring strategy to become the norm in the near future, extensive work and research is required. Lastly, as consumers' behaviour shifts towards a more ethical mindset, traditional fast fashion companies will continue to lose an important customer segment if no changes are made.

Keywords

Fast Fashion, Supply Chain, Sustainability, Sustainable Fashion, Slow Fashion, Supply Chain Management



KTH Industrial Engineering
and Management

Master of Science Thesis TRITA-ITM-EX 2020:585

Strategiska Förslag för Hållbara Försörjningskedjor inom Snabbmodeindustrin

Utforskar möjligheter till att införa koncepter samt metoder
för att konfrontera de skadliga effekterna av industrin

Adil Abdulgadir

Imad Abdulgadir

Godkänt 2020-11-01	Examinator Matti Kaulio	Handledare Jannis Angelis
	Uppdragsgivare Konfidentiell	Kontaktperson Konfidentiell

Sammanfattning

Modebranschen är den näst största orsaken till föroreningar världen över bakom oljeindustrin. Under de senaste decennierna har försörjningskedjor för detaljhandelsföretag blivit internationella med tillväxten av en global ekonomi. Som ett resultat har modeföretag i allt högre grad flyttat sina försörjningskedjor till utvecklingsländer med billigare arbetskraft. Förändringen möjliggörs på grund av deras lägre miljömedvetenhet och lösare miljö rätt. Denna dominerande affärsmodell har fått ett enormt fäste inom kläindustrin under de senaste decennierna och har myntats med termen fast fashion. Men på grund av den negativa ekonomiska, sociala och miljömässiga påverkan, främst i utvecklingsländer, fokuserar snabbmodeföretag alltmer på hållbarhetsinsatser inom sina försörjningskedjor. Detta görs för att säkerställa samma kvalitet och standarder i produktions- och arbetsförhållanden. Arbetet har i syfte att undersöka vilka insatser som måste göras inom fast fashion-industrins försörjningskedjor för att bli mer hållbara. En fallstudie genomförs med ett modeföretag baserad i Sverige, kallad Company X, genom flera semistrukturerade intervjuer för att utforska hur de lyckas behålla konkurrensfördelar genom sitt omfattande hållbarhetsarbete inom sin försörjningskedja. Resultaten och analyserna av denna studie visar att det finns många strategier för förbättringar inom försörjningskedjan, inklusive hållbar tillverkning, miljövänliga preparat, grön distribution, etiska konsumenter och reshoring kontra offshoring-strategier. De stora konkurrensfördelarna som uppnås enligt företaget själva kommer från; en övergång från arbetsintensiva leverantörer till kapitalintensiva, stark varumärkesimage, trovärdighet, ökade etiska konsumenter, partnerskap, transparens och spårbarhet. Avslutningsvis så kommer köp från kapitalintensiva leverantörer, snarare än arbetskraftsintensiva leverantörer, leda till nya innovativa lösningar för tekniskt avancerade miljömaterial såväl som effektiviseringar i produktionsprocessen. Dessutom konstateras det att för att en reshoring-strategi ska bli normen inom en snar framtid krävs omfattande arbete och forskning. När konsumenternas beteende skiftar mot en mer etisk inställning, kommer traditionella fast fashion-företag att fortsätta att förlora ett viktigt kundsegment om inga förändringar görs.

Nyckelord

Snabbmode, Försörjningskedja, Hållbarhet, Hållbar mode, Långsam mode, Ledning av försörjningskedja

Acknowledgement

This research paper was conducted as a part of our education. Adil has defended his thesis, pursuing a degree in Master of Science in Engineering at Mechanical Engineering and Imad has defended his thesis, pursuing a degree in Master of Science in Engineering at Industrial Engineering and Management at the Royal Institute of Technology (KTH) in Stockholm, Sweden.

We would like to express our great appreciation to our supervisor at KTH, Jannis Angelis, for his support by directing us through our research. We would also like to direct gratitude towards our examiner, Matti Kaulio, for his assistance in establishing a solid structure of our thesis.

Additionally, we would like to thank everyone at Company X and anyone unmentioned who contributed to our research. Lastly, we would like to show our deepest acknowledgement to our family for their continuous support and guidance through our five years studying at KTH.

*Adil Abdulgadir & Imad Abdulgadir
Stockholm, June 2020*

Contents

1 INTRODUCTION	1
1.1 BACKGROUND	1
1.2 STRUCTURE OF THE THESIS	3
1.3 RESEARCH PURPOSE	3
1.4 RESEARCH QUESTIONS	4
1.5 DELIMITATIONS	4
1.6 RESEARCH CONTRIBUTIONS	5
2 LITERATURE REVIEW	6
2.1 FAST FASHION	6
2.1.1 <i>Speed of Fast Fashion</i>	7
2.1.2 <i>The Negative Impact of Fast Fashion</i>	8
2.1.3 <i>Consumer Behaviour within Fast Fashion</i>	12
2.1.4 <i>Views on Fast Fashion</i>	13
2.1.5 <i>Slow Fashion – a response to Fast Fashion</i>	14
2.2 SUSTAINABLE FASHION	15
2.2.1 <i>Transitioning from Fast to Sustainable Fashion</i>	15
2.2.2 <i>Contributions and Progress in Sustainable Fashion</i>	17
2.3 SUPPLY CHAIN WITHIN FASHION INDUSTRY	19
2.3.1 <i>Supply Chain within Fast Fashion Industry</i>	21
2.3.2 <i>Sustainability Efforts towards Fast Fashion Supply Chains</i>	22
2.4 THEORETICAL FRAMEWORK	25
2.4.1 <i>Sustainable Supply Chain Management Framework</i>	25
3 METHODOLOGY	28
3.1 RESEARCH DESIGN	28
3.2 RESEARCH PROCESS	30
3.2.1 <i>Literature Review</i>	30
3.2.2 <i>Empirical Data Gathering</i>	31
3.3 DATA ANALYSIS	33
3.4 RESEARCH QUALITY	36
3.5 ETHICAL ASPECTS AND SUSTAINABILITY	37
3.5.1 <i>Research Ethics</i>	37
3.5.2 <i>Sustainability</i>	37
3.5.3 <i>Implications of COVID-19</i>	38
4 RESULTS & ANALYSIS	40
4.1 SUSTAINABILITY EFFORTS TOWARDS FAST FASHION SUPPLY CHAINS	40
4.1.1 <i>Sustainable Manufacturing</i>	40
4.1.2 <i>Eco-material Preparation</i>	42
4.1.3 <i>Green Distribution</i>	43
4.1.4 <i>Ethical Consumers</i>	44
4.1.5 <i>Reshoring vs. Offshoring</i>	45
4.2 EXAMINING SEVERAL COMPETITIVE ADVANTAGES OF COMPANY X	46
5 CONCLUSION	49
5.1 ACHIEVING A SUSTAINABLE FAST FASHION INDUSTRY	49
5.2 ACHIEVING A COMPETITIVE ADVANTAGE	51
5.4 LIMITATIONS	53

5.5 FUTURE RESEARCH	54
REFERENCES	56
APPENDICES.....	64
APPENDIX – INTERVIEW GUIDE	64

List of Figures

FIGURE 1. AN ILLUSTRATION OF IMPORTANT PROCESSES WITHIN A FASHION SUPPLY CHAIN	20
FIGURE 2. TRIGGERS AND INCENTIVES STIMULATING FOCAL COMPANIES TO ADOPT SSCM PRACTICES (SEURING ET AL., 2008).....	26
FIGURE 3. ILLUSTRATION OF A QUALITATIVE STUDY	28
FIGURE 4. THE DESIGN OF THE METHODOLOGY PROCESS	29
FIGURE 5. THE PROCESS OF INTERVIEWING, TRANSCRIBING AND CODING	32

List of Tables

TABLE 1. AN OVERVIEW OF THE INTERVIEWEES IN THE STUDY	33
TABLE 2. CODING OF INTERVIEWS INCLUDING A DESCRIPTION OF EACH THEME AND THE KEYWORDS WITHIN THEM.....	34

Acronyms

BCI	Better Cotton Initiative
CAD	Computer-Aided Design
CSR	Corporate Social Responsibility
ESG	Environmental, Social and Governance
GDP	Gross Domestic Product
IT	Information Technology
JIT	Just-in-time
LMIC	Low-to-Middle-Income Country
LTL	Less-than-truckload
NGO	Non-governmental Organization
QR	Quick Response
SAC	Sustainable Apparel Coalition
SCM	Supply Chain Management
SDG	Sustainable Development Goals
SE	Sweden
SLS	Selective Laser Sintering
SSCM	Sustainable Supply Chain Management
TBL	Triple Bottom Line
UN	United Nations

1 Introduction

In this first chapter which covers six sections, a background to the research subject is introduced which is followed by an overall structure of the research paper. This is then followed by the purpose of the research as well as the research questions, the delimitations, the possible contributions from the master thesis and lastly the research domain.

This paper is a collaboration between two researchers at the Royal Institute of Technology and a small fashion retailer (~20 employees) operating within the fashion industry, based in the Nordic, hereafter called Company X.

1.1 Background

Globally, around 80 billion new pieces of clothing are purchased each year which is more than 400% of the amount consumed just two decades ago (Swink, 2018). This amounts to \$1.2 trillion annually for the global fashion industry (Bick et al., 2018). Accounted as the second largest cause of pollution with the average American nearly throwing away 70 pounds of clothing per year, the fashion industry is only behind the petroleum industry worldwide where at least 8000 chemicals are utilized in their process of producing textiles from needed raw materials. This results in permanent damage to the people and the environment. However, two-third of a garment's footprint will appear once it is purchased (Woodside et al., 2019).

Garment consumption has skyrocketed as a result of companies selling large quantities of clothing at cheap prices known as an emerging and dominant business model within the clothing industry called *fast fashion* (Bick et al., 2018). Fast fashion is a term that originated in fashion retail to report on the low cost readily fashion of today (i.e. quick turnover of designs where current fashion trends emerge hot off the runway). Fast fashion has become the norm for big-name fashion brands in the early 21st century where the number of garments purchased each year by the average consumer increased by 60% from 2000 to 2014 according to a report conducted by McKinsey & Company (Remy et al., 2016). Furthermore, as a result of a decline in costs, efficient operations, and incline in consumer spending, clothing production increased by 100% between 2000 and 2014 (Ibid).

Notably, throwaway garments (i.e. garments that are thrown away as they are no longer quickly trendy) are having a more negative impact on climate change than sea and air travel combined. Moreover, approximately 50% of fast fashion items are disposed of within one year after

purchase which more often than not leads to the items ending up in landfills (Russell, 2019). In the US alone, around 85% of the clothing items consumed (which amounts to nearly 3.8 billion pounds annually) end up in landfills as solid waste (Bick et al., 2018).

The supply chains of retail companies have become international as a result of the growth of a global economy which has led these companies to shift their growth of fibres, their manufacturing of textiles as well as their construction of garments into areas with *cheaper* labour (Bick et al., 2018). Fashion companies were attracted to locate their production facilities in developing countries in the pursuit of low production costs. It turns out it was achievable due to the developing countries' lower environmental awareness and looser environmental regulatory systems (Shen, 2014). Moreover, the rising consumer spending has been a major factor in driving the production of inexpensive clothing where prices are kept down significantly as a direct result of fast fashion companies outsourcing their production to low and middle-income countries (LMICs) such as Bangladesh (Bick et al., 2018).

An alternative trend against the fast fashion industry is sustainable fashion, also known as “eco-fashion”, which is a movement that encourages change in the process within the fashion industry into system maintainability. The purpose of system maintainability is to create consistency which supports human impact on the environment and social responsibility (Woodside et al., 2019). There are specific identifiable sustainable fashion trends, including innovative behaviour by a growing number of firms as well as segments of fashion consumers, who are focusing on nurturing the reduction of the pollution as a result of fashion (Ibid).

For the fast fashion companies to maintain their supply chain strategies of just-in-time sourcing and staying quickly responsive, some ethical issues concerning employees and environmental issues (both within production and logistics) are being disregarded (Turker et al., 2014). Thus, along with the emergence of the fast fashion industry, it became evident that apparel companies caused big social and environmental problems which have led many of these companies to increase their focus on sustainability within their supply chains and ensure enhanced quality and standards both within working and production conditions (Ibid).

1.2 Structure of the Thesis

The overall structure of the thesis is presented down below as follows:

Chapter 1 - Introduction

The first chapter covers six sections including a description of the background to the research subject, the purpose of the research, the research questions, delimitations and research contributions.

Chapter 2 - Literature Review

The second chapter includes a deep and thorough critical analysis of published sources within the research area in general as well as a theoretical framework that supports and structures the study.

Chapter 3 - Methodology

The third chapter discusses the methodology employed and present a research design that explains how the methodology is designed. After the research design, a research process is initially described which breaks down the data collection implemented in the research before data analysis is covered in detail. More specifically, a discussion of how the data were coded and analyzed is covered in this section. At last, considerations regarding ethics as well as the research quality of the study is looked into.

Chapter 4 - Results & Analysis

The fourth chapter includes empirical findings collected from semi-structured interviews which is supported by findings gathered from scientific papers. Furthermore, this chapter also includes analysis and discussions of the findings conducted.

Chapter 5 - Conclusion

The fifth chapter provides a summary of the study highlighting the key findings and analysis. This chapter also answers the research questions, discuss any possible limitations, contributions to research and lastly provide suggestions on future research within this topic.

1.3 Research Purpose

The goal of this study is to investigate what has to be done within the supply chain of fast fashion companies in order to become more sustainable and use the findings from the

investigation to execute a case study of a fashion retailer based in Sweden referred to as Company X. More specifically, the goal is to analyze how it keeps a competitive advantage against its larger peers by applying a larger emphasis on sustainability within its supply chains in comparison to the larger peers.

Therefore, this research study aims to provide an analysis of a variety of factors affecting the supply chains of apparel companies as well as what roles both social sustainability as well as environmental sustainability play in creating a competitive edge by utilizing sustainability.

1.4 Research Questions

To fulfil the purpose, two research questions have been formulated. The expected outcome from the first research question is used to answer the second research question.

In order to understand the increasingly important issues and effects of consumerism within the fast fashion industry that every company in the industry has to confront, in combination with a rising demand for sustainable solutions from consumers, RQ1 is investigated:

RQ1) *What has to be done in order for the supply chain within the fast fashion industry to become more sustainable?*

In order to gain a better understanding for what essential benefits the fast fashion retailers could draw from, by implementing the suggested sustainability efforts from RQ1, that could differentiate them from others in the industry, RQ2 is investigated:

RQ2) *How does Company X keep a competitive advantage given the sustainability efforts towards its supply chain?*

1.5 Delimitations

Due to limited time and resources, limitations had to be set to keep the research relevant and within the time frame. The overall scope of this paper is limited to companies operating within the fashion industry where the research aims to investigate what the fast fashion companies all over the world have to do to turn their unsustainable supply chain strategies around.

This study also focuses on analyzing how Company X keeps a competitive advantage against larger peers by utilizing and constantly implementing new sustainable supply chain strategies.

The competitive advantage of Company X is determined partly regarding how desirable the consumers view Company X's abilities and attributes towards sustainability as well as how its actual attributes outperform its peers' attributes.

Furthermore, this study includes the major supply chain processes within the fast fashion industry. Thus, the study is not only focused on deep diving into one specific supply chain process to find sustainability improvements. Some of the supply chain processes included in this research are; manufacturing, distribution, material preparation, end-consumer analysis, reshoring and offshoring strategies.

In this study, fast fashion is defined as "inexpensive designs that move quickly from the catwalk to stores to meet new trends" (Hayes, 2020). Finally, this research paper focuses on the whole supply chain of the fast fashion industry.

The term *sustainable* in research question 1 is defined as "*the integration of environmental health, social equity and economic vitality in order to create thriving, healthy, diverse and resilient communities for this generation and generations to come*" (UCLA Sustainability, n.d.). Thus, sustainability considers the environmental- and social aspects as well as an economic aspect to a smaller extent.

1.6 Research Contributions

During the recent years, even though a lot of research has been conducted within the topic of sustainability within the fast fashion industry, there are still a few gaps on how the fast fashion companies can ease their transition into becoming more sustainable in their supply chains. One such gap is research exploring what the fast fashion companies have to do to become more sustainable within their supply chains. This can be done by conducting case studies of how fashion companies with a deeply incorporated focus on sustainability within their core business have implemented their sustainable supply chain strategies and what the consequences are. Thus, attempting to partly fill this gap is one of the contributions of this study. The better understanding of the overall consequences of increased sustainability in supply chains might shift the fashion companies into new supply chain strategies.

Furthermore, this study not only serves a benefit to fast fashion companies looking to become more sustainable but also for slow fashion companies looking to become more sustainable within their supply chains. An analysis of what sustainability improvements the fashion retailer,

Company X, is making within its supply chain to become more competitive is analyzed. Moreover, this research is of value for researchers, start-ups with a focus on sustainability, governments and environmental organizations for laying a better ground for regulations as well as the effects of applying sustainable supply chain strategies.

2 Literature Review

In this chapter, a literature review of the research area is presented. The topic of fast fashion is explored in depth followed by a section of the area within slow fashion. The movement and process called sustainable fashion is presented in detail as its own section. Following sections covers the supply chain within the fashion industry as well as extensive research conducted on sustainability efforts towards fast fashion supply chains. Lastly, this section is concluded by presenting the theoretical framework that supports the structure of the study.

2.1 Fast Fashion

In the past 20 years, the fashion industry has undergone an extensive change given the circumstances of a modern global market. In this modern global market, which was characterized mainly by high labour and low capital, the natural step for the industry was to move the production and manufacturing to developing countries. This is because of their characteristics of having fewer regulations and cheaper labour (Swink, 2018). This, in combination with a higher demand the consumers had for short-lived trends, resulted in the emergence of the business model called “fast fashion” (Ibid). Fast fashion can be defined as “inexpensive designs that move quickly from the catwalk to stores to meet new trends”. Fast fashion is associated with shorter lead times, low prices as well as highly trendy designs with some of the leading global fast fashion retailers being H&M and Zara (Turker et al., 2014).

Since huge quantities of cheap clothes were being produced under an intense time pressure along with an increase of uncertainty, fashion companies had to find a way to mitigate this by establishing a few principles (Johansson, 2010). Just-in-time principles were established which utilized inventory management and demand planning which allowed fashion companies to be able to focus more on trends and speed and avoid uncertainty in the production and manufacturing which formed the first frameworks of fast fashion (Swink, 2018).

The fast fashion industry has, along with its emergence, enabled a faster retail turnover because of the cheap fabrics, low salaries and worker exploitation in developing countries despite the

products having shorter life spans (Johansson, 2010). Furthermore, the industry is also impressive when it comes to using data feedback loops to ensure that the correct volume of clothes is offered to meet customer demand and consequently avoid stock-outs or having to face margin crucifying discounts on the products (Russell, 2019). The fast fashion process is characterized by rapid prototyping, efficient logistics, larger collections with smaller batches as well as “floor-ready” merchandise at the stores (Swink, 2018). Such processes encourage the disposal of products as a study has shown that despite the amount of clothing consumers buy, they discard them after a few wears which signals a clear excessive purchasing pattern (Knosková, 2019).

Following the emergence of fast fashion, many fast fashion companies started facing major problems early on, mainly with labour conditions throughout their supply chains including child labour, health and safety risks of workers as well as low wages (Remy et al., 2016). Other issues that have challenged the fast fashion industry are polyester pollution which is having a big environmental impact as well as the increase in excess inventory and waste (Oshri, 2019).

2.1.1 Speed of Fast Fashion

As mentioned before, there exists a constant quest for shorter lead times within the fast fashion industry with companies constantly finding ways to increase the speed of their production. One major negative impact the speed of fast fashion is having is the clear decrease in the diversity of styles and the overall quality of manufacturing for companies within the industry (Johansson, 2010). Ultimately, the innovation of fast fashion has been outbalanced by automatization within the production process resulting in homogenized fashion design mainly due to the high pressure the fashion designers are experiencing since they simply have no time to be creative (Ibid).

Even though much is put into the increased speed the industry is experiencing, these fast fashion garments are no quicker to make or consume than any other garment since it takes the same amount of time to grow them regardless of how speedy the design-to-retail process is. “Fast” in terms of today’s fast fashion industry is ultimately describing the economic speed, according to Fletcher (Johansson, 2010). In order for the top fast fashion chains to catch popular fashion trends, they are speeding up their supply chain with a turnaround time that has dropped to as little as three months. To put this in perspective, traditional models for an average fashion company from design conception until their goods arrive at the physical stores require 15 months and nine months to reorder goods that sold out (Sherman, 2016).

The combination of speed and fashion deal with many aspects such as behaviour, how appropriately speed fits with fashion, the procedure of involving industry and consumers, how long materials last, how consumers launder and take care of their garments and for how long (Johansson, 2010). These aspects should be analyzed to decrease the negative impacts of speed in fast fashion. Speed highlights two different aspects of fashion, one being the faster layer of fashion such as how the industry deals with latest trends, change and what fashion symbolizes. The other aspect is the slower layer of fashion such as how to be more resourceful with garments as well as how to optimize processes with good quality (Ibid).

The CEO of Foot Locker, Dick Johnson, said in the company's second-quarter conference call of 2017 that the speed of fast fashion is moving at a pace that is too much for the industry to be able to keep up with as a result of a shift in consumer behaviour and spending patterns where a key driver in this is mobile technology but also social media in general (Ryan, 2017). Some retailers have also admitted that they are not able to catch up with the increased pace within the already intense pace within the fast fashion industry. According to Johnson, another very important factor for the increased speed within the fast fashion industry is the constant access to new influences, trends, information and ideas in combination with the consumers' shorter attention span which results in them getting bored with a style at a much faster rate (Ibid).

2.1.2 The Negative Impact of Fast Fashion

In this section, the negative impact of fast fashion is presented and explained through different perspectives. By highlighting these negative impacts, a better understanding is achieved as to which necessary steps are needed to minimize or fully avoid these unwanted impacts. Moreover, understanding the biggest issues facing fast fashion helps in reaching new promising technologies as well as new solutions such as more efficient processes. The negative impact of fast fashion is presented in three perspectives; environmental-, social- and economic perspectives.

2.1.2.1 Environmental Impact

Since fast fashion, in essence, is inexpensive and widely available it has come with several different negative global environmental externalities. One major environmental impact is the increased demand (and thus growth) of cotton and polyester given that approximately 90% of all clothing sold in the US is made either from cotton or polyester (Bick et al., 2018). Both garments are heavily associated with significant environmental impacts within both the production and manufacturing processes because cotton requires large amounts of water and pesticides to grow while unnatural amounts of oil will be required to produce polyester since it is derived from oil (Ibid).

Another major environmental impact is the release of untreated dyes into local water sources causing heavy metals and other toxicants to be released that can have a significant health impact on animals and other residents living nearby (Bick et al., 2018). More specifically, the fast fashion industry's synthetic dye processes cause the thick and ink-like water to become a toxic soup of chemicals that filters into (and ultimately pollutes) the water systems of the planet (Ranson, 2020). According to The World Bank Group, 17-20% of all water pollution comes from the textile dyeing treatment solely and an astonishing 200 tonnes of water is required to dye 1 tonne of fabric. To put it all in perspective, producing 1 tonne of fabric does not even account for 0.5% of the estimated 80 billion garments that the fashion industry manufactures in a year (Flood, 2019). A major issue with water returning to nature as toxic waste is that the disposal of wastewater very rarely is regulated or adhered to (Ranson, 2020). This results in big brands within the fast fashion industry (such as H&M and Zara), as well as the factory owners, do not have to be accountable for these actions which ultimately leads to little to no change (Ibid).

A third major environmental impact is the millions of tons of textile waste that end up in landfills instead of being either recycled or reused as a result of the increased consumption pattern from consumers, demonstrating evident excessive consumption (Johansson, 2010). As stated earlier in this paper, approximately 50% of fast fashion items are disposed of within one year after the purchase is made and nearly 3.8 billion pounds of clothing ends up in landfills as solid waste only in the US. However, fashion waste does not primarily end up in landfills as it rather sits unused in consumers' wardrobes, study shows (Ibid).

A fourth major environmental impact can be seen by having to use and occupy plenty of dumping sites to store waste and garbage which after the burning process of unsold clothes results in carbon dioxide being released into the atmosphere (Siegle, 2018). In total, the fast fashion industry emits an estimate of 1.2 billion tons of CO₂ per year. The big brand retailer H&M was in March of 2018 alone reported having \$4.3 billion worth of unsold clothes. According to a study conducted by IUCN, between 0.6-1.7 million tons of microplastic fibres end up in the ocean every year as a result of the manufacturing processes within the fast fashion industry (Omelich, 2020).

2.1.2.2 Social Impact

One of the processes in the fast fashion supply chain is the garment supply which employs approximately 40 million workers globally. Out of those employed with producing the world's clothing, 90% are from LMICs such as Bangladesh. As a result of the LMICs having poor

organizational management as well as political infrastructure, needed occupational and safety standards are not implemented in these countries (Bick et al., 2018). As a consequence of having these standards absent some negative social impacts of fast fashion is evident.

One major social impact is the workers' poor working conditions which in part is due to the manufacturing facilities experience of poor ventilation caused by cotton dust and synthetic air particles which leads to workers facing serious respiratory hazards as well as musculoskeletal hazards caused by repetitive motion tasks (Bick et al., 2018). Another sign of the workers' poor conditions is (predominantly in developing countries) the risk of factory collapse with one memorable industrial disaster being the 1911 Triangle Shirtwaist Factory fire and a very recent one being the 2013 Rana Plaza Factory collapse which killed 1134 Bangladeshi workers (Ibid).

The third sign of workers' poor conditions is the effects of environmental problems for those workers living close by the manufacturing facilities which again is especially applicable to LMICs due to their lack of support, policy and resources to have access to the necessary tools to create a safeguard. More specifically, the environmental impact of toxic water caused by synthetic dye processes put local citizens' health at risk (Bick et al., 2018). Lastly, the fast fashion industry uses 8,000 different synthetic chemicals in their production with many of these chemicals known to cause serious illnesses such as cancer and lung disease which have been reported numerous times in the LMICs (Omelich, 2020).

Another major social impact is the many instances in which violence and extremities are daily occurrences for many workers in the LMICs (Hobson, 2013). In some cases, there is evidence of workers being forced to work and extreme child labour existing especially in countries such as Bangladesh, Brazil, China, Indonesia and Vietnam (Omelich, 2020). More specifically, these workers (mainly young women) have been abused and even locked in their workplaces which is very reminiscent of prison cells (Hobson, 2013). Sexual harassment and verbal abuse is not too uncommon either and leads to the workers often working in a state of fear and uncertainty. Furthermore, many of these cases go uninvestigated as the owners of these facilities have the power to prevent such inspections of their facilities from ever happening (Mikolajczak, 2019).

A third major social impact is the workers' extremely low and unlivable wages which is very common within the retail industry as a whole (Omelich, 2020). In many of the developing countries, the legal minimum wages are not even enough to live on. The reason for that is that there exists a large low-skilled labour supply in such markets, however with less formal opportunities which results in the workers having much less bargaining power regarding the

wages (Velychko, 2019). To put the workers' unlivable wages into perspective, the company Ali Enterprises which had a factory fire incident in 2012, employed between 1200-1500 workers with a market capitalization of \$10 million and \$50 million and saw their workers earn between \$52-\$104 a month (Hobson, 2013).

2.1.2.3 Economic Impact

The fast fashion industry is an industry with a significant impact on both environmentally and socially as described in the earlier sections. However, the countless health hazards that the workers, as well as the average citizen, is exposed to results in substantial global health costs as a direct correlation to the production of cheap clothes. Moreover, the environmental cost involved in the global textile manufacturing is widespread as costs associated with dealing with polluted water, the unnatural amount of oil needed to produce polyester as well as the cost of dealing with the massive landfills caused by millions of tons of waste (Bick et al., 2018). There also exists an indirect cost with the effects of emitting 1.2 billion tons of CO₂ per year which is a significant cost for the industry (Omelich, 2020). Notably, the \$4.3 billion worth of unsold clothes that H&M reported in March of 2018 is another example of the costs within fast fashion as the big players in the industry report much larger numbers annually of unsold clothes that eventually end up in landfills (Siegle, 2018).

Last year, projections were made that the apparel industry is expected to reach \$1.65 trillion globally in 2020 and that the estimated growth in the apparel industry is growing by 4.5% every year (Starck, 2019). There are approximately 52 micro seasons within the fast fashion industry with new collections weekly compared to how it looked prior to fast fashion; one collection per each of the four seasons. As a result, the lifetime of each clothing item has decreased significantly where the cost of the extreme excessive purchasing behaviour has increased, despite costs being down in terms of the overall cheapness of clothing (Ibid).

In order to lower the costs associated with the shortened lifetime of each clothing item, a concept called circular economy has been introduced to the fast fashion industry with an attempt to reuse garments to prolong their life and thus make significant improvements to the damage that is being done on an environmental level (Starck, 2019). The circular economy is based on three main principles; design out waste and pollution, remaining products and material in use and regenerate natural systems. Unfortunately, despite circular economy sounding promising, it suffers from huge bottlenecks with the biggest being that (although the efforts put in from actors of the circular economy) this economy will in no way possibly catch up to the rapid growth of the fast fashion industry (Ellen MacArthur Foundation, 2015).

A growing middle-class population within the last 15 years has caused the clothing production to double across the world in combination with an increased per capita sales in developed countries according to a study conducted by the Ellen MacArthur Foundation (Drew et al., 2019). Furthermore, a projected GDP increase of 400% in world GDP by 2050 will have a direct impact on fast fashion as it means even greater demand for clothing as both are correlated. One major promising step in bettering the economic impact of the fast fashion industry is to address the major problems with the negative environmental- and social impacts (which if addressed) would benefit the world economy with \$192 billion by 2030. It has been concluded that the total annual value of discarding the clothes prematurely as a result of fast fashion has eclipsed \$400 billion (Ibid).

2.1.3 Consumer Behaviour within Fast Fashion

According to a study conducted by Wang, there are three basic psychological processes which make up for one essential category of the decision-making for consumers within the fast fashion industry; information processing, learning and attitude- and behaviour change (Wang, 2010). The study continues to imply that 67% of consumers within fast fashion have some expectations before they go to purchase in stores while 33% do not have a clue what they are going to purchase in advance. Commonly enough, those who have expectations when going out to purchase run a great probability of buying some additional clothes that they did not have an interest in until they see them first-hand (Ibid). The majority of the consumers of fast fashion have an age group between 15-29 years of age with an almost weekly visit to the top fast fashion chains looking for the latest styles and trends. A big reason for these young consumers' ability to make frequent purchases in fast fashion stores is due to their significant disposable income and in some cases their access and availability to credit cards (Gupta et al., 2018).

A significant factor playing in the behaviour of consumers within the fast fashion industry is the postmodern phenomenon called "temporary identity" in which the individual is unable to keep his/her identity shape or maintain the course of his/her identity shape for an extended period because of the fast paced lifestyle adapted by the individual to keep up with the latest trends the industry has to offer. In short, the fast fashion industry has resulted in many consumers experiencing this phenomenon of temporary identity because of the constant change within themselves (Gupta et al., 2018). One process of enhancing consumer intentions to purchase is the attributes contributed towards the overall atmosphere of the fast fashion stores such as within the stores such as store design, layout, fitting, decorations as well as the overall quality of

the in-store communications with the retailer since 50% of the consumers of a survey believe it influences their purchase decision (Wang, 2010).

Gupta et al. (2018) state that the strategy of fast fashion companies when implementing manipulated scarcity of their items causes a “must-have” mentality (perceived scarcity) within consumers which is predominantly seen among young female consumers. Research suggests that scarcity messages among products within fast fashion chains have a positive effect on the consumers’ evaluation of and attitude towards such products. Furthermore, the findings concluded by the research also suggests that consumers that apply the perceived scarcity conditions also tend to behave in manners such as demonstrating a great urgency to buy that results in consumers behaving more irregularly and competitively that ultimately leads to in-store hoarding as well as in-store hiding of clothing items (Gupta et al., 2016).

According to the consumer behaviour study conducted in 2010, it is concluded that 46% of the consumers within fast fashion do not care about the brand, 29% have a brand preference and the remaining 25% are loyal customers of some brand (Wang, 2010). According to the same study, the top three reasons for purchasing clothes off of fast fashion retailers are because they are comfortable, “good-looking” as well as the cheapness while the easy-to-wear aspect and being “in latest trend” were not among the top reasons (Ibid).

According to Stein (2019), there exists some evidence for a slight shift in consumer behaviour for consumers of all ages as well as demographics regarding an increased interest and investment towards fewer, but higher-quality basic clothing items that easily can be mixed and matched as well as re-worn with some thoughtful additions of vintage accessories. In essence, consumer behaviour is notably making a change towards what’s considered stylish and moving away from the mainstream wave of what’s trending.

2.1.4 Views on Fast Fashion

One of the more affirmed views on fast fashion is the idea that the hunger for new clothes needs to be satisfied immediately which is why fast fashion retailers within the industry keep on putting out the latest trends to satisfy the heavily pressuring and demanding consumers (The Guardian, 2020). However, to diminish or at least lower the urge to overconsume, consumers within fast fashion need to find a way to keep the pleasure of fashion open for all but at the same time stop promoting disposable clothes as desirable which is a common negative view on fast fashion. Several people view fast fashion as an industry that has benefitted massively from globalisation to mass-produce goods, however, by shifting the cost of production to detrimental

environmental- and social costs, it has given fast fashion a very bad reputation among the society as a whole and is today viewed as an industry that needs a lot of reform (Ibid).

There are a group of people who view fast fashion as an industry they would not be in full support of within sustainability efforts because such initiatives would stand in the way of their enjoyment in purchasing large quantities of trendy clothing as such initiatives would help reduce the throw away of unwanted apparel by encouraging to build long-lasting wardrobes. In contrast, that group of people would engage and be supportive of sustainability efforts within other industries, specifically not when it is applied to fashion products (Simpson, 2019).

Roxanne, a Canadian student active within fast fashion, views the limited edition of clothing as satisfying since it allows the consumers to be unique and thus find who they truly are in a sense as they create and recreate their wardrobes (Joy et al., 2012).

Many of the younger crowd within fast fashion have the strong pragmatic view of; why spend money on something that will last several months at most while there instead is the possibility of purchasing several items that are cheaper and allows for a much wider variety? This is why these groups of people ultimately prefer fast fashion over slow fashion. Many people view fast fashion as an industry where young consumers exhibit relatively little guilt as their attitudes towards sustainability and their fashion choices suggest little discrepancy (Ibid). Moreover, young women consumers who are fashion conscious are viewed as the customer segment that fast fashion will continue to remain strong for (Simpson, 2019).

2.1.5 Slow Fashion – a response to Fast Fashion

Three rising terms which have gained increased media attention in recent years as a response to the current fast fashion system are eco fashion, ethical fashion and sustainable fashion (Pookulangara et al., 2013). Although there has been an increase in awareness of the more sustainable fashion industry, not much has changed because of the difficulties associated with maintaining low prices on sustainable products in an industry that is constantly changing. As a result of this, a new movement has emerged which counteracts the increasing demand in fast fashion – the so-called “slow fashion” movement (Ibid).

The term originates from Dr Kate Fletcher in 2007, where she compares the eco/ethical/sustainable fashion industry to the Slow Food movement and linking the similarities as it comes to processes and productions. Slow fashion is the process that challenges the direction of the current textile and apparel industry where it works to increase the diligence choices to combat the issues associated with consumption from retailers to consumers

(Pookulangara et al, 2013). The slow fashion industry has made continuous efforts in a transition to shed light on local farmers and to encourage local and seasonal products (Cataldi et al., 2010).

The slow fashion movement is a socially conscious movement that strives to challenge the current movement by shifting the mindset of the consumers to start valuing quality over quantity. The movement advocates for slow production and consumption where it does not exploit natural and human resources to accelerate the manufacturing speed and uses slow consumption to create longer product lifespan (Jung et al., 2014). The slow fashion industry has made continuous efforts in a transition to shed light on local farmers and to encourage local and seasonal products (Cataldi et al., 2010).

The term “slow fashion” is not a reference to time in which the textile and apparel supply chain is slowed down, but rather more comprehensive importance on generating a sustainable process, which involves design planning and production sourcing (Pookulangara et al., 2013). It entails the importance of applying focus and taking time to ensure quality products which give each specific product value, thus making it a revolutionary process in the contemporary world (Cataldi et al., 2010). Fletcher argues that the idea is not to literally “slow” down the fashion industry but explore the fashion industry in a more sustainable way (Pookulangara et al., 2013).

The difference between slow fashion and sustainable fashion is vague. A reason for this might be due to the limited academic understanding of slow fashion as it is a recently adapted term. Slow fashion can be seen as a broader concept than sustainable fashion because it has keywords such as equity, authenticity, functionality and exclusivity associated with it (Jung et al., 2014).

2.2 Sustainable Fashion

Sustainable fashion emerged from the slow fashion movement in the 1960s as a response to the clothing manufacturers and its negative impact on the environment. This led to people demanding change and that sustainability would be prioritized. Sustainable fashion takes into consideration the social, natural and economic “price” associated with fashion production (Henninger et al., 2016).

2.2.1 Transitioning from Fast to Sustainable Fashion

The retailing industry, or more specifically apparel retailing industry, has in the last years managed to grow significantly where a transition to a pull system (production of goods is

initiated by the consumer) from initially a push system (producing goods based on a prediction of market expectations) has been made possible. In order to deal with deadlines related to customer demands, concepts such as Quick Response (QR) and Just-in-Time (JIT) delivery has been introduced (Pookulangara et al., 2013).

One of the big challenges connected to the transition from fast to sustainable fashion is to acquire additional textiles which are sustainable. Among them is the organic cotton which aims to minimize the environmental impact of cotton production by removing harmful pesticides and other chemicals originating from the production process (Rauturier, 2019).

Another big challenge is linked to the importance of educating the consumers about the process that it took to create every single apparel. The idea is to incorporate more sustainable thinking in every step of the process concerning a sustainable, ethical and environmental perspective. This is done to maintain a production process which highlights quality, experienced labour and increased knowledge for consumers to be more conscious in the selection of sustainable products. Transparency is a key element of slow fashion and is something that consumers today are looking for when shopping (Ibid).

There are many driving contributors responsible for the continuous development of the sustainable fashion industry, where one of them is the Corporate Social Responsibility (CSR) aimed to go beyond compliances and engage to advance social good which works beyond the companies' best interests (McWilliams et al., 2006). CSR is directly linked to a firm's accountability which has increased the necessity for transparency throughout the textile and apparel industry's supply chain (McGuire et al., 1988). CSR is a substantial part of corporate decision making, the connection between ethical and social policies as well as its financial performance. McGuire et al. (1988) argue that there are various views on whether or not there is a connection between a firm's social responsibility and its financial performance. He found that one view is that there is a trade-off between a firm's' social responsibility and its financial performance where costs linked to a firm's' social contributions lead to financial disadvantages in comparison to firms' that are generally less responsible. Furthermore, another contrasting view is that the explicit costs linked to a firm's' social responsibility are very limited and that CSR is not only important for the environment but also vital for business success in regard to productivity and employee morale (Ibid).

A transition from fast to sustainable fashion industry will be a significant challenge because of the fast fashion brands such as H&M, Zara and Uniqlo, all of which faces big issues in CSR in

regard to impoverished working conditions and salaries below minimum wage, which has become evident that there need to be changes within the fast fashion supply chain (Perry, 2012). As the fashion industry realized their responsibility, it formed the Sustainable Apparel Coalition (SAC) which is a global alliance of retailers, brands, suppliers, advocacy groups, labour unions and academics with the main focus of building The Higg Index (Danziger, 2020). To recognize the impacts made both environmentally and socially as well as the labour impacts when it comes to making and selling products, The Higgs Index is implemented where it works as a standardized supply chain measurement tool (Marias, 2016).

2.2.2 Contributions and Progress in Sustainable Fashion

Several initiatives have been made within the sustainable fashion movement as a direct response to the fast fashion industry. One example is the Centre for Sustainable Fashion (UK) which challenges the existing conditions of the current fashion industry, mainly through reports, research and a Master's program on "Fashion and the Environment" which serves the purpose to help motivate young fashion designer and to help give them the correct qualifications (Cataldi et al., 2010).

Furthermore, there are various newly launched online networks such as Clean & Unique (Netherlands), Fashion Takes Action (Canada), Re-dress (Ireland) and Social Alteration (Austria) who all work towards linking people and corporations that want to take part in creating and maintaining a sustainable fashion industry. Moreover, fashion designers worldwide, such as Alexandre Herchcovitch, Allison Parris and Emily Katz are amongst others some of the designers who have started taking on a slow approach where they reuse material to hinder them from landfill and also invest in projects which all helps to contribute to communities becoming stronger (Cataldi et al., 2010).

Although there have been some contributions within the sustainable fashion industry to contrast the fast fashion industry, a new research report from 2019, The Pulse of The Fashion Industry report, conducted by Global Fashion Agenda, Boston Consulting Group (BCG) and Sustainable Apparel Coalition has shown that the sustainable fashion industry growth rate has slowed down by a third in 2018. The study reveals that the Pulse Score increased with four points, going from 38 points to 42 points out of 100 points compared to the previous year where the increase in Pulse Score was six points (Pinnock, 2019). Furthermore, at this given growth rate, the fashion industry is expected to be worth \$3.3 trillion where it will increase by 63% by 2030, moving to 102 million ton of clothing which is an increase by 40 million tons of clothing from 2019 (Segran, 2019). If nothing is done to alter this behaviour, climate-related

catastrophe can be expected to hit sometime between 2040 and 2050. Henceforth, coastal regions will be flooded and food will be limited – all according to the United Nations' predictions (Davenport, 2018).

Since the fashion industry's growth rate is slowing down while the overall industry is continuously growing by 4-5% each year, shows that there is an issue with the relation between the fashion industry and the time it takes for them to transition and adapt to become more sustainable. This is problematic since many big companies within the fashion industry, including Adidas, Nike, H&M and GAP, who all want to highlight their efforts to the public by publishing on their webpage their continuous efforts when in reality, the fashion industry is far from sustainable. The report by Global Fashion Agenda found that around 40% of the fashion companies have not even begun to set up targets or even start to think about ways to improve their supply chains. Furthermore, the report found that the other 60% comes from smaller companies or companies with less than \$100 million in revenue per year (Segran, 2019).

Moreover, the report indicates that it is important to apply pressure from several different directions to obtain the change that is required. For example, in order to pressure brands to comply with high standards, the government and policymakers need to create policies. The media must shed more light on the issues within the fashion industry and investors must invest more in companies with long-term missions (Segran, 2019). However, that is not all that is required as there still needs to be efforts made from the consumers as well, including pressuring brands to become more sustainable, since recent evidence suggests that consumer pressure is partially a reason for the increase in brands working with sustainability. Half of all young consumers tend to switch brands faster based on if the brand is reflecting on these issues which leads to additional pressure for the brands and it is showing (Ibid).

2.3 Supply Chain within Fashion Industry

Supply chain within the fashion industry can be defined as a set of three or more entities (fashion retailers or individuals) that pass materials forward to develop and add value to a fashion product and are ultimately involved in the upstream and downstream flows of fashion products, fashion services, finances or information from a source to a customer (DeWitt et al., 2001). Downstream integration refers to the integration with distribution centres and retail locations where the firm's products are sold while upstream integration refers to the integration with the customers of the firm, in other words, controlling subsidiaries that produce some part of their production process (e.g. a yarn manufacturer integrating with its suppliers) (Maleki et al., 2013). Most of the time, the firms involved in a fashion supply chain are independent and engaged in the manufacturing process starting in its original state which ultimately results in the final product reaching the end consumer in the supply chain.

Furthermore, each of these independent actors within the supply chain has its suppliers and producers upstream while they have near-the-end-customers downstream within their supply chain (DeWitt et al., 2001). The network of a supply chain includes a variety of different activities, people, entities, information and resources with the main reason for the existence of a supply chain being so that they can reduce their costs and remain competitive in a business landscape (Kenton, 2020). The overall steps included within a fashion supply chain network is moving and transforming raw materials into finished products, transporting the products and finally distributing them to the end-consumers. The independent firms acting in a supply chain are entities such as fashion producers, warehouses, shipping firms, distribution companies and fashion retailers (Ibid).

Business management has, as a result of significant paradigm shifts, led to businesses competing as supply chains instead of earlier competing solely as autonomous entities (e.g. brand versus brand). As a result, firms have shifted their focus into managing multiple relationships across their supply chains to gain competitive advantages and have depended heavily on their ability to integrate the firm's network of business relationships with other members of their supply chain to succeed. As a result of this, companies are increasingly implementing and referring to this as Supply Chain Management (SCM) which has risen to prominence in the last few decades (Lambert et al., 2000). Thus, SCM can be defined as managing key business processes, from supplying raw materials to the end product and it focuses primarily on how companies take advantage of the technology and process of the supplier to gain an increased competitive advantage through trust-building and information exchange (Croom et al., 2000).

The cooperation within different companies across a supply chain within the fashion industry include sharing relevant information to all members about sales development, lead times, inventory requirements, supply and distribution channels as well as production schedules. Smooth and effective command, as well as control over the entire supply chain process (which generally are linear), requires a flexible information system that is required in place (Johansson, 2010). If one link breaks down within a supply chain, it can affect the rest of the members within that chain which would result in costly consequences (Kenton, 2020).

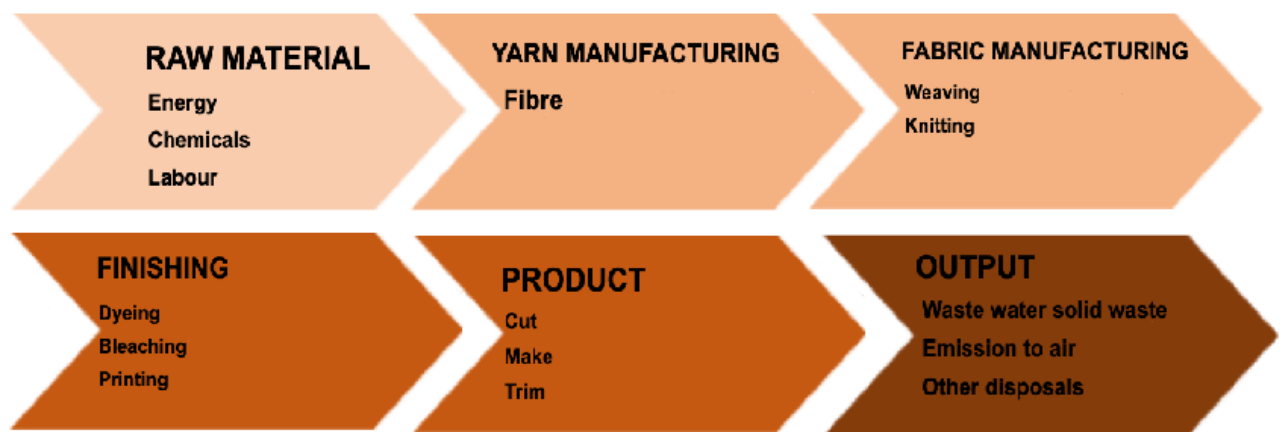


Figure 1. An illustration of important processes within a fashion supply chain

Even though there are significant landfills created as a result of the disposal of textile within the fashion industry (e.g. nearly 3.8 billion pounds in landfill as solid waste as a result of the supply chain of fast fashion only in the US as mentioned earlier), they are not as big of a problem as the upstream in the supply chain of the fashion industry which have shown very significant negative environmental impacts (Johansson, 2010). The upstream supply chain of the fashion industry includes harvesting raw material, yarn manufacturing, spinning, knitting, finishing, garment assembly, shipping among other processes. In the process of converting the harvested raw material, the first step in the fashion supply chain, into the finished fabric and ultimately the final product (the last step of the fashion supply chain before the disposal occurs) is very complicated and long as it draws on heavy water, energy and labour. Although the results of this can be observed in the form of long working hours, forced overtime as well as poor working conditions for the employees, this supply chain has also allowed generating employment within LMIC which is important to reduce poverty (Ibid).

2.3.1 Supply Chain within Fast Fashion Industry

In this section, the supply chain within the fast fashion industry is explored in depth. The characteristics of a typical supply chain within fast fashion retailers are presented in more detail. Some common characteristics include shorter lead times from designer to manufacturer, a replenishment strategy as well as a vertical integration.

2.3.1.1 Vertical Integration

The biggest fast fashion retailers are working with short supply chains where they are deciding and managing over design, manufacturing and delivery. Vertical integration occurs within the fast fashion industry as it is seen as a vital part in some of the biggest fast fashion retailers' success. More specifically, vertical integration is the arrangement in which a company owns or controls more than one link in the supply chain (e.g. fashion suppliers, distributors or fashion retail locations in the case of fast fashion). Ultimately, vertical integration benefits fashion companies through the allowance of controlling the process, increasing efficiencies as well as reducing costs (Isaacs, 2019). Fast fashion companies applying vertical integration have shorter turnaround times which leads to the probability of catching popular fashion trends faster increases. Furthermore, with vertical integration in place, these companies are significantly more visible for consumers with increased flexibility in their abilities to communicate between the different links within the supply chain which would increase product knowledge and marketability and thus lead to an increased market control over the competitors. Moreover, they could inherit things such as permits, copyrights and emerging technologies which would give them another edge over the competitors (Sraders, 2018).

As mentioned earlier in this paper, some of the leading fast fashion firms in the world combine design and sales while outsourcing their manufacturing link of the supply chain to LMIC because of the low wages they are allowed to give the employees which ultimately reduces the cost of the production and thus avoid the strategy of vertical integration. In their quest of finding cheaper labour, leading retailers use networks of subcontractors to locate links in the supply chain that may buy, dye, embroider and sew fabric, all links in different countries of the world (Crofton et al., 2007). However, a negative consequence of this strategy within the fast fashion supply chain of outsourcing to multiple different locations in the world is that this process can significantly stretch the design-to-retail cycle to as long as eight months which is much slower than the three months in turnaround time found in many fast fashion retailers. This is visible for retailers such as Gap and Abercrombie & Fitch (Ibid). Inditex deviates from fast fashion industry norms by owning nearly the entire supply chain where both upstream and downstream

integration was applied with a total of eight different brands. This high vertical integration of Inditex has given them numerous significant competitive advantages such as frequent replenishment of stores, differentiated products, shorter lead times and planning flexibility over their competitors (Maleki et al., 2013).

2.3.2 Sustainability Efforts towards Fast Fashion Supply Chains

As a result of the significant environmental-, social- and economic problems (with social problems being displayed in developing countries) fast fashion companies sense the pressure to increasingly focus on sustainability efforts to ensure more efficient supply chains in the fast fashion industry within these three problematic dimensions (Turker et al., 2014). A major advantage for fast fashion companies deciding to fully integrate environmental-, social- and economic practices to become more sustainable within their supply chains is that they see themselves becoming very competitive in the market because of their strategies becoming more difficult to replicate as a result of these companies developing specific assets to support sustainability along their entire supply chain (Macchion et al., 2017).

2.3.2.1 Sustainable Manufacturing

Sustainable manufacturing is a concept that is being enforced within the fast fashion industry and became of crucial importance mainly as a result of the frequent fire hazards seen in the garment factories in Bangladesh, mainly the 2013 Bangladesh fire disaster in which improper conditions in combination with no protection against such types of events led to the death of over 1,000 employees. Sustainable manufacturing is being enforced through policies which impose clear human rights and environmental protection (Popescu, 2015). Due to the depletion of natural resources and quick filling of landfills, the Earth is not capable of supporting the level of manufacturing and disposal of apparel of today. Furthermore, more complex items, such as shoes or winter jackets, risk being exempt from recycling or biodegradation as such items could be in landfills for hundreds of years once thrown away. In order to strengthen their brand name and differentiate their products, many fast fashion retailers have adopted sustainable practices such as ISO 14000 standard in their supply chain, indicating that they have enacted sustainably within their manufacturing processes (Shen, 2014).

Another effort towards sustainable manufacturing is the new technology known as “3D printing” which uses digital design through CAD (Computer-aided design) to fuse materials layer by layer through a technique called Selective Laser Sintering (SLS) until the object is formed. A major advantage of 3D printing is the ability to cut out many of the labour-intensive as well as chemically harmful processes in conventional fast fashion manufacturing. Moreover,

through recycled polyethylene-based material, the materials needed for the 3D printer can be obtained and 3D printers can be run through solar energy (Swink, 2018).

2.3.2.2 Eco-material Preparation

Polyester production, in addition to other various synthetic fabrics, where the processes are considered energy-intensive, needs a substantial amount of crude oil, the release of emissions and volatile organic compounds, including acid gases such as hydrogen chloride (Swink, 2018). Eco-material production is the concept in which the organic fabrics are produced through less water consumption and less harmful chemicals with an important process of both reusing and recycling materials (Popescu, 2015). According to Swink (2018), Scaturro argues that even though eco-material such as organic cotton (which is becoming increasingly more desirable to consumers) cannot meet the world's demand for cotton better than conventional cotton could, the use of genetically modified fibres can increase the fibre yield without creating damaging byproducts of synthetic fibres which are a great sign for producing sustainable fibres.

2.3.2.3 Green Distribution

Green distribution is seen as a very major challenge to implement within the fast fashion supply chain due to its quick response strategies with shorter lead times and complexity in terms of season cycles being significantly shorter than within traditional fashion. The crucial efforts within green distribution are the design of a more efficient transportation system and ultimately minimize and gain control over the CO₂ emissions in distribution (Popescu, 2015). Cleaner and more efficient modes of transportation are used more within the supply chain of the fast fashion industry such as ferries and trains to ship products via sea or rail (Shen, 2014). According to the study conducted by Shen (2014), H&M built up an intelligent transportation system for direct shipments where intermediate warehouses were avoided which led to a decrease in volumes shipped through ocean and air by 40% and instead managed to increase the volume of products shipped by rail, which in turn ultimately vastly reduced the CO₂ emissions.

Smart mobility perspective is a concept that can enable and improve advances in environmental data collection and analysis where a collection of information from transport service providers and users are made as well as allowing a gain of better synchronization of the collected information between these two through IT-solutions. As a result, quality and environmental requirements within the distribution for these fast fashion retailers are met more easily (Popescu, 2015).

2.3.2.4 Ethical Consumers

As the interest in sustainability practices, as well as the sustainability brand of a company, is rapidly increasing among consumers within fast fashion, a trend is seen where more and more consumers are increasingly more willing to purchase eco-fashion products which result in an increase in loyalty among the consumers. Thus, for a fast fashion retailer to gain more ethical consumers, it is of importance to direct their marketing and branding focus on sustainable practices (Popescu, 2015). An idea by Wong and Chan (2012) is that the fast fashion consumers' ethical behaviour could increase by fast fashion retailers offering recycling services and recyclable products in their stores. Studies conducted show that consumers are as a result of the social impact of human rights violations within fast fashion manufacturing increasingly concerned about the social consequences of their purchases (Shen, 2014). In 2013, H&M launched a clothing conscious collection initiative worldwide where consumers could return old apparel in any brand and any condition and in return receive a 15% discount for their next purchase at H&M which resulted in consumers returning 3047 tons of used clothing (Ibid).

2.3.2.5 Reshoring vs. Offshoring

Reshoring (localized production) is a concept that is seen to require many conditions before being actualized while offshoring (sourcing the production and manufacturing to another country, usually an LMIC) is the common supply chain strategy for most of the fast fashion retailers of today. As trends get shorter in life within the fast fashion industry, there is some speculation regarding the possibility of considering reshoring as a substitute for offshoring within the supply chain. However, since this will become more expensive partly due to the demand for reasonable wages for the employees, this will only have some hope if consumers are willing to pay a higher price on products manufactured through reshoring (Swink, 2018).

Although the possibilities, research on reshoring is currently minimal as the reshoring implementation process is not understood in great detail and the relationship between reshoring, supply chain reconfiguration and environmental sustainability is relatively unexplored (Orzes et al., 2019). Motivations, implementation and impact of reshoring must all be evaluated in-depth before any judgement on the true possibilities of reshoring substituting the very established offshoring could take place.

2.4 Theoretical Framework

As more companies within the fashion industry become increasingly aware of their efforts towards a more efficient supply chain, a concept mentioned earlier in the report called SCM has risen to prominence within the last few decades. A frequently applied framework for fast fashion companies looking to become more sustainable within their supply chains is a concept called sustainable SCM (SSCM) which is examined in detail in this chapter.

The chosen theoretical framework called SSCM is used in order to conceptually map the current situation of sustainable supply chain management (SSCM) in the fast fashion industry. The purpose of this section is to build the theoretical basis to determine the sustainable attributes of a fast fashion supply chain which helps identify suitable sustainability efforts required for the industry. Furthermore, the chosen theoretical framework employed by Seuring et al., (2008), is used to conduct a thorough analysis on these sustainability efforts to measure the leniency of such practices.

2.4.1 Sustainable Supply Chain Management Framework

Sustainable Supply Chain Management (SSCM) is a set of managerial practices that include “the management of material, information and capital flows as well as cooperation among companies along the supply chain while taking goals from all three dimensions of sustainable development, i.e., economic, environmental and social, into account which are derived from customer and stakeholder requirements” (Seuring et al., 2008).

The SSCM framework is divided into three main parts. The first part is from an external perspective which identifies the triggers and incentives stimulating the focal company to adopt SSCM practices. These generally come from overall stakeholders, customers and especially the governments. The second part is from an internal aspect that looks into the supplier evaluation for risks and performances which identifies barriers for implementing sustainable supply chains, avoiding risks in the supply chain and improving the overall performance of suppliers. The third part is the SCM for sustainable products which applies SCM to all products that have or aim at an improved environmental- and social quality (Seuring et al., 2008).

2.4.1.1 Triggers and Incentives Stimulating a Company to Adopt SSCM Practices

Within recent years, SSCM has earned increased attention from both scholars and practitioners within fast fashion with new research efforts constantly being developed as the focus has radically shifted from corporate sustainability efforts towards specific layers of improvements

within the supply chain. The pressure exerted on firms such as a threat to their reputation, penalties and fear of business loss have all resulted in increased adoption of SSCM practices among these firms (Kumar et al., 2015). Thus, the heavy external pressures enforced by customers, competitors, non-governmental organizations (NGOs) as well as the government in the form of international- and local regulations is a motivating factor behind the adoption of sustainability practices among many firms (Turker et al., 2014). A second factor behind the adoption of sustainable practices by firms is to gain marketing and competitive advantages as well as increase their employee retention and make a significant improvement in their reputation. However, in order for companies to gain the advantages of both factors they have to overcome a couple of barriers, including certain economic, operation-specific and technological barriers (Kumar et al., 2015).

There are a couple of triggers that stimulate a company to adopt SSCM practices such as new market opportunities, increased customer satisfaction as well as premium pricing among others. Furthermore, other triggers for the adoption of SSCM practices are the recognized benefits of competitive and marketing advantages, decreased pressure from external agencies as well as an improved corporate image (Kumar et al., 2015).

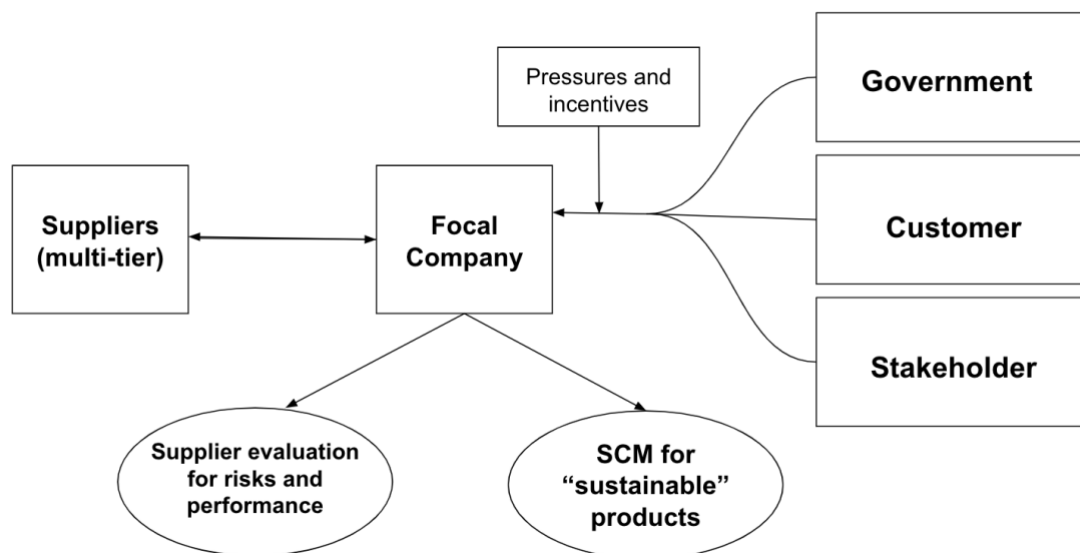


Figure 2. Triggers and incentives stimulating focal companies to adopt SSCM practices (Seuring et al., 2008)

2.4.1.2 Supplier Evaluation for Risks and Performance

In this second part of the conceptual framework by Seuring and Müller (2008), a supplier assessment plan is constructed where auditing, monitoring and evaluation takes place. Three aspects were identified as barriers for implementing sustainable supply chains; higher costs, coordination effort and complexity as well as deficient or missing communication in the supply

chain. An important measure for supplier self-evaluation to determine how they deal and interact with environmental- and social issues include implementing environmental- and social standards which set minimum requirements. As a direct response to the triggers and incentives of SSCM practices, companies (especially within the fashion industry) have introduced criteria for suppliers within their supply chain where these suppliers must adhere to performing according to guidelines set by environmental standards (e.g. ISO 14001) and social standards (e.g. SA 8000) (Seuring et al., 2008). Important criteria for measuring improvements in supplier performance include speed, quality, flexibility, dependability and costs while the possible implications and risks of suppliers are evaluated according to the triple bottom line approach (Turker et al., 2014).

2.4.1.3 SCM for Sustainable Products

In the third part of the conceptual framework by Seuring and Müller (2008), supply chain management for sustainable products is analyzed with the goals to satisfy customers and gain a competitive advantage in the market. Sustainable products can be described as “products that have or aim at an improved environmental- and social quality”. A widely used and important tool to achieve SCM for sustainable products is the life cycle assessment. The establishment of the life-cycle management has led to the cooperation with suppliers to increase in importance where the cooperation extends further than just to first-tier suppliers. The entire supply chain from raw materials to final customers has to be integrated to achieve SCM for sustainable products. Moreover, it demands a variety of different minimum criteria from suppliers when designing or producing the product. Environmental criteria may include that the product is free of contaminants which can be tested. Another requirement for sustainable products to achieve SCM is the intense communication with suppliers while at the same time improving their sustainable practices (Turker et al., 2014). More specifically, because only a sustainable supply chain can deliver a sustainable product (Kumar et al., 2015).

3 Methodology

In this chapter, the methodology employed is discussed. Initially, the discussion presents the research design which explains how the methodology is designed and structured and the research process which breaks down the implementation of data collection methods before covering the analysis of data. More specifically, how the data was coded and analyzed is presented. Lastly, the research quality of data as well as the ethical consideration are addressed in detail.

3.1 Research Design

The research type for this research required a qualitative study approach composed of a combination of primary data, i.e. empirical data gathering such as semi-structured interviews with secondary data gathering such as peer-reviewed journals, articles and scientific reports from databases such as Science Direct, Research Gate and Web of Science included in an extensive literature review.

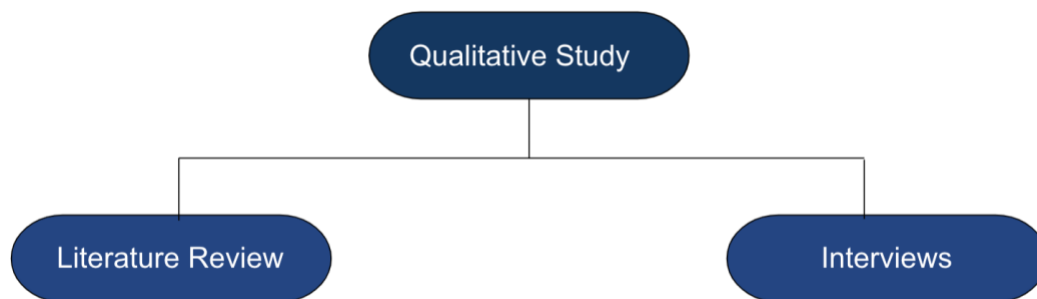


Figure 3. Illustration of a qualitative study

The research is conducted in order to seek to investigate problems through a critical examination and integrating findings from various articles. The selected articles are considered to be highly relevant, high-quality studies that address the adoption of SSCM practices into fast fashion. These articles are thus used to identify inconsistencies in a body of knowledge as well as solve the broader questions instead of finding answers to a single empirical study (Cronin et al., 2008). For this study, an inductive approach was considered appropriate since no hypothesis was set nor a clear claim for theory. Inductive research describes a study in which theory is developed from the observation of empirical reality in which individual observations move to statements of general patterns (Collis et al., 2014). In other words, an inductive research approach moves from the specific to the general. Moreover, the inductive approach was chosen due to the explorative design of the research.

In the qualitative research method chosen, the arguments found in the qualitative approach provide a nuanced perspective on the progress of the adoption of SSCM practices within the fast fashion industry and a basis to understand the dynamics, robustness and emergence of the open-ended research questions formulated (Dudovski, 2018). Furthermore, the qualitative approach also ensures that future studies are encouraged and developed in the right direction as research gaps could be identified in the existing literature which would help the researcher in defining or determining a specific relevant research question (Cronin et al., 2008). Thus, data collection primarily relies upon secondary data gathering from articles, journals and papers on the adoption of SSCM practices within fast fashion as well as the topic of fast fashion in a detailed and extensive sense to better understand the aspects of the industry. The empirical data gathering in the form of semi-structured interviews were adopted partly to act as a critique of the secondary data collected, but also as a way to gain new information and a new perspective.

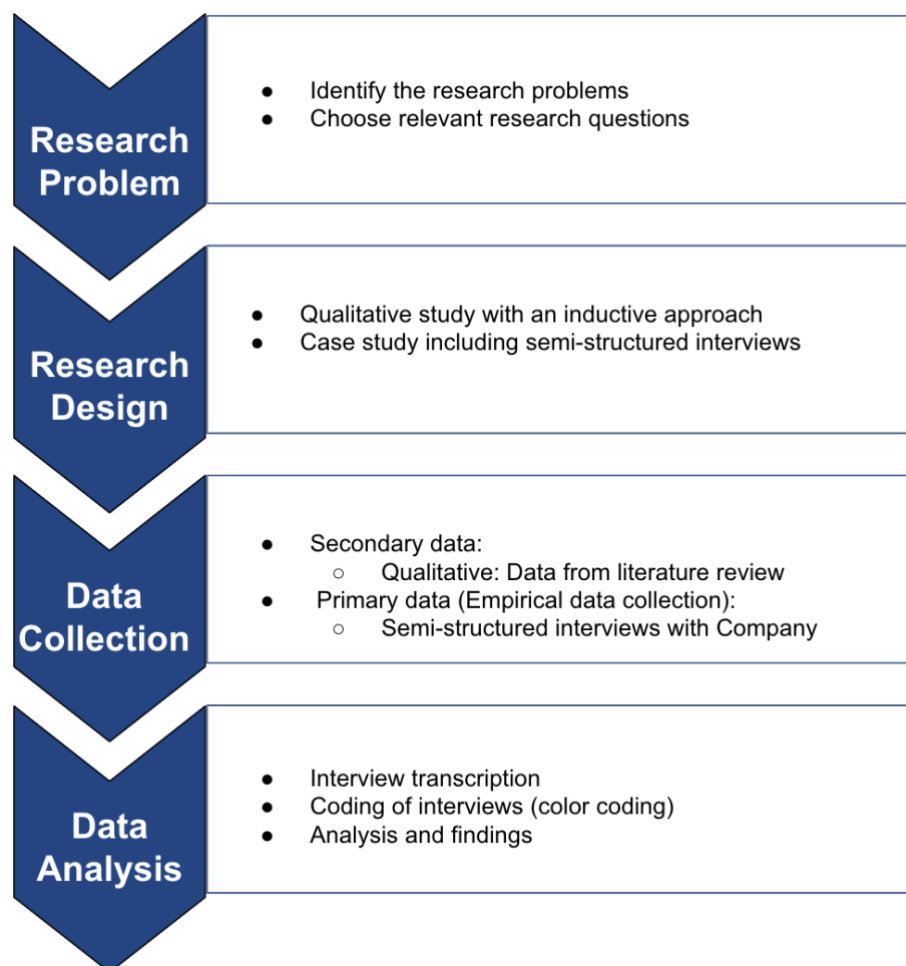


Figure 4. The design of the methodology process

Figure 4 illustrates a four-stage process the study conducted in the research which essentially is the design of the methodology process. The research problem for this study was identified through practical and theoretical problems aimed at expanding knowledge as well as reducing the difficulty within the area of knowledge. The research design includes a subtype of a descriptive case study with a clear purpose. Moreover, the data collection adopts qualitative secondary data sources in line with the primary data sources of semi-structured rounds of interviews to critique and complement findings from the approved papers and peer-reviewed journals. Lastly, data analysis will include colour coding to identify common categorizations of keywords and themes from the transcribed interviews and ultimately assist in depicting the conceptual framework and drawing a conclusion.

3.2 Research Process

This section about the research process discusses the selection process and data collection through peer-reviewed journals and interviews. This section provides an approach that is explanatory and which arrives at conclusions for data collection, result, analysis and discussions. The data collected was mostly constituted by the literature review while the interviews and surveys were employed to either support or oppose.

3.2.1 Literature Review

A literature review has been conducted to develop the research idea, incorporate relevant theoretical frameworks and help interpret the findings to reach a conclusion. The main objective was to broaden the scope of the information at the initial stage. However, the scope was narrowed down and more academic journals were used as the research got more focused and the topic on sustainability efforts towards fast fashion supply chains were explored in-depth.

Peer-reviewed journals, articles and scientific reports used for this research were all collected from databases such as Science Direct, Research Gate, Web of Science, DiVA, Semantic Scholar, Oxford Academic, Wiley Online Library, KTH Primo and Google Scholar.

In order to better understand how the fast fashion supply chains can become more sustainable, the following keywords were used in search of the selected databases:

- “Fast fashion industry” + “Sustainable” + “Supply chain” (24 results)
- “Fast fashion” + “Sustainable supply chain management” (15 results)
- “Fast fashion” + “CSR” (13 results)

- “Sustainable fashion” + “SSCM” (7 results)
- “Slow fashion” + “Supply chain” (21 results)
- “Fast fashion” + “Consumer perception” + “Impact” (22 results)
- “Slow fashion” + “Consumer perception” (10 results)

In order to find relevant articles, the search hits had to be filtered in a way that is up to date with the change within the fashion industry and the significant increase in sustainability. Thus, the validity of the literature was assessed partly based on where the publication was made. Moreover, the limitation was made to only include articles that were no older than 15 years. Furthermore, keywords that led to various results with corresponding scientific articles were screened out in line with the delimitation of this paper. By combining keywords used in the databases, the search hits decreased significantly and around 60 articles were chosen for a more in-depth analysis based on the relevance of the research area. A maximum requirement of no more than 25 results was targeted for the generated search hits. After the selection of approximately 60 articles, the screening followed the process of first analysing the titles of the articles, and secondly reviewing the abstracts and summaries of the chosen articles to determine the relevancy of the selected articles. The credibility of this paper increased the higher the number of citations it had (Houghton et al., 2013). Moreover, a backward snowballing approach was used to find relevant research by going to the initial source from the articles acquired through chosen keywords (Jalali & Wohlin, 2012).

3.2.2 Empirical Data Gathering

The primary source of information for all of the data collection was by conducting semi-structured interviews as a part of the qualitative study to collect data from Company X and to gain a better understanding of the industry and the current activities within it. The data was collected in a total of seven interviews from employees who hold management positions within Company X (including Head of Operations, Founder/CEO and Supply Chain Coordinator) which took place in various locations in Sweden. By conducting an interview that has a semi-structured style was important in this setting to allow new ideas to arise and let the direction of the discussion take its road where one can explore new questions outside of questions and themes that had been prepared in advance.

Furthermore, in an explanatory study, it is best to conduct semi-structured interviews because it allows more flexible research and thus more prone to adjust to new findings (Saunders et al., 2009). Moreover, the questions started with the fashion industry as a whole before exploring factors within the fast fashion industries in particular and if they could implement strategies to

maintain a sustainable supply chain. To achieve an effective connection between the primary and secondary data, the semi-structured questions were designed to fit the theoretical framework (Englander, 2012). During the interview sessions, a method to maximize relevant information was to keep the interviewing questions both open and closed-ended. Following each interview that was conducted, they were transcribed and coded according to specific themes based on their occurrence and expressed comments.

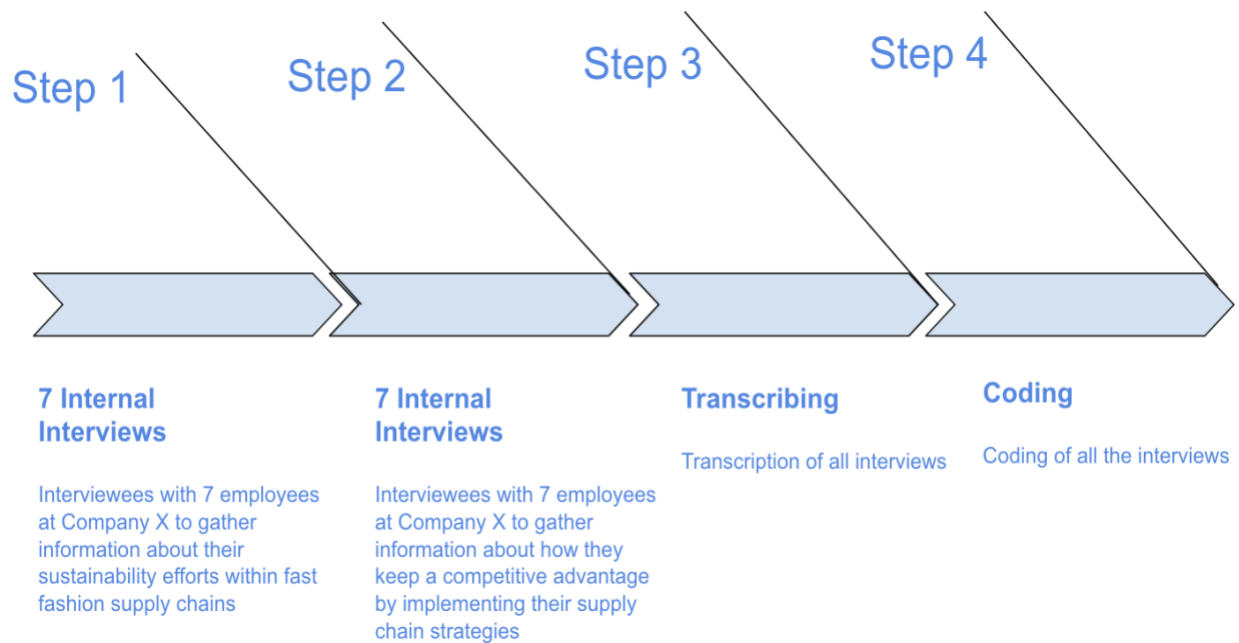


Figure 5. The process of interviewing, transcribing and coding

In total, seven interviews were conducted, four using video-conference software and three conducted face-to-face. Audio recordings were used when given permission, which allowed for transcripts to be made and therein the coding for a deeper analysis. Aside from audio recordings, notes were taken to emphasize on follow-up questions. The semi-structured interviews were of great value as they allowed for first-hand experiences on efforts as well as implications a smaller company faces within a trend-dependent fashion industry which would otherwise not have been acquired.

Table 1. An overview of the interviewees in the study

Fictitious Name	Role	Organization	Country	Interview Date	Interviewee
Johan	CEO/Founder	Company X	SE	10 May 2020	A1
Josefin	Head of Operation	Company X	SE	10 May 2020	A2
Ramon	Supply Chain Cord.	Company X	SE	14 May 2020	A3
Erik	Supply Chain Lead	Company X	SE	14 May 2020	A4
Adam	Supply Chain Lead	Company X	SE	2 June 2020	A5
Sara	Logistics Manager	Company X	SE	2 June 2020	A6
Ismail	Logistics Manager	Company X	SE	17 June 2020	A7

3.3 Data Analysis

All the interviews were conducted in Swedish and were transcribed manually as well as translated into English. In order to ensure accuracy in the transcription of the interviews, an iterative process took place where the recordings of the interviews were played and listened to several times to make sure that no words were missed out. However, it is important to take into consideration the human error which could cause some relevant information to be left under the radar. The next step of the data analysis was to fully process the transcripts by eliminating unnecessary information contained within the transcripts such as conversation builders, small talk as well as other antics that did not convey any message at all. Similarly, to ensuring accuracy in the transcription, this was conducted by an iterative process again of reading the transcripts numerous times to ensure that only unnecessary text was eliminated from the transcripts. Moreover, to locate the most important parts of the transcript, keywords were highlighted.

After the completion of the seven conducted interviews with Company X, a couple of recurring themes and comments expressed by the interviewees were identified which allowed for data analysis of the semi-structured interviews in the form of coding the interviews. Thus, a method of coding was performed to pinpoint and extract specific data to the research through the qualitative content analysis of coding the interviews which aim to reduce the diversity in the field and the data by identifying a core category (Flick, 2013). A total of 41 keywords were pinpointed by the researchers. The 41 keywords were accordingly divided into the five themes: *Strategies, Sustainable Product, Impact, Process and Measure*. Each theme was coded and separated by colour, in a so-called colour coding (Creswell, 2009).

Table 2. Coding of Interviews including a description of each theme and the keywords within them

Theme	Keywords	Description
Strategies	<ul style="list-style-type: none"> • Sustainable supply chain management (SSCM) • Corporate Social Responsibility (CSR) • Lead-time shortening • Quick Response (QR) • Reshoring vs. Offshoring 	Strategies that fast fashion companies apply in order to become more sustainable within their supply chains. SSCM practices are occasionally applied as criteria for suppliers to adhere to guidelines set by standards (e.g. ISO 14001). Other well-known strategies include CSR, QR and a reduction of time between initiation and completion of production. Reshoring or offshoring the production is an important strategy for fast fashion companies.
Sustainable product	<ul style="list-style-type: none"> • Organic cotton • Quality • Design • Reused garments • Tencel • Lyocell • Better Cotton Initiative (BCI) • Wood pulp • Eco-friendly fabrics 	Factors that enhance the sustainability of the products used in order to manufacture the products within the fast fashion industry. Tencel is a sustainable fabric that is regenerated from wood cellulose. The products and the initiative allow for more sustainable products to be used within the fast fashion industry.

Impact	<ul style="list-style-type: none"> • Unlivable wages • Working hours • Safety hazards • Conditions • Governmental regulations • Workers' health • Consumer perception • Consumer willingness • Brand image • Reputation • Environmental impact • Social impact • Economic impact • Excessive consumption • Overproduced fabrics 	<p>Impact that the fast fashion industry has had from an environmental, social and economic perspective whether it be a positive or a negative impact.</p> <p>There are more negative impacts than positive in this list, raising the concern for change from a sustainability point of view.</p>
Process	<ul style="list-style-type: none"> • Supply chain • Planning • Production process • Logistics process • Information flow • Transportation • Air freight • Sea freight 	<p>Some of the major processes included within a typical supply chain within the industry of fast fashion. Within recent years, sea freight has been a more favourable way of transporting goods than air freight for sustainable reasons.</p>
Measure	<ul style="list-style-type: none"> • Triple Bottom Line (TBL) • ESG-score • Corporate Sustainability • Reporting • Standards 	<p>Ways to measure the sustainability of an organization. These are some of the more common methods used to determine what sustainable impact the organization has. Certificates and standards are increasingly more common to strengthen the brand name.</p>

3.4 Research Quality

Reliability refers to the absence of differences in the results in the case of the research being repeated. In other words, by repeating the research of the qualitative study, the same accuracy should be generated (Collis et al., 2014). However, one of the more significant drawbacks of using semi-structured interviews is low reliability that they generate. The reason for this is due to the lack of standardization with these types of interviews as they usually lead to different types of information being collected. This is because the follow-up questions are varying heavily depending on the interviewer as well as how the open-ended questions are being interpreted by the interviewees (Ibid). However, to increase the standardization of the semi-structured interviews of the qualitative study, an interview guide was set up [Appendix A] to ensure that the planned questions were asked and that the risks of deviating from the main topic decreased. The reliability of the semi-structured interviews also depended on the interviewees' willingness and reluctance to engage in the chosen topics which could be due to confidential information or other reasons that could harm the company.

In order to keep the reliability of the research from becoming deficient, the challenge of retaining the integrity of the data collected from the qualitative study must be tackled. This was done through the thorough data analysis above as the trustworthiness and quality of the data collected increased through the coding of interviews. Furthermore, the data analysis allowed for the data to be correctly interpreted. To avoid researcher biases, the researchers made an effort to be aware of where the risks of bias may be introduced, such as observe subjects and interpret findings in light of their values or through physical appearances of the researcher where demeanour and personal attributes could play a role in how reliable the semi-structured interview is.

Validity refers to the accuracy of the findings of the research reflecting the targeted phenomena under study. In other words, the results of the research correspond well with what the researchers are on the lookout to measure (Collis et al., 2014). In terms of the validity of the extensive literature review, the researchers have made sure that it stays high as the scientific papers and peer-reviewed journals have been critically assessed based on the date of publication, the relevancy of the topic and the number of citations they have. However, it is important to note that such sources could have their own biases as sources such as non-governmental agencies (NGOs) and governmental agencies could have their agenda to push when discussing the hot topic of sustainability within the fast fashion industry. Lastly, to increase the validity of the qualitative research as a means of the interview guide, the

interviewees were given a brief but precise introduction from the researchers as well as the purpose and goal of the semi-structured interviews. This was done to ensure that the interviewees could give the necessary information and not deviate unintentionally.

3.5 Ethical Aspects and Sustainability

3.5.1 Research Ethics

The ethical considerations throughout this paper have followed guidelines recommended by the Swedish Research Council when collecting primary and secondary data (Swedish Research Council, 2017). Four principles in particular from Swedish Research Council were considered: the consent requirement, information requirement, confidentiality requirement and the good use requirement (Ibid).

All of the data collected through primary and secondary sources have been considering the ethical guidelines. The consent requirement implies that everyone involved in the research study has agreed to be studied where consent has been given. The information requirement implies a specification of how the information will be obtained. The confidentiality requirement is where the data collection is confidential. The interviewees were assured anonymity and nothing confidential would be shared with any third party. The company's name was disclosed throughout this paper and instead was given the name Company X. Furthermore, informants involved were informed about the research, their participation and the objective of this paper. Lastly, the good use requirement implies that the collected data was used only for stated purposes given.

Moreover, an ethical aspect which was taken into consideration was the acknowledgement of proper citation of authors which works have been used in this paper. By giving the authors the correct citation helps others to find the original document where they can research the subject further. The methods used in this paper were transparent and comprehensible.

3.5.2 Sustainability

Sustainability is the basic foundation for this research study as this paper is exploring sustainable supply chains within the fast fashion industry. Today, sustainability is an important consideration to take into account as the study has shown that organizations that implement sustainable thinking and have a corporate social responsibility in their strategy will help reach higher customer satisfaction and increased commitments from employees (Kim et al., 2010).

Sustainability can therefore be used to help make the fast fashion supply chains' more efficient and effective which would lead to reduced costs and shorter lead times. However, business sustainability includes a combination of social, environmental- and economic performance. Thus, social and environmental aspects are important to incorporate to achieve increased sustainability (Doane et al., 2001).

In 2015, 17 sustainable development goals (SDGs) were set by the general assembly of the UN to be reached by 2030. The goals all have in common that they address challenges that the world faces today. In order to achieve the 17 SDGs, there must be a collaborative effort from all over the world where transparency and trust must be highly valued (UNCDF, n.d.). Therefore, reaching a sustainable supply chain in the fast fashion industry could speed up the process of reaching these goals.

3.5.3 Implications of COVID-19

At the end of 2019, it was confirmed that a new virus, COVID-19 or the coronavirus, first identified in the city of Wuhan in China, had emerged. It has since March 2020 been classified as a pandemic (Folkhalsomyndigheten, 2020). The pandemic has forced the fashion industry to become more sustainable since many retail businesses are temporarily closed and many brands are still trying to find a way to deal with the significant decline in customer spending. Workers in China, India and Bangladesh are laid off due to the decrease or cancellation of orders. According to the report "Weaving a Better Future: Rebuilding a More Sustainable Fashion Industry After COVID-19", the fashion industry business in 2020 alone is expected to cut back by 30%. According to a recent study by Sustainable Apparel Coalition members, around 33% of decision-makers (fashion brands, retailers and manufacturers) say they felt unprepared for the COVID-19 pandemic (Apparel Coalition Org, 2020). As the world today needs sustainability more than ever, it has been forced to pause its transition to becoming a more sustainable industry, where the fashion and luxury industries are two industries most negatively affected by the pandemic. According to Sarah Willersdorf, the global head of luxury and partner at BCG, it is projected that sales will go down by 30-40% globally as a direct result of COVID-19 pandemic which means many companies, especially the smaller ones, are focusing on surviving by protecting their businesses through these times (Danziger, 2020). Stores were down by 44% in the U.S., 52% in Germany, 78% in India and 59% in Brazil (Sustainable Apparel Coalition, 2020).

Research from BCG, which surveyed over 500 manufacturers, showed that 86% of them had been heavily affected by cancelled or suspended orders and around 40% of them had difficulties paying their suppliers and employees. Furthermore, Willersdorf predicts consumers will spend

less in the near future as she argues consumers' time spent home during quarantine will have led to them becoming much more selective where they will start valuing quality and sustainability much more (Danziger, 2020). Moreover, brands that have integrated sustainability into real business thinking will come on top, whilst the ones on the bottom will be brands that have not realized the importance of integrating sustainable, environmental and social responsibility onto their business strategy. Willendorf concludes that sustainable business practices can lead to lower risk and possibilities to a new revenue stream (Ibid).

In order to ensure progress without any obstacles and prepare for the constant changes, four actions must be implemented. First and foremost, critical assets i.e. employees, workers, capital and customer loyalty need to be protected to survive the economic crisis affected by the pandemic. Furthermore, partnering up with suppliers will allow leaders to acknowledge the importance of an open dialogue to solve sudden inventory challenges (Sustainable Apparel Coalition, 2020). Moreover, well-established companies must integrate sustainability into their business recovery strategies as sustainability will be the main topic for decision-making after the pandemic. Lastly, if companies want to establish a more socially and environmentally beneficial impact to stakeholders, they must learn to become more transparent as they utilize digitalization, end-to-end solutions as well as innovative business models (Ibid).

To conclude, brands must realize the importance of incorporating sustainability within stabilization and new growth strategies instead of withdrawing from the commitment prior to the COVID-19 pandemic. Consumers will most likely choose and prioritize brands based on how they have behaved both during and after the pandemic where transparency will be highly valued. Technology will help prepare a transition onto sustainability where it can be used to support innovation covering supply chain management and new business models. The COVID-19 pandemic is seen as a crisis which allows for a rare opportunity for brands to collectively come together, advance and build on sustainability efforts (Apparel Coalition Org, 2020).

4 RESULTS & ANALYSIS

In this chapter, findings from the conducted semi-structured interviews as well as the findings from the literature review in the form of peer-reviewed journals and scientific papers is analyzed in order to draw necessary conclusions and discussions from the research. This chapter is divided into two subsections. Section 4.1 Sustainability Efforts towards Fast Fashion Supply Chains focuses on what is done in order for the supply chains within fast fashion to become more sustainable. Section 4.2 Competitive Advantage Process presents findings related to ways in which Company X keeps a competitive advantage against larger peers by implementing the supply chain strategies mentioned in section 4.1. Consequently, the findings are analyzed and discussed with regards to each interviewee's company background.

4.1 Sustainability Efforts towards Fast Fashion Supply Chains

In this section, in accordance to RQ1, five main findings relating to the sustainability efforts towards fast fashion supply chains are presented in greater detail. The five main findings related to the topic are *Sustainable Manufacturing, Eco-material Preparation, Green Distribution, Ethical Consumers, Reshoring vs. Offshoring* which all are presented more in-depth as their subsections. These five findings have been common denominators both in terms of the semi-structured interviews as well as the extensive literature review as both support each other.

4.1.1 Sustainable Manufacturing

Company X has made continuous efforts and worked hard to make its supply chain more sustainable. Furthermore, a great deal of emphasis has been put to ensure that Company X's entire manufacturing process is adhering to a sustainable process, as A1 – CEO/Founder states: *"If we look into our production process; we are seeking a lot of garment that is already manufactured, ready and waiting in the inventory",* thus avoiding unnecessary production that would only lead to increased carbon emissions. A1 further states: *"We at Company X produce very minimal garments that are exclusive for us only to be applied to our own products. So when we look into different models of clothing, the garments for these models exist and are already available for purchase and use."* Therefore, A1 concludes that: *"...this is something we feel we contribute with; we produce extremely little just for our own sake and we allow for these produced garments to be purchased by other retailers as well. This leads to a less negative environmental impact."*

Company X is actively looking to grow with seasonal collections coming in and out. However, A3 – *Supply Chain Coordinator* argues that they are not as fast in manufacturing clothes as other large companies within the fast fashion industry, such as H&M, Uniqlo and ZARA. Instead, A3 suggests that they focus significantly on restocking products in which they see great interest from the customers. Consequently, if they see a low interest in that particular collection, then a new collection would be introduced. Thus, ensuring that a collection will not suffer from low demand and lead to an excess in inventory.

Company X is very pleased to have Rekotex as a partner. Rekotex is a cooperative arrangement that comes in and purchases untouched fabrics to then sell it to producers wishing to obtain new fabric and to become more sustainable as unnecessary manufacturing is cut out from the process. A3 described their latest initiative with Rekotex: *“...we used fabrics from a retailer operating in Holland that used a certain fabric for their collection in 2014 for the European market but excluding the Scandinavian market - which we purchased from Rekotex and have implemented recently.”* A conclusion from this can be made that the partnership with Rekotex has led to a clear decrease in waste as a more sustainable manufacturing process.

The interviewees agreed that reducing waste material from the production process is a key element in ensuring a sustainable manufacturing process. Furthermore, the interviewees all agree that a big risk for extreme levels of waste material comes from constantly putting out collections with low to zero analysis on the interest of the customers. According to A3: *“This is something we see in big fast fashion retailers often; significant waste material as a result of just dropping collection after collection in order to be first – which is a model we don’t go by”*. Moreover, all the interviewees agree that big sales are another contributor to increased levels of waste as A3 further states: *“We try to avoid having bigger sales such as 50-70% off which would not be beneficial for anyone but the economy of the consumer, least for the environment as excessive consumption would take place”*.

A2 – *Head of Operations* referred to a promising technology that Company X is hoping to apply within its organization known as “3D printing”. A2 mentioned: *“In order for us to eliminate processes which are chemically harmful within our manufacturing process, we see 3D printing through CAD as a promising solution. This would also reap the benefits of cutting out labour-intensive processes which are good from a socially sustainable point of view”*. This is in line with previous research, where it has been established that 3D printing can erase multiple processes of a conventional fast fashion manufacturing process.

Consequently, Company X has managed to strategically find a sustainable solution within its manufacturing process by making sure that 30% of its collection is completed before entering a new season and the rest of its collection (70%) is dependent on the interest from the customers since flexibility for changes in the demand is allowed. A1 states: *"I would say we are closer to Zara in the sense that if we see a pattern that we missed, then our budget is much more capable to adapt to that style - constantly have our ears to the ground and pay attention to changes and interests of the customers. Thus, we become faster to responses in our production as well as our products. In contrast, I believe H&M is almost fully completed with 90% of its collection completed before the season and the remainder of 10% is flexible for adjustments - leading to a higher risk of excess inventory as a result."*

4.1.2 Eco-material Preparation

Company X has been working towards trying out new material for its products, such as Tencel, which is lyocell – a man-made biodegradable fibre from wood pulp and is more ecological and requires less dye than the manufacturing of other man-made fibres from wood pulp. A1 states that they have a number of different suppliers that they work with today. A1 explains: *"We look at the materials from these suppliers with a specific price range in mind which would be relevant for our customers to purchase such products."*

Company X is constantly collaborating with new partners to implement new strategies to become more sustainable within the supply chain. The collaboration with Smart Textiles has allowed for a technology that makes it possible to recycle textile fibres. Furthermore, Company X is collaborating with different textile academies across Sweden to identify technologically advanced strategies for producing fabrics from raw materials. A1 explains: *"We work with a company in Varberg that specializes within the field of recycled waste material and we are currently investigating a research project called "Svenska Skogen" which is intended to make fabrics based from the forest of Sweden"*.

Organic cotton and genetically modified fibres are seen as two very important eco-materials according to a majority of the interviewees. According to these interviewees, as a consequence of the implementation of such eco-materials into the production process, a clear decrease in water consumption, as well as significantly less harmful chemicals, have been identified by Company X within its analysis of its sustainability impact. Furthermore, some interviewees noted that the eco-material production led to a diminished requirement of crude oil which they explained were a reason for the lower release of emissions. These findings are in line with previous research as Swink (2018) research found that the production of polyester and other

synthetic fabrics required large amounts of crude oil as a result of its energy-intensive processes.

4.1.3 Green Distribution

In terms of the logistics process, Company X always tries to make sure that the deliveries are in sync with each other. As A6 – *Logistics Manager* states: *“We don’t allow for half-empty trucks to deliver the products to our customers as that would lead to an increase in transportation”*. Here, it seems that Company X is moving towards a greener distribution as they keep pushing to reduce as much transportation as possible, which leads to reduced CO₂ emissions. A6 further explains: *“We ensure that there is a group delivery which means that the items if purchased in multitude, will be delivered together in one stop. Less-than-truckload shipping is an option that can help us reduce emissions”*.

Furthermore, a majority of the interviewees from the technical interviews criticized the current output of work that is done today to push for green distribution as a necessary supply chain strategy within its organizations. A3 stated further: *“In terms of the distribution of our products, we are working heavily towards reaching the level of sea freight and rail freight that we envisioned, however, we are not fully there as we combine ferries for sea freight with air freight as well as full trucks for shorter distances”*. However, A1 was a bit more centred towards ensuring that the most flexible way of transportation was in place in order for the products to be delivered on time and that it fits with the budget. A1 added: *“In terms of significantly larger deliveries, we are definitely looking for improvements for distribution made for purchases in places outside of Europe. Furthermore, we have to consider air cost vs sea cost and include a more extensive planning to ensure that products are delivered on time”*.

All interviewees agreed that a supplier is required to fulfil a couple of minimum criteria for them to choose that specific supplier. More specifically, all interviewees adhered to the fact that before looking to purchase raw materials from these suppliers, thorough investigation into their sustainability efforts is made through standards and certificates. According to A7 – *Logistics Manager*: *“The suppliers’ sustainability standards and certificates play a crucial role in the choice of supplier. Examples of that include standards such as SA 8000 and ISO 140001”*. However, A1 explains that even though such standards are important, they are not the deciding factor. A1 clarifies: *“... there are many factors that come into play whenever we make such decisions regarding what supplier we purchase from so it is not a guaranteed barrier in that sense if one supplier does not implement complete sustainable practices”*. It is clear that Company X is

applying the SSCM framework of Supplier Evaluation for Risks and Performance which is included in this research.

A majority of the interviewees highlighted the fact that Company X is applying more analysis to collect information from its transportations with the help of IT solutions. A2 states: *"We are looking more into gaining tools to collect all relevant information from our distributions through the concept of smart mobility in order to assert requirements for quality and ensure sustainability within this department"*. This is in line with the empirical research conducted as Popescu (2015) outlined this concept and its use in his extensive research. Moreover, a smart mobility perspective can help such requirements to be met more easily within the fast fashion industry in which A2 agreed with.

4.1.4 Ethical Consumers

As mentioned in the literature review, there is an ongoing trend where consumers seem to be more and more willing to purchase eco-fashion products. A1 sees the trend and agrees as he mentions: *"Yes, we are constantly on the lookout for new opportunities to collaborate with other parties, especially for sustainability purposes"*. However, as Company X is not regarded as a big player in the industry, A1 clarifies: *It has to go in line with the budget we have and find smaller solutions that the customers are willing to purchase for which is very central for us. It almost always depends on the willingness of our customers; if we see a large willingness among our customers – such collaborations would be pushed by us even more"*. All interviewees agree that they have seen a clear interest for sustainable products and processes among their consumers.

Some interviewees highlight the important role consumers play in a company's journey of becoming more sustainable within its supply chain. A5 - Supply Chain Lead expressed: *"Having ethical consumers is a ground pillar in being capable of continuing pursuit of sustainability efforts. We are very proud of having a big group of ethical consumers"*. A1 stated in the interview that Company X's target group is male consumers between the ages of 18-35 – even though they have a great variety of age groups as customers. A1 further states: *"...people within this age group tend to be one of the most environmentally aware which is a great sign - and is something that is reflected upon in our database of analytics"* regarding their primary target group.

All interviewees agree that Company X has managed to attract ethical consumers through its extensive sustainability efforts. Moreover, a majority of them believe that consumers have become even more ethical as they have become more familiar and attached to Company X and its journey thus far. A1 believes that Company X also has managed to gain ethical consumers

through the strategy of offering niche products that are produced sustainably as he expressed: *“Companies such as Zara, H&M and Uniqlo are of course a threat as far as customers, but in terms of product diversification, ours is much more niche with sustainable labelling which allows us to capture an important customer segment in ethical consumers”*.

Interestingly enough, a couple of the interviewees pointed out that they see a clear increase in interest from consumers' willingness to buy sustainable products from their own analytical data collection which is in line with Popescu's (2015) research of a clear trend of increased demand for eco-fashion products. Additionally, research made by Wong and Chan (2012) also supports the findings gathered from Company X, as they mean that recyclable products and recyclable services in such companies correlate with a behavioural change towards a more ethical behaviour from consumers.

4.1.5 Reshoring vs. Offshoring

It seems to be a shared opinion amongst the interviewees regarding whether reshoring or offshoring would lead to increased sustainability. A1 thinks it depends from product to product. He elaborates: *“Asia for instance is extremely good at producing jackets with high quality. Thus, we see clear benefits of having a production facility outside of Europe. However, the sustainability aspect has to be critically analyzed”*. A6 has a different perspective: *“In the price class we work in, to say that our production in Portugal is optimal is quite hard to say as there are so many other successful production processes within the supply chain of many other companies”*.

As of today, Company X only produces in Europe (Portugal and Lithuania) which is strategically chosen in order for many sustainability efforts to be realized. A3 explains that the current strategy does not have to be permanent as it also depends on what the customers want. He explains: *“...it is interesting to see if you could offer lower prices to the customers if that is what they are demanding or higher prices if a sole production in Sweden is ever going to be possible”*. On the possibility of placing the production facility in Sweden, he further states: *“It is a complex matter since it requires further considerations. Initially, the interest has to come from the customers that they are more willing to pay maybe 30% more to have a production facility in Sweden and thus be more beneficial from a sustainable point of view through reshoring”*. A6 agrees and says that if a reshoring strategy becomes possible, the sustainability impact will be even greater, especially within the distribution process. This goes in line with previous research as Swink (2018) stated that reshoring must fulfil many conditions to become a reality for a company in the future such as consumer willingness to pay more, which can be seen with Company X requiring a significant price increase before such concept can be discussed.

All interviewees confirm that having the production facility in Europe is beneficial from many perspectives including stricter guidelines in comparison to Asia in terms of minimum wages, working hours as well as safety which are factors they all value greatly. Furthermore, another big reason for Company X choosing to produce in Europe is because of the less demand for production quantity compared to Asia which results in less risk of overproduction. A2 expressed that this is a standard that they keep ensuring to do their end to release significantly fewer waste materials to become more sustainable.

4.2 Examining Several Competitive Advantages of Company X

In this section, in accordance to RQ2, findings relating to how Company X keeps a competitive advantage by implementing the supply chain strategies mentioned in section 4.1 are presented in greater detail. The competitive advantage was examined from a differential advantage point of view where interviewees were questioned about how Company X's products stand in relation to its competitors in terms of uniqueness and quality from the customers' viewpoint as a result of their sustainability efforts from section 4.1. The findings were gathered from all seven interviewees from the semi-structured interviews conducted.

Firstly, all interviewees agree that Company X has received differential advantages as a result of the company's application of the above-mentioned supply chain strategies as well as the SSCM framework. A1 lifted an important reason behind a competitive advantage received as he discussed in-depth about how their suppliers have shifted from a labour-intensive to a more capital-intensive business. A1 explains: *"A very important way for us to retain our customers is to become a source of innovation and to have intellectual property that leads to our customers staying loyal to us. Thus, we have ensured that our suppliers have shifted to become capital-intensive which stimulates innovation"*. The customers of Company X value innovative solutions which is why the company is constantly working with the most innovative yet sustainable suppliers within the fashion industry.

However, A2 took a different angle than A1 when discussing the competitive advantage that Company X gained as a result of the efforts. A2 mentioned the strong brand image that Company X has obtained which has attributed to increased differential advantages. A2 elaborates: *"A couple of data analyses conducted show that our company is at the forefront of customers number one choice when seeking to purchase sustainable clothes which is a testament to our strong brand image"*. When asked about why the brand image can have such an impact on the customers A2

explained: *“A brand personality has a goal to match up with a customer’s personality such that the customers can express their personality by wearing that brand”*. Similarly to A2, A3 believes that competitive advantages have been obtained through embracing the ideology of eco-friendliness and sustainability from the very beginning which has led to increased credibility of their brand. A3 expresses *“I think the credibility we have among our customers is one of our core reasons for gaining a competitive advantage”*.

Having implemented multiple extensive sustainability efforts has helped put Company X in a separate category and made it easier to attract ethical consumers. A4 believes that Company X has obtained a competitive advantage as a result of ethical consumers switching its buying behaviour as they are becoming more conscious of the effects of fast fashion. Consequently, this would not only mean more consumers for sustainable fashion but also less ethical consumers for the fast fashion industry. A4 states: *“We have seen a large commitment from the consumers, where the consumers have become more ethical and more demanding. For the consumers, I think it is important to feel a connection to the company and not just the products. I therefore strongly believe that a company’s journey becomes increasingly more crucial”*. The newer generations (Gen Z and Millennials) are increasingly more demanding for sustainable products which will only serve as a competitive advantage for Company X as they “steal” the ethical consumers from the fast fashion companies. This goes in line with what A1 previously said where fast fashion companies are a threat to smaller companies such as Company X. However, in terms of product diversification, A1 believes that their products are more niche with sustainable labelling which helps to attract an important customer segment in ethical consumers.

Competitive advantages have also been caused by allowing for a wide range of budding partnerships according to A5. A5 states: *“By associating ourselves with leading firms within all processes of the supply chain, we have managed to improve efficiency, craft novel designs and also further improve our sustainability efforts”*. When asked about the importance of such partnerships for Company X, A5 explained: *“Ultimately, consumers want to make sustainable purchasing decisions. Thus, brands that make it easy for them through partnerships will gain traction in the marketplace”*.

Both A6 and A7 believe a competitive advantage has been gained through Company X’s transparency and traceability. A6 states: *“We see too often many best-kept-secrets within the fashion industry where many firms choose to avoid discussing how many tons of clothes that end up in landfills that they are responsible for as well as how much CO₂-emissions they let out”*. A7 expressed that Company X has built a strong trust with its customers by allowing traceability

within its carbon footprints. A6 explained that transparency is not only necessary to indicate to consumers how much waste that fast fashion companies produce, but also act as an alarm for those fast fashion companies to start protecting the environment by reducing such needless production. Moreover, both A6 and A7 highlighted the importance to ensure customer satisfaction as satisfaction greatly impacts repurchase decisions of consumers. A6 pointed out that dissatisfied consumers tend to withdraw from the brand of the company, which is something they will not risk for anything, A6 adds.

5 CONCLUSION

In this chapter, the conclusions from the research are drawn and presented from the findings and analysis. The findings are summarized and conclusions are drawn from these findings in order to answer the research questions formulated in section 1.3. The answer to research question 1 is presented in section 5.1 and the answer to research question 2 is presented in section 5.2. Moreover, limitations are drawn to the research in section 5.3 and contributions to research are presented in section 5.4. Lastly, potential recommendations for future research are presented in section 5.5.

This is a study which intended to answer and deal with the important issues relating to the sustainability of the fast fashion industry. Research was conducted to analyze what sustainability efforts were the most suitable and necessary in order for the fast fashion industry to become more sustainable within their supply chains. The five main findings related to the topic, which were identified in the literature review, are *Sustainable Manufacturing, Eco-material Preparation, Green Distribution, Ethical Consumers, Reshoring vs. Offshoring*. Based on these five main factors affecting the sustainability of the supply chains for fast fashion retailers, a case study with Company X revealed numerous improvements within those five areas of sustainability efforts towards the fast fashion industry. Moreover, it was found that Company X keeps a competitive advantage in several different ways by implementing its said supply chain strategies identified in section 4.1. Furthermore, this study shows that all the interviewees saw clear competitive advantages gained through their sustainability practices. Subsequently, seven competitive advantages from these five areas of sustainability efforts were identified from the semi-structured interviews with Company X. Ultimately, the key conclusions of achieving a sustainable fast fashion industry as well as achieving a competitive advantage through given efforts will be presented in section 5.1 and section 5.2 respectively.

5.1 Achieving a Sustainable Fast Fashion Industry

What has to be done in order for the supply chain within the fast fashion industry to become more sustainable?

The findings and analysis of this study showed that there are numerous supply chain strategies for improvements, including sustainable manufacturing, eco-material preparations, green distribution, ethical consumers and reshoring vs. offshoring strategies. In regard to sustainable manufacturing, much can be done to improve the supply chain. By purchasing already manufactured products and producing garments to other fashion retailers, large and unnecessary production can be avoided. Empirical evidence has been established which indicates that avoidance of bigger sales and production when demand is low will result in a more sustainable manufacturing process. More specifically, companies aiming to become more

sustainable should focus on restocking products based on if clearly shown interest from the consumers is visible.

The outlook for the 3D printing technology is promising as empirical findings collected from the interviews indicate that it could eliminate some of the major negative social impacts of child labour, forced labour and labour with other extreme conditions through cutting out labour-intensive processes. The research also suggests that 3D technology through CAD could lead to a smoother shift for suppliers towards a more capital-intensive business rather than a labour-intensive business. Empirical findings suggest that a way to achieve sustainable manufacturing is for a small portion of the collection to be ready before entering a new season (e.g. 10%) and the rest of the collection (e.g. 90%) to be flexible for changes in consumer demand which leads to a deficit in inventory as demand is accurately met. As a result, fewer items end up in landfills.

Eco-material preparation is a detrimental process to ensure sustainable supply chains within fast fashion. Lyocell has demonstrated to require significantly less energy and water than cotton and is also biodegradable which is increasingly being implemented among fast fashion retailers. Furthermore, lyocell requires a lot less dye than cotton which is less environmentally harmful. Another important process in obtaining eco-material is through partnerships where the latest technological advancements made in recycled fibres can be gained. Lastly, two very promising eco-friendly materials that have empirically proven to require much less water, less crude oil and less release of harmful chemicals within their preparation are GM-fibres and organic cotton. Conclusively, these two materials have been successfully implemented within the supply chain of retailers.

Green distribution can help decrease costs related to transportation while still reducing the CO₂ emissions as a result of group delivery. Group delivery reduces the number of trips by combining smaller shipments all into one-stop. By simply moving trucks from the roads has significant implications on sustainability. Hence, by taking aim at the traditional Less-than-truckload (LTL) shipping can help steer things in the right direction. To identify shipments that can be combined on the same truck and travel the same destination without any stops would have large implications for manufacturing in terms of lowering the risk of damaging the trucks. Thus, lessening remanufacturing processes and also lessening the amounts of resources wasted. Consequently, this leads to an increased sustainable supply chain.

Globally, there is a clear increase in ethical consumers within the fast fashion industry as the demand for eco-fashion products is rising to new levels. Ethical consumers' willingness is

usually the determining factor and a ground pillar for if companies push for collaborations concerning sustainability efforts. Moreover, the newer generations (i.e. Gen Z and millennials) are the true ethical consumers that fast fashion companies must pursue in order to gain market shares as well as build the sustainability brand off of. The reason behind this is because empirical evidence shows that the newer generations are increasingly more demanding for sustainable products. Thus, in order for fast fashion companies to be at the forefront of sustainability, they must adhere to these ethical consumers.

A reshoring strategy for European retailers leads to a significantly greater sustainability impact compared to offshoring as Europe has much stricter guidelines in terms of minimum wages, working hours, safety and less demand for production quantity leading to lower risk of overproduction and ultimately a decrease in the solid waste that end up in landfills. Furthermore, in order for a reshoring strategy to be actualized in the nearby future, factors such as consumer willingness to pay more must be realized. Conclusively, as the reshoring implementation process is not understood in great detail with many aspects still relatively unexplored it is difficult to assess the strategy of reshoring in-depth which is needed before any judgement on the accurate possibilities of reshoring can be made. Thus, empirical evidence suggests that substituting an offshoring strategy for reshoring is a complex matter that must be explored further through research to make a final decision.

5.2 Achieving a Competitive Advantage

How does Company X keep a competitive advantage given the sustainability efforts towards its supply chain?

In this study, it is concluded that Company X can keep a competitive advantage in several different ways by implementing its said supply chain strategies detailed in section 5.1. The major competitive advantages that have been achieved according to the company itself came from; *capital-intensive suppliers rather than labour-intensive, strong brand image, credibility, increase in ethical consumers, partnerships, transparency and traceability*. Company X has realized that purchasing from capital-intensive suppliers rather than labour-intensive suppliers will yield new innovative solutions for technologically advanced eco-material as well as efficiency in the production process. Furthermore, Company X values obtaining a strong brand image as it comes with benefits such as attracting more consumers to the company. The consumers' attraction to Company X lies in it being able to express its personality through the brand.

It can also be concluded that credibility among consumers increased because Company X has truly embraced the ideology of sustainability and eco-friendliness ever since they launched. As a result of staying true to its ideology, Company X has earned strong credibility amongst its strongest customer segment. Another competitive advantage that can be concluded is that there is a clear increase among ethical consumers, especially with the emergence of the newer generations' insistence on sustainable products which will only serve as a benefit for Company X. As consumers' behaviour shifts towards a more ethical mindset, traditional fast fashion companies will continue to lose an important customer segment if no changes are made.

Conclusively, partnerships with advanced firms that enhance sustainability efforts will attract even more consumers as such collaborations will yield sustainably advanced designs and processes. Lastly, transparency and traceability are two properties Company X is proud of because it creates trust among its consumers as the consumers can access data as well as company strategies which will lead to a strong and long-lasting loyalty base for Company X to build from.

5.3 Contribution

Even though fast fashion has been researched in the setting of sustainable supply chains it has not been investigated in the area where a thorough and in-depth case study with a company that has achieved advanced supply chain strategies. Furthermore, although certain sustainability efforts have been analyzed from existing research, they have not been examined from a first-hand perspective where the supply chain of the fast fashion industry is at focus. Therefore, this thesis has theoretically contributed to existing research and thus filled a gap in the literature as well as contributing to general important practices within the industry of fast fashion. Furthermore, the thesis has contributed to existing literature by identifying new applicable areas for the SSCM framework by using the framework to draw relevant conclusions from the findings made from the case study with the Case Company which were presented in section 4.1.

Practical contributions have also been made in terms of establishing meaningful conclusions with the management of Company X. Findings that are considered useful for the management of Company X include highlighting strategies that are in line with existing research and how all the interviewees position themselves in relation to each other in terms of their views of the company's strategy moving forward. This study indicates to the management of the Company

that it is possible for them to remain competitive by practically using the same strategies and not have to make significant additions to their existing strategies. Thus, the sustainability efforts presented in the findings are strategies that companies operating within the retail industry such as Company X should strive to obtain and improve in order to become more sustainable within their supply chains.

5.4 Limitations

Throughout this paper, in order to maintain objectivity when acquiring new understanding of different areas, it is important to establish various measurements. Although many of the objectivities were maintained, it is difficult to avoid parts of this paper which could be regarded as weaknesses. Much of this paper consists of self-collected data, such as interviews, which is a weakness in itself because it is unverifiable and therefore difficult to replicate. Biases from the self-collected data such as *selective memory*, *telescoping effect*, *attribution* and *exaggeration* have weakened this paper (Robins et al., 2007). Selective memory bias is the ability to remember certain information and not remember any other information. Telescoping bias is the tendency to have imprecise memories regarding how recent an event took place. Attribution bias refers to systematic errors people make when trying to find an explanation for either their own or others' behaviour. Lastly, exaggeration bias is overemphasizing events to make them up to something more notable than in actuality.

Since this paper consists of a qualitative study, it will become hard to replicate this study accurately. Unlike a quantitative study, a replicated version of this study will most likely not generate the same results due to the biases mentioned. Furthermore, research was only limited to the five detailed sustainable supply chain strategies. Other supply chain strategies were not accounted for in the research such as the integration process where extensive planning occurs as well as the operation process where equipment is being monitored and working hours are cut back when production slows down etc.

The selection of interviewees was random to eliminate biases. The only focus when the selection of interviewees took place was to ensure that they possessed a relevant role within Company X so that educated answers could follow from the interviews. Another limitation of this research is that the empirical findings gathered was only conducted within a small fashion company in Sweden. Thus, general conclusions drawn from that company do not necessarily follow for a giant fashion retailer operating in North America for instance. In other words, it is not guaranteed that the supply chain strategies proposed in this research applies to other major

fast fashion companies but should instead be seen as suggested supply chain strategies in order to become more sustainable.

Moreover, there was an overrepresentation of interviewees from the same company which remain just as much risk of generating homogenous answers and risks of affecting the empirical results. The number of interviews conducted was limited which explains another limitation of this paper, mainly since it has been harder to reach out to people given the current circumstances of the COVID-19 pandemic. The interviews post COVID-19 pandemic outbreak has been conducted virtually which possibly may have limited the validity of the data since more interviews conducted face to face could lead to more reliable findings as there would be a possibility for deeper discussions. Further implications are the risk of missing out on new information which otherwise could have been examined in greater detail. Additionally, it has become harder to reach out to other companies, aside from Company X, as a way to gain a deeper understanding regarding this subject matter.

5.5 Future Research

There are several different areas to discover in future research related to the topic. Since only a selected supply chain processes were evaluated from a sustainability aspect within this research, a suggestion for future research could be to include other supply chain processes. Such processes include the integration process and the operation process as mentioned earlier to discover new sustainability strategies that could be implemented within a fast fashion supply chain. Furthermore, future research could potentially focus on conducting a thorough qualitative study where case studies are conducted onto bigger fast fashion companies to propose suggestions for strategies to be implemented from such perspective. Alternatively, conducting the research in another country with similar company size could be conducted to compare the outcomes from the two research papers.

In future research, it would be interesting to analyze the reshoring strategy more in-depth as Orzes et al. (2019) concluded that it is a relatively unexplored strategy. For instance, extensive research should be conducted where analysis is directed towards analysing how reshoring is related to a supply chain reconfiguration. In addition, analysis of how reshoring relates to environmental sustainability and how long before the strategy could become a standard for fashion retailers around the world should also be conducted.

Moreover, in order to somewhat verify the findings made from this research, future research could be to conduct similar research but by using a quantitative method where a different methodology is utilized to reach the empirical data needed. Conclusively, future research could also be conducted where the focus is put on deep diving into only one specific process of the fast fashion supply chain (e.g. the distribution process). As a result, a more complex analysis will be made with findings that surely could benefit actors active within that specific supply chain process.

References

- Apparel Coalition Org. (2020). *Weaving a Better Future: Rebuilding a More Sustainable Fashion Industry After COVID-19*. Apparel Coalition Organisation. <https://apparelcoalition.org/wp-content/uploads/2020/04/Weaving-a-Better-Future-Covid-19-BCG-SAC-Higg-Co-Report.pdf>
- Bick, R., Halsey, E. and Ekenga, C. C. (2018). *The global environmental injustice of fast fashion*. Environmental Health.
- Cataldi, C., Dickson, M. and Grover, C. (2010). *Slow Fashion: Tailoring a Strategic Approach towards Sustainability*. School of Engineering, Blekinge Institute of Technology, Karlskrona, Sweden.
- Chan, T. Y. and Wong, C. W. Y. (2012). *The consumption side of sustainable fashion supply chain*. Journal of Fashion Marketing and Management.
- Collis, J. and Hussey, R. (2014). *Business research: A practical guide for undergraduate and postgraduate students*. Palgrave Macmillan.
- Creswell, J. W. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches (3rd ed.)*. University of Nebraska, Lincoln.
- Crofton, S. O. and Dopico, L. G. (2007). *Zara-Inditex and the Growth of Fast Fashion*. High Point University, Macrometrix.
- Cronin, P., Ryan, F. and Coughlan, M. (2008). *Undertaking a literature review: A step-by-step approach*. British Journal of Nursing (Mark Allen Publishing).
- Croom, S., Romano, P. and Giannakis, M. (2000). *Supply chain management: an analytical framework for critical literature review*. European Journal of Purchasing & Supply Management.
- Danziger, P. N. (2020). *Coronavirus Will Force Fashion To A Sustainable Future*. Forbes.
- Davenport, C. (2018). *Major Climate Report Describes a Strong Risk of Crisis as Early as 2040*. The New York Times. <https://www.nytimes.com/2018/10/07/climate/ipcc-climate-report-2040.html>

DeWitt, W., Mentzer, J. T., Keebler, J. S., Min, S., Nix, N. W., Smith, C. D. and Zacharia, Z. G. (2001). *Defining Supply Chain Management*. Journal of Business Logistics.

Doane, D. and MacGillivray, A. (2001). *Economic Sustainability: The business of staying in business*. New Economics Foundation.

Drew, D. and Reichart, E. (2019). *By the numbers: the economic, social and environmental impacts of 'fast fashion'*. Green Biz.

<https://www.greenbiz.com/article/numbers-economic-social-and-environmental-impacts-fast-fashion>

Dudovskiy, J. (2018). *Inductive Approach (Inductive Reasoning)*. Business Research Methodology.

<https://research-methodology.net/research-methodology/research-approach/inductive-approach-2/>

Ellen MacArthur Foundation. (2015). *What is a circular economy? A framework for an economy that is restorative and regenerative by design*. Ellen MacArthur Foundation.

<https://www.ellenmacarthurfoundation.org/circular-economy/concept>

Englander, M. (2012). *The Interview: Data Collection in Descriptive Phenomenological Human Scientific Research**. Journal of Phenomenological Psychology.

Flick, U. (2013). *The SAGE handbook of qualitative data analysis*. Freie Universität Berlin, Germany. Sage, 01-Flick_Ch-01 Part I.

Flood, A. (2019). *Waterless Fashion: Does The Dying Industry Need To Use Water?* Euro News.

<https://www.euronews.com/living/2019/07/18/waterless-fashion-does-the-dyeing-industry-need-to-use-water>

Folkhälsomyndigheten. (2020). *Sjukdomsinformation om coronavirus inklusive sars, mers och covid-19*. Folkhälsomyndigheten.

<https://www.folkhalsomyndigheten.se/smittskydd-beredskap/smittsamma-sjukdomar/coronavirus/>

Gupta, S. and Gentry, J. W. (2016). *The behavioral responses to perceived scarcity – the case of fast fashion*. The International Review of Retail, Distribution and Consumer Research.

Gupta, S. and Gentry, J. W. (2018). *Evaluating fast fashion: Fast Fashion and Consumer Behaviour*. University of Illinois Springfield.

Hayes, A. (2020). *Fast fashion*. Investopedia. <https://www.investopedia.com/terms/f/fast-fashion.asp>

Henninger, C. E., Alevizou, P. J. and Oates, C. J. (2016). *What is sustainable fashion?* Journal of Fashion Marketing and Management. Emerald Insight.

Hobson, J. (2013). *To die for? The health and safety of fast fashion*. Occupational Medicine, Volume 63. Oxford Academic.
<https://academic.oup.com/occmed/article/63/5/317/1451439>

Houghton, C., Casey, D., Shaw, D. and Murphy, K. (2013). *Rigour in qualitative case-study research*. Nurse researcher.

Isaacs, L. (2019). *From the Runway to Your Closet: Shipping and Warehousing Fast Fashion*. Fulfillment and Distribution.
<https://fulfillmentanddistribution.com/shipping-and-warehousing-fast-fashion/>

Jalali, S. and Wohlin, C. (2012). *Systematic literature Studies: Database Searches vs. Backward Snowballing*. Blekinge Institute of Technology, SE 37179, Karlskrona, Sweden.

Johansson, E. (2010). *Slow Fashion - the answer for a sustainable fashion industry?* Degree of Master in Applied Textile Management, The Swedish School of Textiles.

Joy, A., Sherry, J. F., Venkatesh, A., Wang, J. and Chan, R. (2012). *Fast Fashion, sustainability and the ethical appeal of luxury brands*. University of British Columbia.

Jung, S. and Jun, B. (2014). *A theoretical investigation of slow fashion: sustainable future of the apparel industry*. International Journal of Consumer Studies.

Kenton, W. (2020). *Supply Chain*. Investopedia.

<https://www.investopedia.com/terms/s/supplychain.asp>

Kim, H. R., Lee, M., Lee, H. T. and Kim, N. (2010). *Corporate Social Responsibility and Employee–Company Identification*. Journal of Business Ethics.

Knosková, L. (2019). *The Economic Impact of Consumer Purchases in Fast Fashion Stores*. Studia Commercialia Bratislavensia, Economic University in Bratislava.

Kumar, D. and Rahman, Z. (2015). *Sustainability adoption through buyer supplier relationship across supply chain: A literature review and conceptual framework*. International Strategic Management Review. Department of Management Studies, Indian Institute of Technology Roorkee, India.

Lambert, D. M. and Cooper, M. C. (2000). *Issues in Supply Chain Management*. Industrial Marketing Management.

Macchion, L., Da Giau, A., Caniato, F., Caridi, M., Danese, P., Rinaldi, R. and Vinelli, A. (2017). *Strategic approaches to sustainability in fashion supply chain management*. Production Planning and Control.

Maleki, M. and Cruz-Machado, V. (2013). *A Review on Supply Chain Integration: Vertical and Functional Perspective and Integration Models*. Economics and Management. UNIDEMI, Universidade Nova de Lisboa, Portugal.

Marias, B. (2016). *Sustainable Apparel Coalition Annual Meeting 2016*. Coopérative D'entrepreneur Du Changement, Air Coop.

<http://www.air.coop/sustainable-apparel-coalition-annual-meeting-2016/>

McGuire, J. B., Sundgren, A. and Schneeweis, T. (1988). *Corporate Social Responsibility and Firm Financial Performance*. Academy of Management Journal.

McWilliams, A., Siegel, D. S. and Wright, P. M. (2006). *Corporate Social Responsibility: Strategic Implications**. Journal of Management Studies.

Mikolajczak, C. (2019). *Six things you didn't know about the true cost of fast fashion*. United Nations Development Programme.

<https://www.undp.org/content/undp/en/home/blog/2019/six-things-you-didn-t-know-about-the-true-cost-of-fast-fashion.html>

Omelich, Y. (2020). *The Impact of Fast Fashion*. Codogirl Journal.

<https://www.codogirl.com/blogs/news/the-impact-of-fast-fashion>

Orzes, G. and Sarkis, J. (2019). *Reshoring and environmental sustainability: An unexplored relationship?* Resources Conservation and Recycling.

Oshri, H. (2019). *Three Reasons Why Fast Fashion Is Becoming A Problem (And What To Do About It)*. Forbes.

<https://www.forbes.com/sites/theyec/2019/05/13/three-reasons-why-fast-fashion-is-becoming-a-problem-and-what-to-do-about-it/#3996f9a8144b>

Perry, P. (2012). *Exploring the influence of national cultural context on CSR implementation*. Journal of Fashion Marketing and Management. The University of Manchester.

Pinnock, O. (2019). *Progress In Sustainable Fashion Has Slowed By A Third In The Past Year*. Forbes.

<https://www.forbes.com/sites/oliviapinnock/2019/05/07/progress-in-sustainable-fashion-has-slowed-by-a-third/#7d0f104d7b36>

Pookulangara, S. and Shephard, A. (2013). *Slow fashion movement: Understanding consumer perceptions—An explanatory study*. Journal of Retailing and Consumer Services.

Popescu, A. C. (2015). *On the Sustainability of Fast Fashion Supply Chains – A Comparison Between the Sustainability of Inditex and H&M's Supply Chains*. West University of Timișoara, Romania.

Ranson, B. (2020). *The true cost of colour: The impact of textile dyes on water systems*. Fashion Revolution.

<https://www.fashionrevolution.org/the-true-cost-of-colour-the-impact-of-textile-dyes-on-water-systems/>

Rauturier, S. (2019). *What Are The Most Sustainable Fabrics?* Good on You.

<https://goodonyou.eco/most-sustainable-fabrics/>

Remy, N., Speelman, E. and Swatz, S. (2016). *Style that's sustainable: A new fast-fashion formula*. McKinsey & Company.

<https://www.mckinsey.com/business-functions/sustainability/our-insights/style-thats-sustainable-a-new-fast-fashion-formula>

Robins, R. W., Fraley, R. C. and Krueger, R. F. (2007). *Handbook of Research Methods in Personality Psychology*. Guildford Publications.

Russell, C. (2019). *Could This Be How We Make Fast Fashion Sustainable?* Forbes.

<https://www.forbes.com/sites/callyrussell/2019/08/27/could-this-be-how-we-make-fast-fashion-sustainable/#5fd2ea4a1e8f>

Ryan, T. (2017). *Are fashion trends moving too fast for retail?* Retail Wire.

<https://retailwire.com/discussion/are-fashion-trends-moving-too-fast-for-retail/>

Saunders, M., Lewis, P. and Thornhill, A. (2009). *Research methods for business students*. Harlow: Pearson Education.

Segran, E. (2019). *Bad news: The fashion industry is actually slowing down on sustainability*. Fast Company.

<https://www.fastcompany.com/90347710/bad-news-the-fashion-industry-is-actually-slowing-down-on-sustainability>

Seuring, S. and Müller, M. (2008). *From a literature review to a conceptual framework for a sustainable supply chain management*. Journal of Cleaner Production.

Shen, B. (2014). *Sustainable Fashion Supply Chain: Lessons from H&M*. Glorious Sun School of Business and Management, Donghua University, Shanghai, China.

Sherman, F. (2016). *Fast Fashion and the Chase to the Bottom*. The Human Thread Campaign.

<https://www.humanthreadcampaign.org/blog/fast-fashion-and-the-chase-to-the-bottom/>

Siegle, L. (2018). *Destroying Unsold Clothes Is Fashion's Dirty Secret. And We're Complicit*. The Huffington Post.

https://www.huffingtonpost.com.au/entry/burberry-burn-clothes-fashion-industry-waste_n_5bad1ef2e4b09d41eb9f7bb0?guce_referrer=aHR0cHM6Ly9lbi53aWtpcGVkaWEub3JnLw&guce_referrer_sig=AQAAAAU5fjEYmp4enTQb-f0ETA2_0Hi5ygxFLC68JkcfuFkO2rUEZn8MbbViH0uv7WqBMaYWiVKKAvVM2F1gNmaIBdcVD09dpw3JQPdpwA00H_o5U3KLftHcUDE3jipHDjuxqNkUF_obvU8PUbi1DW53wdevjv3TffsVOcfAKwf52g46&guccounter=2

Simpson, L. H. (2019). *Exploration of the perpetuating fast fashion consumption cycle: Young women's experiences in pursuit of an ideal self-image*. Iowa State University Capstones, Thesis and Dissertations.

Sraders, A. (2018). *What Is Vertical Integration and What Are The Benefits?* TheStreet. <https://www.thestreet.com/markets/what-is-vertical-integration-and-what-are-the-benefits-14671684>

Starck, M. (2019). *The Economics of Fast Fashion*. Attire Media. <https://www.attiremedia.com/>

Stein, S. (2019). *How Could Changing Consumer Trends Affect Fast-Fashion Leaders H&M And Zara?* Forbes. <https://www.forbes.com/sites/sanfordstein/2019/02/10/how-could-changing-consumer-trends-affect-fast-fashion-leaders-hm-and-zara/#1a9b62126f48>

Sustainable Apparel Coalition. (2020). *New Report Shows COVID-19 Puts Sustainable Fashion At Crossroads*. PR Newswire. <https://www.prnewswire.com/news-releases/new-report-shows-covid-19-puts-sustainable-fashion-at-crossroads-301049937.html>

Swedish Research Council. (2017). *Good Research Practice*. Vetenskapsrådet.

Swink, S. (2018). *Sustainability issues and approaches in fashion supply chains*. Department Supply and Value Chain Management, Texas Christian University, Fort Worth, Texas.

The Guardian. (2020). *The Guardian view on fast fashion: it can't cost the earth*. Opinion, Fashion Industry, The Guardian Editorial.

Turker, D. and Altuntas, C. (2014). *Sustainable supply chain management in the fast fashion industry: An analysis of corporate reports*. European Management Journal.

UCLA Sustainability. (n.d.). *What is Sustainability?* Regents of the University of California.

UNCDF. (n.d.). *Financial Inclusion and the SDGs*. United Nations Capital Development Fund.
<https://www.uncdf.org/financial-inclusion-and-the-sdgs>

Velychko, O. (2019). *Fast Fashion – Tackling the Problem of low wages for garment workers*. Nordea Asset Management.
<https://insights.nordea.com/en/sustainable-finance/olena-velychko-on-how-to-tackle-low-wages-in-fast-fashion/>

Wang, T. Y. (2010). *Consumer Behavior Characteristics in Fast Fashion*. Master of Fashion Management, Textilhögskolan Högskolan i Borås, Borås, Sweden, August 2010.

Woodside, A. and Fine, M. B. (2019). *Sustainable fashion themes in luxury brand storytelling: The sustainability fashion research grid*. Journal of Global Fashion Marketing.

Appendices

Appendix – Interview Guide

Part 1: Introduction (5 minutes)

- Present the goal with the thesis and who the researchers are
- Ask for the allowance to record the interview

Part 2: Background (5 minutes)

- Who are you?
- What is your background?
- What do you get to do in your role at Company X?
- What experiences do you have?

Part 3: Case study questions (40-50 minutes)

- How do you work to become more sustainable within your supply chain?
- Is there any specific process within your supply chain that you are putting more emphasis on becoming more sustainable; for instance your production process, logistics process or information flow etc.?
- How does your sustainability work within your supply chain look like in the logistics process more specifically? Have you managed to improve that department yet?
- Is there more contribution from your part to become even more sustainable within your logistics process in terms of deliveries or other?

- Do you have sustainability goals to be achieved within the logistics process or are you pleased with how things are going right now?
- Do you deliver some products through boat freight or is that not a reality yet?
- Do you have a specific way of measuring your sustainability efforts? Do you use any ESG-score or Triple Bottom Line (TBL) or similar to measure your sustainability efforts?
- Who is the biggest competitor in your market would you say?
- What is the age group for your customers?
- Do you believe that there are any advantages and disadvantages of having a specific age group targeted?
- In what way do you work with CSR?
- How do you try to implement CSR into your business? Do you believe that it can have a significant impact for you in your journey of becoming more sustainable?
- How do you work with Tencel?
- Is it a supplier that transports the products to you or do you have a binding contract with a specific supplier that provides you with materials such as Tencel?
- Would you say that your collaboration with Rekotex leads to a clear decrease in waste?
- Do you have an approximation of the percentage of fabrics that come from Rekotex?
- Do you have plans to collaborate with other firms for sustainability purposes?
- Do you have any concrete firms that you look into as of right now?

- Do you have requirements where your suppliers must fulfil a sustainability check before making a purchase from one of them?
- What were the factors for you at Company X choosing to have your production in Europe instead of placing your production process in Asia which is very common for bigger fast fashion firms? Reshoring vs. offshoring strategy.
- How would you describe your company as far as trendiness goes?
- Do you see similarities between you as a company and the bigger fast fashion retailers in the market?
- How is your strategy towards releasing a collection and the flexibility to adjust to consumer demand? How does that compare to the bigger fast fashion companies if you know?
- Would you say that you are similar to traditional fashion firms regarding your supply chain strategies or do you differ?
- How do you work with supplier evaluation for risks and performance?
- What were your biggest motives for applying SSCM practices within your organization? And what were the immediate as well as the long-term effects that could be observed?
- How do you believe that you at Company X gain a competitive advantage?