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MASTER'S THESIS PROJECT

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EXECUTIVE SUMMARY

The circular economy system allows firms to achieve sustainability as this system helps to reduce the use of natural resources and the energy usage. The system is based on reduce and reuse principles. This economic system helps apparel firms to achieve social sustainability which is addressed by this study. The study is conducted on the global apparel industry as this industry faces an increasing sustainability challenge, especially social sustainability challenges.

The objective of the study is to find out the ways of achieving social sustainability throughout the global apparel value chain through circular economy. Therefore, the study tries to find the answer to the main research question, i.e., How can firms achieve social sustainability through circular economy (CE)? In order to answer the main research question, the study also seeks the answer of two other questions, firstly, how should CE include social sustainability aspects? And secondly, how social sustainability goals are achieved by using CE?

H&M, one of the biggest apparel multinationals of the world is selected as the case company for the study. The study was conducted using qualitative research method based on the data collected from different secondary sources regarding circular economy and social sustainability attainment of the case company.

The study finds that Circular Economy should include social sustainability aspects in every value chain stages by involving the stakeholders and taking the sustainability goal of every value chain stages into consideration. The study also finds that the social sustainability goals of the lead firms are achieved through an integration of CE activities with the social sustainability goals in every stage of the value chain where the buyer takes the lead and provides certain standardization and guidance to the suppling firms and achieves the goals by undertaking governance and control mechanisms.

This study endeavored to contribute to the global value chain, social sustainability, and circular economy literature. The findings of the study are expected to be helpful both for academics and practitioners.

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Chapter 1: Introduction and Problem Formulation

Sustainability is one of the utmost used buzzwords and have received great attention in the past two decades with the integration of economic, social, and environmental dimensions (Scoones, 2007) where social dimension has been explicitly included in terms of human wellbeing, human stakeholders and human rights (Murray, et al., 2017). In addition, the notion of sustainable development has previously defined as "development which meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987). This represents the idea that the development should aim at providing equity across and through the present and future generations within the developing and developed worlds. Currently, circular economy, also known as the CE model or circular business model, is a popular concept that move forward sustainability (Jouni Korhonen, 2018). CE has emerged as a paradigm comprising structures and strategies and targeted to attain the goals of sustainability through a circular approach in the production, process, and consumptions of products (Schröder et al., 2019). However, while the positive effects of CE on the environmental and economical dimensions of sustainability are discussed frequently in CE literature (Ghisellini et al., 2016), CE's contribution to social aspects is virtually silent on the social dimension of sustainability (Rana & Tajuddin, 2021), particularly, concentrating on redesigning the manufacturing actions and service systems that benefit the biosphere. While reduction of finite resources use, ecological renewal and survival clearly benefits the humankind, there is no clear recognition of the social aspects in the conceptualization of circular economy (Murray, et al., 2017). In this regard, this study will consider the understanding of how circular economy practices can contribute to achieve social sustainability for a company.

Circular economy is gaining increasing importance (Merli et al., 2018) and put forward the idea of the development of a new business model that shifts traditional linear economies of "take, make, dispose" (Zhu et al., 2018) into circular economy which is a combined procedure of reduce, reuse, and recycle activities in a looking for closed loop. (Alejandro Padilla-Rivera, 2020). CE model resembles natural performances pursuing ecological principles and arranges the economic functions following the system: resources- goods- renewable resources. Consequently, it is argued that these scheme helps to decrease pollution and heighten social development (Farong and Qiao, 2013) by diminishing the demand of primary resources, carbon emissions and freshwater use and quality. Furthermore, waste management of CE model reduces adverse effects on human health by limiting environmental pollution which in turn impacts directly on the rights to human health, safe environment, healthy food, safe shelter, and clean water (Velenturf and Purnell, 2015).

Typically, companies thus are categorized in the most polluting industries incline to practice CE business model to come across regulations, effects on customer perceptions about their social liability and contribution on climate change or gain legitimacy by showing as an environmentally friendly business operation in the eyes of the public to attain competitive advantages (Ivang and Rana, 2019).

It is undisputed that the global apparel industry is the second most polluting sector in the world, since it operates a resource-intensive globalized production system that causes 4 percent of the world waste, 10 percent of the world carbon emission and 20 percent of the entire industrial water pollution each year (Ivang and Rana, 2019). As a result, this has an impact on the industry workers who have excessively lengthy working hour and poor working condition to develop fast fashion products within shorter lead times to meet seasonal demands in the global value chain (Soroor et al., 2009). Even, workers put their lives in risk to produce more products at a lower price on the habitants where they work. In addition, apparel industry is part of a fashion

systems which promotes fast and mass consumption, customer buy apparel products to meet the demand for a short period of time that, in turn, become waste quickly and creates problems in the environment as well as the society (Gardetti, 2018). Though, Ellen MacArthur Foundation (2017) suggested that apparel industry adopts Circular business model practices and considered as a way to achieve sustainability in the value chain operation and management, research is lacking in addressing the social sustainability aspects in terms of community welfare, labor welfare, occupational health and safety issue, and responsible management within the concept of CE model (Kirchherr et al., 2017; Stewart and Niero, 2018). This draws urgent attention to develop a conceptual framework to show how circular economy should include social sustainability aspects and how social sociability aspects are linked with economic and environmental issues that CE model has exhibited.

Given the above context, I argue that a better understanding of CE through a unified perspective is necessary to boost CE implementation and make it a feasible way to attain social sustainability aspects. Hence, my study tries to address the following research questions,

How can firms achieve social sustainability through circular economy?

a. How should CE include social sustainability aspects? and

b. How social sustainability goals are achieved by using circular economy?

As the globalization of trade and production rises, global value chain (GVC) management is progressively shaped by quality, cost, civil society's expectations, rules and regulations of local and global institutions, business models and governance (Rana & Tajuddin, 2021). Hence, for apparel, multinational firms are facing constant pressure to meet the requirement of sustainability, particularly, the social sustainability expectations are increasing. Governance issue is an intermediate link and affects the stability between buyers and suppliers' relationships that facilitate to achieve sustainability. Hence, multinational firms with dispersed

units of production and operation need to assess the link between social sustainability aspects and the achievement of social sustainability goals through circular economy and how they are governed.

Therefore, this report aims to fill this gap in the literature by integrating social sustainability aspects and the goals of social sustainability within CE model from the global value chain points of view using governance issues as an influential factor. This study is carried out through investigating one of the world's largest apparel firms i.e., H&M. This apparel firm is chosen as it addresses many social sustainability issues within its circular economy practices at a high level throughout the dispersed value chain around the globe. In terms of this project, this study will be directed on Qualitative research method based on case study and will be carried out on subjectivist approach. In addition, the nature of the project will be exploratory while the data will be gathered from the secondary sources, such as, the company home page, the sustainability reports, and the annual reports of the selected case company by analyzing its activities in relation to managing and addressing social sustainability through circular economy.

This project will try to visualize the dynamics and future structure of the global apparel industry which can provide insights, open a new methodological opportunity to evaluate other apparel firms. The study looks for contributing to the global value chain, social sustainability, and circular economy literature. Whilst research findings can assist to the policy makers to form industrial strategies and regulations for individual apparel companies to leverage their business operation to the higher end of the global value chain with the integration of social sustainability aspects and goals through circular economy practices. Along with these, this study will help to open a new path to the systematic progress in creating the social sustainability and circular economy practices outlining future research themes that can contribute to advance the field.

Chapter 2: Methodology

2.1 Introduction

Methodology represents the conducting and organizing procedures of any research and arranging it as an integral way that is back up by clearly defined characteristics which pursues a logical and coherent basis with a temporal and realization structure (Novikov, A.M, and Novikov, D.A., 2013). This chapter will discuss the research design that has been applied in this project. Also, the philosophical position will be discussed with the attempt to cope with the philosophical presumption of the research which is related with the realities of the knowledge as well as the world. Also, research design section will cover the research process and the data collection method.

Research design choice is crucial for conducting and interpreting the findings. As different researchers possess different values which are reflected on the factors of the research process. For instance, one researcher might be concerned on the facts and numbers, on the other hand, other might focus on their feelings. Also, the problem statement plays as the influential factor to choose the research design for conducting the study (Saunders, Lewis, & Thornhill, 2009).

2.2. Philosophy of Science

Philosophy of science is concerned with creating scientific knowledge which is verified and used in the society (Beckholdm, 2018). Also, Beckholdm stated that philosophy of science contributes on facilitating the subject knowledge and helps to apply that knowledge in the relevant fields. However, it influences on the philosophical position of the researcher for developing and executing the study. In addition, prior philosophical knowledge regarding ontology, epistemology and methodology facilitates the researcher to develop the study and helps to explore the approach of answering the research questions from philosophical

perspective. (Kuada, 2012). However, two terms are important for when conducting the philosophy of science, thus are, ontology and epistemology.

2.2.1 Ontology

According to Corcho, O. (2005), ontology is an obvious specification of conceptualization which is a belief concerning the reality of the world outside of the researcher. Also, ontology directs the researcher by providing the essence of knowledge for investigation (Saunders et al., 2009). Ontology assumptions can be realized from two perspectives i.e., objectivism and subjectivism. While objectivist philosophy focuses on the single reality of the world, hence, considers the society as an independent reality. On the other hand, subjectivist ontology refers in holding multiple reality conducted by the action and perception of human being and dependent in nature (Kuada, 2012).

Therefore, this study is conducted by choosing the subjectivist approach as it focuses on social interactions and its developments. In terms of subjectivist approach, it is significant to investigate a situation in detail to realize the reality and this subjective meaning of social actors can be stated as social constructionism. Where the term social constructionism implies to understand the reality "as being socially constructed" (Saunders et al., 2009). Thus, individual actors observe and interpret the various situations from their own perspectives about the world.

The problem statement of the study is concerned with how firms can achieve social sustainability through circular economy in the apparel industry. For conducting this study, different social aspects concerning circular economy in the global value chain of a case company are explored and categorized. By that, the study has been conducted only focusing on the content of the company's activities regarding social issues and circular economy in their dispersed value chain without considering the reaction of their customers or followers. Therefore, it can be argued that the study has been operated with the subjectivist approach.

2.2.2 Epistemology

According to Kuada (2012), epistemology plays as a guideline for acquiring the knowledge by interpreting the nature of that knowledge and the accuracy of knowing it. At the same, Saunders et al. (2009) refers that epistemology is concerned with constituting acceptable knowledge for a study. Hence, epistemology deals with considering the knowledge suitable for the study as well as the research process. As the preferences are not same among the researcher, information will be differently considered relevant for one's study (Saunders et al., 2009). Therefore, researchers are differentiated into two categories, i.e., feelings researcher and resources researcher. Where 'feelings' researcher is embracing interpretivist approach and 'resources' researcher is taking positivist approach (Saunders et al., 2009).

While positivism paradigm represents the objectivist approach, interpretivism stands for the opposing subjectivist approach. Researcher that adopts the positivism approach mostly try to create a new insight to existing knowledge by false verifying hypotheses. On the other hand, interpretivism position involves researchers to interpret the elements of the study by integrating their human interest into it (Burrell & Morgan, 1979). However, Saunders et al. (2009) stated that business operation is unique or often highly dependent on a set of contexts or individual. In this regard, interpretivism approach suits very well cases of management and business research (Saunders et al., 2009). Therefore, this study has been followed on the interpretivism approach by taking an empathetic attitude to investigate the firm's social sustainability aspects in the lens of circular economy and focusing only on the firm's perspective for findings from global value chain point of view. Therefore, it can be argued that the study has been conducted with the interpretivism approach.

2.3 Research Method

Research method illustrates the research technique that has been followed to conduct the study. In terms of this project, qualitative technique has been adopted for collecting data. Also, the nature of the study has chosen exploratory which comply with qualitative approach (Gilbert A. Churchill & Lacobucci, 2005). According to Bryman and Bell (2007), qualitative method helps for building the relationship between the research and theory of any entities. Therefore, this research work has directed based on a case study analysis on H&M in terms of its social sustainability actions in the context of circular economy model.

2.4 Research Design

Research design represents the overall strategy to incorporate different elements of the study in a logical and consistent way, thereby, ensures the effective petition of the research problem that helps to constitute the blueprint for collecting, measuring, and analyzing the data (Malhotra, 2010). Which implies that this section interprets the data collection process and analysis procedure and those are discussed below:

2.4.1 Data Collection

In this part the data collection process of the study will be discussed in a detailed way.

2.4.1.1 Types of Data Sources

Usually, two types of data are used for conducting a research, thus are, Primary data and Secondary data. Primary data which is also known as raw data or original data, collected firsthand by researcher for addressing a specific research problem. On the other hand, secondary data refers to data that was originally collected by someone for other resource purposes (Malhotra, 2010). Therefore, this research has developed based on the secondary data sources.

2.4.1.2 The Database

In this study, some relevant and selected data sources have been selected to address and analyze the research problem. And these sources have been considering the strategies and structure it has developed in relation to achieve social sustainability goal by practicing circular economy. Hence, the following secondary sources has been used to prepare the database:

1. Official webpage of the firm.
2. Official sustainability home page of the firm.
3. Company's annual reports of 2018,2019, and 2020. And,
4. Company's sustainability reports of 2018, 2019, and 2020.

2.4.2 Selection of Case Companies:

This project has been conducted by selecting H&M as the case company. This firm has selected as the case company for several reasons, like, this firm is a leading apparel multinational operating across the world. The most important thing for choosing this firm is that it is a leader in sustainability practices specially the social sustainability. In addition, it has adopted circular economy model as a means to achieve social sustainability. Moreover, this company is emphasizing to raise social sustainability through the activities of circular economy across their global value chain and governs according to it. Moreover, the required data collection to address research problem are available on public domains.

2.4.3 Determining the Data Need

In this study, data has been determined depending on the research problem and the research questions. Some key words like circular economy, social sustainability, global value chain, governance structure, and apparel industry have been picked out from the research topics as well as the research question, and these kinds of key words facilitates to find out the final relevant data by complying with the literature review so that it can address the research

questions. Therefore, after reviewing the annual and sustainability report of H&M, six key stages of value chain concerning social sustainability and circular economy have been selected to collect the final data. Those vale chain actions are following:

1. Design.
2. Material choice.
3. Production processes.
4. Production use.
5. Product reuse and recycling. And,
6. Transportation and distribution.

2.4.4 Data Analysis

The data analysis part is directed by the collected data. After collecting the required data from the case company, these were stored in self-made database and then, utilized considering the nature of analysis. In this section, social sustainability strategies through circular economy approaches practiced in the value chain by H&M have been analyzed.

Chapter 3: Literature Review

3.1 Circular Economy and Social Sustainability

3.1.1 Circular Economy Conceptualization

Certainly, the idea behind the concept of circular economy has subsisted for a long time and has been gaining impetus since late 1970 (Geissdoerfer, et al., 2017). Greyson (2007) has claimed that Kenneth Boulding (1966) was the creator for the idea of circular economy. Boulding (1966) had proposed in his book named 'The Economics of the Coming Spaceship Earth` describing the world as closed as well as circular system including limited capacity and believed that the environment and the economy should coexist in an equilibrium way. Also, Boulding has emphasized that circular economy within the global economy is inevitable to guarantee the human life in the long run. Relying on Boulding´s ideas, several authors, like Ghisellini et al. (2016), Su et al. (2013), and Andersen (2007), have attributed the introduction of circular economy concept to Pearce and Turner (1990), investigating the influence of natural capital on economic systems providing the inputs for manufacturing and consumption and considering the outputs in the form of waste, and inquire into the linear as well as open-ended characteristics perspectives (Geissdoerfer, et al., 2017).

Currently, circular economy (CE) is a term which is promoted by the European union (EU), also, by various national governments like China, Japan, France, The Netherlands, Canada, Finland, and Sweden, as well as by different businesses of the world. However, the idea of circular economy and its practices have almost solely been led and developed by practitioners, i.e., business consultants, policymakers, business associations, and business foundations etc. (Korhonen, et al., 2018). It has mentioned by Oliveira, et al., (2021) that leading the schools of thought, which is related to circular economy appeared in the 1970s and earned attentions in 1990s. In addition, Geissdoerfer, et al., (2017) proposed these schools of thought as the contemporary understanding of CE and, figured out the practical applications to industrial

process as well as economic systems are evolving incorporating several features and their contributions that share the notion of closed loops. They (Homrich, et al., 2018) have pointed out some most incidental theoretical influences such as laws of ecology (Commoner, 1971), regenerative design (Lyle, 1994), biomimicry (Benyus, 2002), cradle-to-cradle (McDonough and Braungart, 2002), industrial ecology (Graedel and Allenby, 1995), natural capitalism (Lovins et al. 1999), the blue economy (Pauli, 2010), and performance economy (Stahel, 2010). (Homrich, et al., 2018)

Murray, et al., (2017) has categorized the term circular economy in two meaning, thus are, linguistic and descriptive meaning. Linguistically the term circular economy means the antonym of linear economy, a one-way system and has been referred to as a cowboy economy by Boulding (1966). Linear economy is defined as a production process that converts the natural resources into waste by which this kind of production of waste direct the erosion of the environment (Murray, et al., 2017). Such kind of deterioration in the environment happened in two ways, thus are, by removing the natural resources from the environment through unsustainable harvesting or mining; and, by reducing the value of natural resources due to pollution from waste. In case of descriptive meaning, circular economy is related to the notion of cycle and Murray, et al., (2017) has mentioned two cycles which are particularly important i.e., biogeochemical cycles and the thought of recycling the product. Hence, circular economy is linked to resources cycling. For many years, recycling has become a crucial part of sustainable practices and elemental of circular economy. Currently, circular economy is advanced in industrial symbiosis where each other's waste is used as resources by the firms and undesired outputs of one firm are used as important raw materials for another industrial production. Also, better manufacturing and maintenance increase the longevity of products and thus decreases the rate of replacement to reduce the resources. Hence, the three Rs (Reduce,

Reuse and Recycle) have become key concept to the idea of circular economy (Murray, et al., 2017).

Furthermore, Circular Economy has defined in different academic studies, for example, Patrick Schroeder, (2018) have reviewed the literature and the findings highlighted the fact that there is not commonly simple and agreed definition of circular economy. Also, among the 114 definitions of circular economy gathered, it has found that the scholars focus only to discuss about the CE model rather providing any specific definition on it (Kirchherr et al., 2017). On the other hand, Geissdoerfer, et al., (2017) argued that transitions towards the circular economy could bring stable benefits of a strong, innovative, and advantageous economy that stimulate the increasing interest not only among the policymakers but also to the scholars in deepening this affair. That means, the meaning, usefulness and assessment of CE are the continuous matter of scholarly debate. Accordingly, Webster (2015) circular economy is restorative by design that aims to keep materials, products, and components at their highest utility by maximizing the value at all the times. Also, Yuan et al. (2008) have added that the core of the CE is the circular or closed flow of components and the use of raw components along with energy by multiple phases. In addition, Bocken et al. (2016) categorized circular economy as the design and strategies of innovative business model that are practiced to slow, narrow and to close the resource loops. Hence, it indicates that cyclical closed-loop system is a common concept of the term Circular Economy that does not generate any excessive waste and whereof each waste can be turned into resources (Wysokinska, 2016). Moreover, Stahel and Reday (1976) stated some features of Circular Economy focusing on industrial economics. They had conceptualised a loop economy for describing industrial strategies in case of regional job creation, waste prevention, dematerialisation, and resource efficiency of the industrial economy. Also, Stahel (1982) underlined selling utilisation in lieu of owing of goods and considered this as the most pertinent model for sustainable business of a loop economy which allows industries to

maximize profit without manifesting risks and cost linked with waste. Korhonen et al., (2018) demonstrated circular economy from sustainability aspect. They stated circular economy as a sustainable development initiative which is aiming at the reduction of societal production and pattern of consumption by employing material cycles, resource renewable, and fountain energy flows in the conventional linear system (Korhonen, et al., 2018). Meanwhile, they have demonstrated circular economy as an essential mechanism for enhancing sustainable production as well as a probable empirical\pragmatic change towards in the direction of industrial transformation (Rana & Tajuddin, 2021). According to Mhatre et al. (2021) the circular economy is a composition of innovation, productivity, competitiveness, industrial strategy, and salary updating with the aim of environmental and socioeconomic benefit. Which implies that the implementation of circular economy initiatives allows an organization to recycle the materials of the products by creating a new industrial system that ultimately improve the global sustainability (Bayona-Saez et al., 2017).

A prevailing idea is well received by Kirchherr et al, (2017) where they stated that the concept of circular economy is associated with reducing, reusing, and recycling actions, while the requirement of systemic change is mostly not underlined. In these regards, the authors have defined CE as an economic process that replaces the idea of 'end of life' through reduction, reuse, recycling to restore the components of the products in the action of manufacturing, distribution, and consumption. Also, they have categorized three types of operations levels regarding CE, thus are, micro level (i.e., products, companies, and consumers), meso level (i.e., eco- industrial parks) and macro level (i.e., city, region, and nation) with the aim of gaining sustainable development that simultaneously generate the quality of environment, economic prosperity as well as social equity to ensure the betterment of present and future generations (Kirchherr et al., 2017). After analyzing different contributions of CE, Geissdoerfer, et al., (2017) stated that circular economy is a regenerative function in which raw material input and

waste, emission in the production systems as well as energy leakage are reduced through narrowing, slowing, and closing the materials and energy loops with the help of long-lasting design, repair, maintenance, remanufacturing, refurbishing, reuse, and recycling (Geissdoerfer, et al., 2017).

A rigorous study has been driven by Ghisellini et al. (2016) where they have reviewed 155 articles on the Circular Economy literature, and they argued that most work concentrate only to the narrow interpretation prominent principles like of 3Rs (reduce, reuse, and recycle) on waste management rather than focusing on far- reaching options of these core approach regarding CE. Here, the fist R, 'reduction' represents the exertion of maintaining eco-efficiency in the production and consumption of the products aiming at creating value by reducing environmental impact (Huppes & Ishikawa, 2009). Also, the second R 'reuse' implies an innovative design of business models and products in a 'disassembly and reuse' basis (Ghisellini et al., 2016). And the third R 'recycle' represents any type of recovery functions by which the waste materials are collected to reprocess into new materials, products, or substances for original use or for further production (Ghisellini et al., 2016). Prieto-Sandoval et al. (2018) has identified and suggested four key components that should be subjected in the definition of circular economy, thus are, "(1) the recirculation of resources and energy while minimizing the demand for resources and value recovery from waste, (2) a multilevel approach, (3) means for achieving sustainable development, and (4) close ties with social innovation" (Prieto-Sandoval, et al., 2018). Furthermore, the idea of CE has drawn attention among the numerous influencing governments and intergovernmental agencies. For example, an eminent definition has been captured from the EU Action Plan for CE that the value of materials and products is compiled as long as possible, resource and waste use are decreased, and resources are managed in the economy till the end of the products life by repeat use to create further value (European Commission, 2015). Therefore, Circular economy is an approach for gaining sustainable

development through some strategies by minimizing industry input and maintaining the regenerative resources appropriately that includes ensuring efficiency of utilizing non-hazardous and renewable materials, enhancing the life cycle of product as well as designing efficiency, repair, recycling, and reuse to focus on the minimization of resource and waste (Jesus, et al., 2018).

3.1.2 CE Conceptualization by Ellen MacArthur Foundation

Among the practitioners and firms, the Ellen MacArthur Foundation, a non-profit organization, strives to exhibit a framework to the idea of circular economy and considered as one of its principal advocates. One of the most renowned definitions regarding circular economy has been offered and disseminated by Ellen MacArthur Foundation, "A circular economy is one that is restorative and regenerative by design and aims to keep products, components, and materials at their highest utility and value at all times, distinguishing between technical and biological cycles" (Ellen MacArthur Foundation, 2016). Also, this foundation aims to transform to a renewable energy resolution and to build natural, economic, and social capital (Ellen Macarthur Foundation, 2017) by driving three principles, thus are, (1) designing for waste and pollution, (2) upbringing materials and products in use, (3) regenerating natural system (Ellen Macarthur Foundation, 2017).

This definition and interpretation of circular economy concentrates on regenerating a waste less natural system by decreasing the use of natural capital so that it can contribute on building the environmental, economic, and social resources which can be stated as renewable energy solution. It entails that circular economy is take-make-waste extractive production system which focuses on society- wide benefits by redefining growth as well as building a restorative economy (Ellen Macarthur Foundation, 2017). In addition, Ellen Macarthur Foundation has recognized four important building blocks for Circular Economy Model, thus are, (1) Circular

Economy Design, (2) Business Models, (3) Reverse Cycles, and (4) Enablers and Favourable System Conditions (Ellen Macarthur Foundation, 2017).

Circular economy design

In case of Circular Economy Design it is needed to develop some core competencies including advanced skills, information sets as well as working method by the companies to simplify reuse, recycling, and cascading. Several important areas are considered for successful circular economy design includes material selection, standardized components, designed to last products, design for easy end of life sorting, separation or reuse of materials and product, and design for producing that facilitate the possible use of by-products and wastes (Ellen Macarthur Foundation, 2017).

Business Models

Innovative business models are required to shift to a circular economy that either replace the existing ones or grab new scopes or opportunities which play as a motivator to the mainstream businesses to practice circular by using their scale and vertical integration. While these kind of new materials, products, and models, will lead to a profitable circular economy that will encourage the other players to practice and follow the circular economy as well as expand geographically (Ellen Macarthur Foundation, 2017).

Reverse Cycles

Reverse Cycles is an important buildings blocks for a productive circular economy that requires new and additional skills for the ultimate return of the materials to the soil and back or reuse in the industrial production system by various activities, thus are, delivery logistics, warehousing, sorting, power generation, risk management, and also, molecular biology as well as polymer chemistry with better quality collection, cost efficient, better treatment systems, and successful segmentation for end-of-life products (Ellen Macarthur Foundation, 2017).

Enablers and Favourable System Conditions

A sustainable circular economy can be ensured by reusing the materials and higher resource productivity where some enablers and favorable system conditions are required to make it more effective, thus are, collaboration, providing a suitable set of international environmental rules, rethinking incentives, access to financing, and leading by example and driving up scale fast (Ellen Macarthur Foundation, 2017).

A butterfly diagram has been illustrated by Ellen Macarthur Foundation that describe the closed loop as well as the circular economy and the principles by two butterfly wings where the right side presents about the technical and the left side presents the biological closed loop (Homrich, et al., 2018).

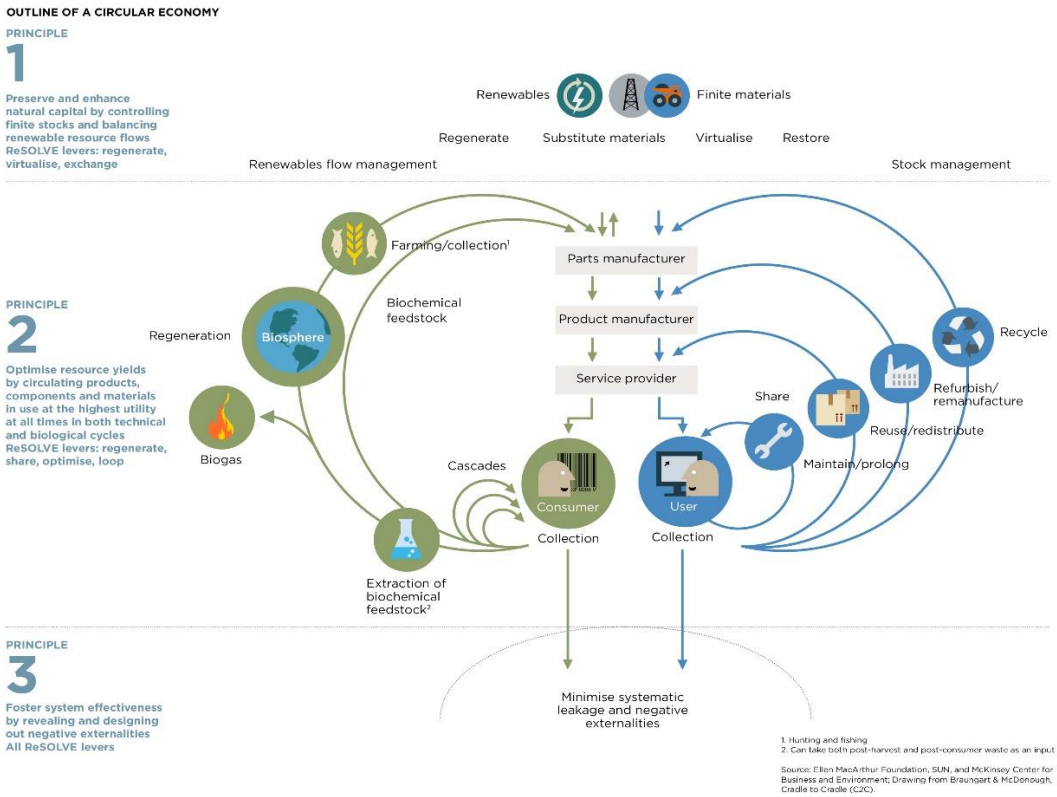

Figure 3.1: Outline of a Circular Economy (Source: Ellen Macarthur Foundation)

3.1.3 Social Sustainability Conceptualization

The term sustainability is one of the most extensively used buzzwords of the past two decades (Scoones, 2007). Particularly, the notion of sustainability emerged in the 1960s concerning about environmental deterioration resulting from poor management of resources (McKenzie, 2004). This implies that the origin of sustainability is concerned with the impact of society swallowing natural resources faster that those could be replaced. Consequently, in 1960, the Organization for Economic Cooperation and Development was built for promoting policies to stimulate the maximum employment and sustainable economic growth among the member countries in order to increase the living standards (McKenzie, 2004). In the late 1980s, The United Nations Commission on Environment and Development (UNCED) was established, thus, the UNCED's report Our Common Future (1987) provides a commonly cited definition which is also known as the Brundtland definition of sustainable development and described it as the development that fulfil the current needs and wants without compromising the capability of future generations to satisfy their own needs and wants (WCED 1987a: 43). However, sustainable development is characterized with a familiar typology comprising of three pillars, thus are, environmental, social, and economical or the three "Es" (Environment, Equity, and Economy) (Boström, 2012). Also, John Elkington, an environmentalist and economist, expressed these three pillars of sustainability as 'triple bottom line' approach (Elkington, 1998) and then, proposed them as 3P formulation of "people, planet, and profit" in 2004 (Hou, et al., 2019). Usually, the interrelationship among the environmental, economic, and social aspects of sustainability is illustrated by one of two models (Barron and Gauntlett, 2002) which is illustrated below:

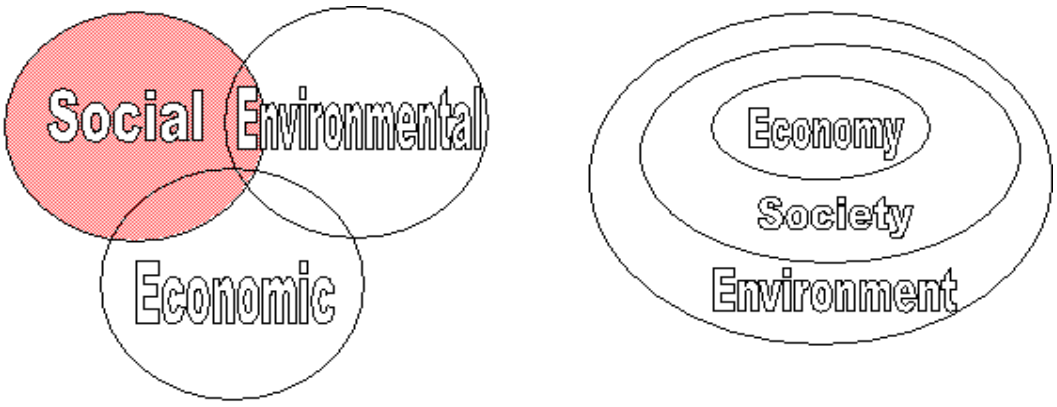

Figure 3.2: Interrelationship among the environmental, economic, and social aspects of sustainability (Source: Barron and Gauntlett, 2002)

Given the above, in the first model from the right (concentric circles model) features the three concentric spheres where the 'social' and 'economic' spheres are represented as subject on the wellness of the environmental sphere. On the other hand, the second model (interlocking circles model) is a more recent and widespread used model of sustainability where three spheres are portrayed equally and recognized as the 'overlapping circles' model (McKenzie, 2004). However, McKenzie (2004) emphasized that any organization or community those are practicing the 'overlapping circles' model ought to include social aspects of sustainability right away as a concern and consider it as an equal to economic and environmental sustainability. Whilst, in recent years social sustainability has gained significant importance and awareness as a fundamental dimension of sustainable development (Labuschagne and Brent, 2006). Thus, the United Nations Conference on sustainable Development (UNCSD) underlined aspects of social sustainability in its agenda-21 and narrated for creating of productive employment, promoting economic growth, achieving equality, and reducing the use of natural resources to protect the environment (UNCSD, 1998). Further, the United Nations Divisions for Sustainable Development (UNDSD) classified indicators within the framework for social dimension of

sustainable development, includes, equity, health, education, housing, population, and security under the main theme (UNDSD, 2001). Further, the Organization for Economic Cooperation and Development (OECD) described social sustainability within two diverse dimensions, i.e., human, and social (Strange, 2008). Whist, the human dimensions addresses the man's skills, knowledge and talent, abilities to define an individual's performance in the job market as well as the development of economy and as a result, social capital naturalizes the collective actions which are beneficial for the society (Hobbs, 2000; Milward, 2003).In addition, with the increased focus on this pillar of sustainability, social sustainability has been defined concentrating on the implications and indicators by many scholars. For instance, social sustainability has broadly defined by Chiu (2003) where he stated this dimension of sustainability as the improvement and maintenance of wellbeing of current as well as the future generations. According to McKenzie (2004), social sustainability is a process that can achieve life-enhancing condition within communities. In a broad sense, the condition incorporated with equity of access to basic needs, includes, education, health care, employment, transportation, recreation, and housing as well as creating equity between present and future generations (McKenzie, 2004). Also, numerous key themes, such as, identity, sense of place, culture, empowerment, participation, access, health and safety, social capital, demographic change, social mixing and cohesion, well-being, happiness, quality of life are identified by Colantonio (2008a and 2008b) to show how equity and basic needs are consistently adopted as the basic pillars of social sustainability. Moreover, Davidson and Wilson (2009) interpreted social sustainability from three perspectives, thus are, (1) development-oriented perspective that focuses on the development of social relations, values, structures, and customs; (2) environment-oriented perspective mainly addresses the development of social conditions, norms, and preferences that facilitates individuals in ecologically sustainable actions concerning intergenerational equality and resource distribution; (3) people-oriented

perspective emphasizes on the prevention of social exclusion and polarization as well as maintenance of social cohesion (Davidson and Wilson, 2009).

Social sustainability is suggested as 'a concept in chaos' by Vallance (2011) because it seems challenging to define and apply. This seems to be specially the case where some authors have tried to elaborate their definition. Here, two of the most expansive elaborations comes from vallance (2011) and Magis & Shinn (2009) where they tried to summrize varing approaches of social sustainability by organizing its indicators under the broad catagorical concerns of values, well-being, agency, inequality, power and justice (Hicks et al., 2016). Further, vallance (2011) classified social sustainability into three categories, such as, (1) development social sustainability that focuses on the fundamental needs, includes, equity, justice, and creation of social capital; (2) bridge social sustainability that addresses the changes of behaviors to gather the objectives of physical environment; and (3) maintenance social sustainability that directs to the conservation of elements such as socio cultural patterns and practices those can be sustained for long term. On the other hand, Magis & Shinn (2009) believe that businesses are folloiwng the social aspects of sustainability by interpreting it as the corporate philanthropy or policies to get work/familiy balance. Also, they attemted to identify the social pillar of sustainabilty from different perspectives after getting inspiration from a more thought-out and satisfactory definition provided by Harris and Goodwin (2001): "a socially sustainable system must achieve fairness in distribution and opportunity, adequate provision of social services, including health and education, gender equity, and political accountability and participation" (Harris and Goodwin, 2001). Consequently, Magis & Shinn (2009) explored four emergent principles, i.e., human well-being, equity, democratic civil society, and democratic government as the central constituents of social sustainability and thus are described in the traditions of human-centered development and community well-being concerning sustainability to facilitate and define social well-being and, hence, provide a rich foundation for creating the social

sustainability. Whilst they mentioned that human-centered development is concentrated on the basic needs, human development, and freedom; and community Well-being is associated with ensuring education, health care, employment, access to public goods and services, housing, transportation, social justice, equal access, informed public dialogue, decision-making collaboration and social integration as well as inclusion (Magis & Shinn, 2009).

Therefore, social sustainability addresses the various social issues in the society for conducting sustainability of the human being.

3.1.4 Social Sustainability in CE

Shifting towards a circular economy could provide benefits like decreasing pressure on the environment, stimulating innovation, improving the safety of raw materials supply, advancing economic growth, increasing competitiveness, creating jobs, and increasing the quality of life by using more innovative and durable products that bring together a huge potential for creating value within the societal spheres (Anon., 2021). On the other hand, Ellen MacArthur Foundation (2017) outlined that circular economy will not only benefit to the business, the economy, and the environment but also to the individual at a large by increasing disposable income, greater utility, reducing obsolescence as well as improving living condition with the association of health impacts based on the principles of circularity. In addition, Oliveira, et al., (2021) circular economy as a source to create social benefits through increased welfare for lower-income households, longer product lifetime in the use phase, and job creation where Korhonen, et al., (2018) emphasized on the importance to include some other social aspects in circular economy as main issues, thus are, increased employment, establishing the sharing economy and participative democratic decisions which implies that circular economy approaches benefits some aspects of social sustainability. Therefore, (Alejandro Padilla-Rivera, 2020) advocated a more rigorous and comprehensive insights about the social impact

of CE by the inclusion of some frequented social aspects such as, Employment, Social Inclusion (Equity), Sharing Economy/Collaborative Economy, Participation and Local Democracy, and Health and Safety (Occupational and Consumer), in CE and described how these social aspects are integrated and dealt in CE strategies by providing a compressive overview which are given below:

- Employment
- Social Inclusion (Equity)
- Sharing Economy/Collaborative Economy
- Participation and Local Democracy and
- Health and Safety (Occupational and Consumer)

Employment:

Employment in terms of circular economy has been defined by Burger, et al., (2019) as "green jobs" or jobs that contribute considerably to preserve and restore the quality of the environment. According to Alejandro Padilla-Rivera, (2020) CE employment opportunities are created derived from the environmental policies in terms of improving energy efficiency by means of greener technologies, increased renewable energy sources, lower carbon emissions, smarter strategies concerning better management systems of waste, etc. As a result, all these new developments would call for the formation of new business models to incorporate green jobs. In this sense, employment in CE plays a significant role in overcoming the socio-economic challenges for an exponentially rising population in a moving economy. Jobs within a circular economy can be made by substitution, newly created or redefined.

However, a considerable development of the circular economy would require some types of higher skilled employment. In this sense, development of educational programs and proper

training lead to the evolvement of the required skills as well as enhancing labor productivity to move forward sustainability.

Social Inclusion (Equity):

Equity is one of the important aspects of social sustainability to improve social justice and human rights as well as improving social benefits for poverty alleviation (Alejandro Padilla-Rivera, 2020). According to Xue, et al., (2010) and Geng and Dobertein (2008), CE can contribute to improve social welfare distribution and subsequently helps for making social justice. In this regard some attempts have been considered to measure social equity like in terms of CE Zhijun and Nailing (2007) recommended that Gross Domestic Product (GDP) increment can be a significant indicator for social equity. This is because, CE implementation can stimulant economic as well as social growth in certain areas and can be incorporated with a crucial increase in GDP.

Sharing Economy/Collaborative Economy

According to Heinrichs, (2013) the Sharing Economy is an economic model that aims to acquire, provide, and share of goods, services or other resources on a peer-to-peer basis and maximize the utility of benefits which is often alleviated by a community-based network platform. However, it is suggested by Cherry, et al., (2018) that Sharing Economy is conducted by three main assets, thus are, (1) more resilient and efficient apply of financial resources (economy), (2) proper utilization of natural resources (environmental) and (3) social interactions among the people profoundly (social). In this sense, the sharing economy not only associated with the resource management but also incorporated with creative expression, economic empowerment, and community-building.

Sharing models consist of a very narrow part of CE systems which is mostly associated with the promotion of small enterprises and to have cleaner implications through this economic

system, where the firms need to adopt digital technologies to optimize the production and material flows and integrate the customers into the CE solutions (Alejandro Padilla-Rivera, 2020)

Participation and Local Democracy

According to Bolger, (2019) participation and Local democracy can serve as a local mechanism by which people get educated and information is facilitated to enable people to express their own opinion on the making of circularity decisions in a transparent, reasonable, and multi oriented way. Since these decisions raise a wider understanding about the circular economy, increase legitimacy and accentuates local empowerment. There are three types of participation have recognized in terms of environmental issues, i.e., participation via information, participation regarding planning process and participation in the finance decisions. These participations are conducted by pursuing different goals and scopes relating to the perceptions of bio economy, of consumer regarding CE strategies for reducing waste as well as stakeholders' interest to forward a potentially sustainable circular economy (Alejandro Padilla-Rivera, 2020).

Health and Safety (Occupational and Consumer)

Health and safety are most important aspects of shifting towards a circular economy. In this regard, priorities are dealt with the concern of major disease, creating resilient communities and supportive environment to strengthen public health systems by providing a range of efficiency and cost saving measures with the aim of improved well-being and quality of life. In addition, transition to a CE and production systems effect on the health issue, both positively, e.g., by reducing air pollution, and negatively, e.g., unsafe chemicals are not carried on minimizing health risk (Garrido-Azevedo, et al., 2017). At the same, Alejandro Padilla-Rivera,

(2020) stated that there have been different direct (i.e., product safety, studies for chemicals safety and e-waste) and indirect action (i.e., reduction of global environmental pollution resulting from production and consumption systems) undertaken to improve health consequences.

3.2 Circular Economy and Social Sustainability in the Apparel Global Value Chain

The value chain concept was first introduced by Michael Porter through his influential book "competitive Advantage" in 1985 where he stated the role of value chain in competitive strategies for a company (Porter, 1985). Porter has identified value chain as a set of actions that a firm operates to provide a valuable product or service in the target market. The chain, as the name implies, interprets a joined set of value adding actions which are applied and executed from raw materials input to consumptions (Fearne, et al., 2012). Moving from concept to definition, Kaplinsky (2004) outlined that value chain is a series of functions that are imperative for bringing a product from an idea to end use through involving abundance physical transformation with the assistance of producer and making delivery of the products to end users as well as handling the disposal after the final use. Thus, Porter (1985) designed the value chain model in a series of actions consisting of primary and secondary activities where the primary activities are connected directly with manufacture, sales, and distribution; and secondary activities such as, planning, finance, R&D and human resources, that are carried out to support the primary activities. In addition, value chain is considered as an integral part of a strategic business planning by (WBCSD, 2011) and helps to create an enabling business environment for developing and achieving sustainable competitive advantages (Hopkins, 2009). While these sounds similar to supply chain, (Wahl & Bull, 2014) stated that value chain thinking is distinctive to supply chain thinking where the supply chain focuses on managing the cost reduction and efficiency in the flow of information, materials and finance among the drivers in the chain, and, on the other hand, value chain concentrates on adding value throughout the

chain and delivering these value added products to the final consumer (Feller et al. 2006; International Trade Centre 2011a). Value chain management is an integral part of any business operation. This is because, effective information sharing helps to constitute decision and resource allocation properly and acts as a partnership in the development of systems and products which is defined by consumers predilection fundamentally, it becomes much difficult for imitating to the competitors (Fearne, 2009). Therefore, global value chain is an integral part of strategic business planning that includes the life cycle of a products associated with material sourcing, production, consumption, and disposal/ disposal processes (WBCSD, 2011).

"Globalization" is more recent, implies functional unification between globally dispersed activities and motivates firms to reorganize their trading operations internationally through outsourcing activities. Consequently, international investments, trade and production are carried out within global value chain (GVCs) where value adding activities are organized throughout different stages of the production and consumption of products in a coordinated basis across national boundaries considering the availability of required materials and skills at a competitive quality and cost (Gereffi & Memedovic, 2003). Fundamentally, commercial, and industrial firms both have promoted globalization by establishing two types of economic networks in the global value chain, thus are, "producer-driven", and "buyer-driven". In the producer driven global value chain, usually, large transnational manufacturers play the pivotal role to coordinate the production networks including the backward and forward linkages e.g., GVCs in technology and capital-intensive types of industries, such as, aircraft, automobiles, and computers. On the other hand, in the buyer driven GVC, large retailers, branded manufacturers, and marketers play the central roles in organizing the decentralized production networks in various exporting countries thus are situated typically in the developing countries (Gereffi & Memedovic, 2003). In other words, buyer-driven has become common in labor-intensive and consumer-goods industries, such as, apparel is contemplated as the classic

example of "buyer-driven" global value chain. According to Fernandez-stark et al (2011), since the 1970s, apparel industry has been utilized as the steppingstone by the developed and developing countries for pursuing export-oriented industrialization across the world. As apparel is a labor-intensive industry and its production bases concentrated mostly in the Asia, generally in China, the Southeast Asian Region (SEAR) and the South Asian Region (SAR) (Fernandez-Stark, et al., 2011). On the other hand, the biggest importers of the readymade apparel bases mostly concentrated in the United States (US) and European Union (EU) because of their well-established retail chain. This is because, World Trade Organization (WTO) voided Multi-Fibre Agreement (MFA) in the time frame between 1995 and 2005, preferential tariff and removing quotas offered to countries those are associated with exporting to the EU and US, thus, developing countries became more competitive in production sector with its low workforce. While the innovation, design, sales, marketing, and distribution of the product are still controlled and done by the powerful, large retailers in the importing countries (Fernandez-Stark, et al., 2011).

Hence, as of many other sectors, the apparel global value chain is composed of five significant segments, thus are, (1) raw material supply, (2) provision of components, (3) production network, (4) export channels, and (5) marketing networks (Gereffi & Memedovic, 2003).

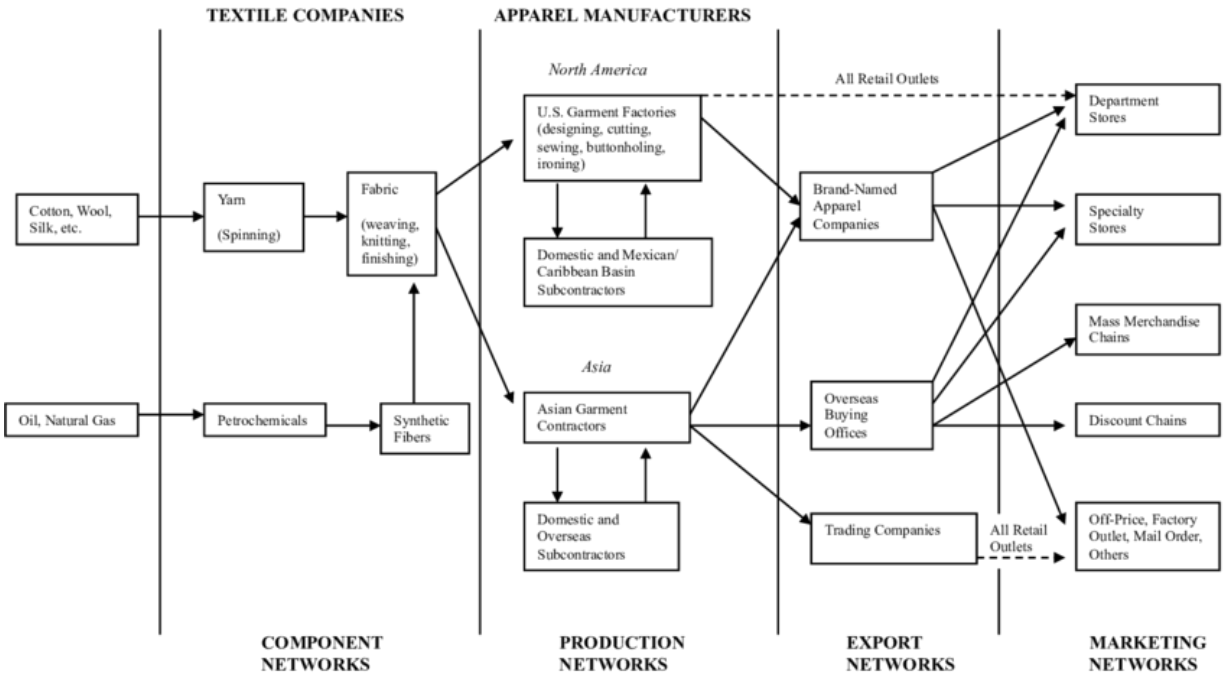

Figure 3.3 : Apparel global value chain (Source Gereffi & Memedovic, 2003)

Therefore, the apparel global value chain begins by the large retailers with well established brands and strong distribution networks in the importing countries. Usually, the design of clothing is carried out by the retailer which they would like to sell in the upcoming season and outsource the production portion from the developing countries to keep the production cost lower. As a result, the lead firms are dominating the apparel industry as the apparel manufacturer are dependent on the large retailers and neither they have the brand nor have the power to access in the end market directly. Furthermore, Gereffi & Memedovic (2003) illustrated that apparel industry is deemed to be buyer- driven chain as apparel innovation mostly lies on the design and marketing than the manufacturing know-how which makes it relatively easier for the lead firms to reserve more power and control in the global value chain.

To understand how this section of work happens and how different initiatives are implemented in the apparel global value chain, six remarkable value-adding activities are identified and illustrated by (Fernandez-Stark, et al., 2011), thus are, (1) research and new product development (R&D), (2) design, (3) production, (4) logistics (purchasing and distribution), (5) marketing and branding, and (6) services.

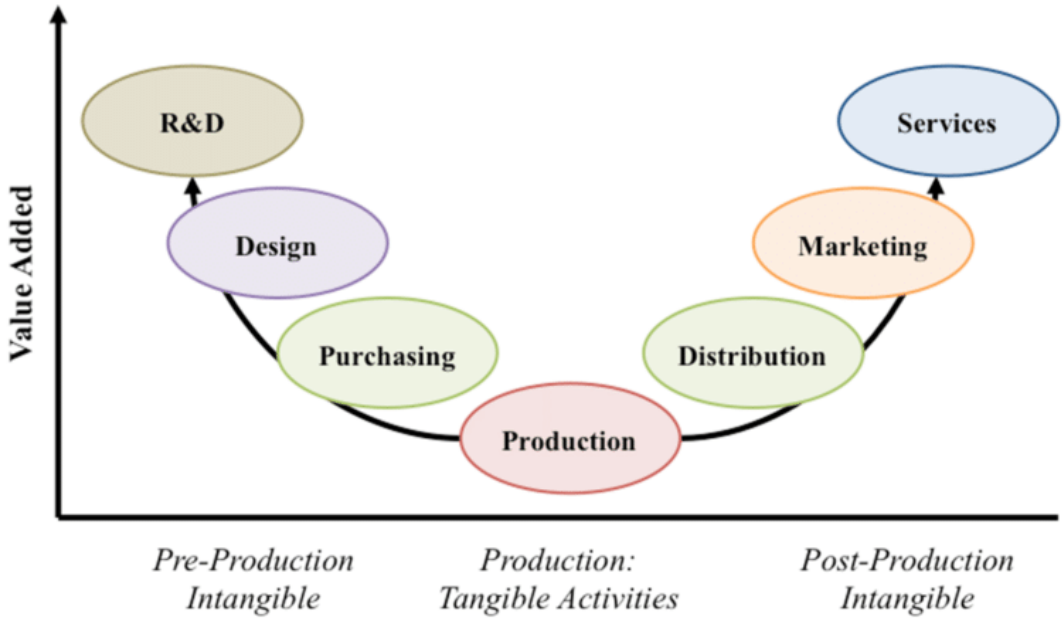

Figure 3.4: Curve of Value-Added Stages in the Apparel Global Value Chain (Source: Fernandez-Stark, et al., (2011))

However, the curve of the value-added stages proposed by Fernandez-Stark, et al. (2011) has discussed below from the circular economy model and social sustainability point of view which depicts how social sustainability can be achieved through circular economy in various stages of the apparel global value chain by the retailers.

Research and New Product Development (R&D):

The activity of this value-added stage is related to research and development for improving the process, the physical product, market, and the consumer as well (Fernandez-Stark, et al., 2011). For apparel industry, this stage is a dynamic process as it is characterized by high seasonal consumer demand (Bandinelli, et al., 2013). In addition, according to Armstrong & LeHew (2011) firms should innovate apparel products thus are competent for producing, using, and can meet the demand of consumer utility. As a result, increasing demand and raising pressure for social compliance by the stakeholders has been forcing the apparel retailers to newly develop and innovate their business model through circular economy which is seen to be highly valuable for facilitating corporate renewal and transformation to sustain organizational performance and competitive advantage thereby particularly focusing on social aspects (Beyer & Arnold, 2021).where, this innovations is emerging in the form of developments in production and manufacturing technologies, less impactful fibres, improvements of competency in recycling technology etc. (Haeggblom & Budde, 2021). Along with these, Gmelin & Seuring (2014) emphasized to address some social sustainability aspects (i.e., social skills, learning behavior, employee motivation and loyalty) in the research and new product development stage of apparel industry for the benefit of human beings.

Design:

This stage is associated with offering aesthetic design services for the components as well as products by the people and companies throughout the value chain. Design and style activities play the pivotal role for drawing attention, cutting costs for production, improving the performance, and achieving a strong competitive advantage in the market (Fernandez-Stark, et al., 2011). Therefore, Frederick & Daly (2019) has divided designer into two categories, i.e., creative design and technical design. In the creative design, the designers are traditionally

involved to sketch and generate fashion ideas those are featured in exhibitions. On the other hand, the technical design involved to translate those creative design ideas into garments. For apparel industry, design stage of the global value chain is the core competency, firms those are working in the high-end segment of the market continuing their design functions in-house, meanwhile for consumer brand and retailers, the design tendencies are arranged by the high-end segment of the market and open to outsource design functions from other companies (Frederick & Daly, 2019). However, while the innovations are ongoing and operated, nevertheless, problems remain with the massive amounts of apparels are manufactured and consumed each year, where only less than 1% are apparels are recycled (Haeggblom & Budde, 2021). In addition to these adverse impacts, apparel products should be designed with the intention to circulate and can be regenerated at the end of life into a fresh raw ingredient and able to loop back into economy (Green Strategy, 2020). To design for circularity, various strategies are influenced by the recyclers, such as, designing for longevity, material cyclability, and adaptability (Haeggblom & Budde, 2021). In addition, design strategies are incorporated with the adaptation of ethical and social concerns assist to decrease the negative impact to the human beings (Grose, 2017) by considering the social class, groups, culture, lifestyle, values/norms (Nerurkar, 2016). Therefore, design for functional durability and emotional durability (Haeggblom & Budde, 2021) creates deeper satisfyiying use experience to the consumer.

Purchasing/Sourcing (Inbound):

In the apparel GVC, this stage includes the inbound process involved sourcing of materials such as yarn, fabrics, trim, and accessories purchasing and transport these textile products where the inputs are evaluated to align with the required design and associated with the final product characteristics (Frederick & Daly, 2019). It refers to the physical transportation of the products by managing and providing the required equipment and technology to coordinate the

supply chain where logistics can be coordinated both in domestic and overseas (Fernandez-Stark, et al., 2011). However, sustainable purchasing adoption have attained significance by the multinational buyers of the apparel industry (Boström et al. 2012). Seuring and Müller, (2008) suggested two important categories with high relevance for sustainable procurement. The first category includes the supplier's selection and assessment/monitoring, and the second category is supplier development through collaborations programs. Where, sustainable supplier selection criteria concerned with social and ecological aspects (Koep, et al., 2021). In the apparel industry, for purchasing, Winter and Lasch (2016) have focused three main ecological criteria, thus are, End-of-pipe control (wastewater treatment system), use of environmentally friendly material (recycled wool), and carbon and hazardous substance management (treating chemicals and further toxic substances) (Koep, et al., 2021). These procurement criteria are linked to the revealing guidance's of Global Reporting Initiative (GRI) (2013) concerning biodiversity, energy, emissions, compliance and transport materials used, water, products and services, and effluents and waste.

On the other hand, integrating social criteria into sourcing decisions have sorted into internal (workers' rights, health and safety, and quality of workers life) and external social performance (inclusion of marginalized workers, local community support, and social safety for community) by the buyer firms (Koep, et al., 2021). Consequently, these criteria transformed to firm's code of conduct and suppliers are requested to proposed to sign by retailers to guarantee the fulfillment of standards. Thus, the verification of the supplier performance can be conducted in different ways, such as, self-reported data, required criteria catalogues, supplier ratings and rankings, overall performance assessments, audit, and independent or third-party monitoring and certification (Koep, et al., 2021).

Production:

Usually, apparel production is related to cut and sew of knitted fabric or woven as well as knit apparel directly from yarn thus includes a diverse range of activities to making full lines of custom and ready-to-wear apparel. Generally, apparel manufacturers can be subcontractors, contractors, jobbers, or tailors who produce custom finished wearable garments for individual clients where materials are owned by other firms (Fernandez-Stark, et al., 2011). This is because, a large segment of the work is labor-intensive, requires simple technology and generates low fixed costs, as a result, these features have motivated the move to low-cost places, especially in the developing countries. In contrast, production of textile demands higher worker skills, more scale and capital intensive, hence, it remains partly in developed countries or transfer towards middle-income countries (Frederick & Daly, 2019).

However, according to (McKinney, et al., 2020) apparel industry is the main contributor to lead serious ecological damage by the production process as apparel productions requires huge amounts of water and energy, use of harmful chemical substances, and generates a large amount of waste. Consequently, these ecological damage cause negative changes to the finite world resources as well as in the society affecting on the health of human lives, especially, the industry workers who have excessively long working hours and risking their lives to produce apparel in unhealthy condition. in the society. Hence, Pullman et al., (2009) suggested that manufacturer can practice a wide range of social concerns, such as, employment, social inclusion (equity), sharing economy/collaborative economy, participation and local democracy, and, health and safety (occupational and consumer) (Alejandro Padilla-Rivera, 2020) that lead to a favorable working environment through ensuring a healthy life of the people, including employees, customers as well as the social community. Moreover, training and required skills development are necessary for to ensure expected quality levels of the products. Currently, in the production section of the apparel value chain, several standards

guidelines, and policies, like, UN Global Guidelines, Organization for Economic Cooperation and Development (OECD) guidelines, Global Reporting Initiatives (GRI), and ILO Tripartite Declaration of Principles on Multinationals Enterprise and Social Policy, are conducted to implement social sustainability aspects (Khan & Rodrigues, 2015).

Transportation/Distribution (Outbound):

This stage of the global value chain facilitates building business -to-business relationships to move garments to customers. After apparel is produced, either the foreign intermediary buying offices or the brand name retailer or different kinds of network channels, such as, logistics firms, agents, and wholesalers those are responsible in value-adding actions outside of production and begin to keep on distribution activities for bringing the finished apparel products to the retailers (Fernandez-Stark, et al., 2011). However, transportation/distribution is crucial tool for developing and closing the loop of the circular economy model. It is helpful to link between resources and products, and products and final consumers. From sustainability point of view, transportation is conducted for distribution of goods in sustainable manner taking into consideration of social and environmental factors focusing on the reduction of energy consumption, and waste (Seroka-Stolka & Ociepa-Kubicka, 2019). Also, circular economy approach requires resource management, hence, collecting and transportation of waste is a crucial process to minimize the adverse impact on natural environment (Nowakowski & Mrówczyńska, 2018). Therefore, Turoń & Czech (2016) mentioned some common practices of fair and responsible/ sustainable transport focusing on the idea of circular economy, thus are, reduction of CO2 emissions, alternative fuel vehicles, eco-driving trainings for drivers, sustainable car fleet management, using alternative types of vehicles with powetrains (electric, hybrid) like cargo bikes.

Marketing:

This segment of the global value chain is considered as the highest value addition stage and devoted to several kinds of activities including product pricing, selling, and distributing the physical apparel product as well as mainly apparel branding and marketing by the retailer firms. Usually, apparel is sold and to the end consumers, institutions, and government without making any physical alteration by the retailer (Fernandez-Stark, et al., 2011). However, Chamberlin & Boks (2018) referred that transition towards circular economy need to raise consumer involvement. That's why firms seek to influence the relationship as well as consumers' behavior trough marketing and communication practices. Especially, for circular marketing and sustainable consumption, Chamberlin & Boks (2018) recognized four principles of circular economy as representative of business to consumers, these are, longevity (resisting obsolescence or encouraging long use), leasing (servitization, slowing the loop by allowing access over ownership), reuse (lengthened use, or ceasing obsolescence through by product life), and recycling (recovery, or capsizing obsolescence by extending material life) (Chamberlin & Boks, 2018).

Services:

This stage refers to any kinds of actions that a firm or industry deliver to its employees, buyers, or suppliers, typically, a way to differentiate itself from competitors by offering information regarding apparel fashion trends and businesses (Fernandez-Stark, et al., 2011). In this regard, Antikainen, et al., (2015) emphasized to invest more on creating experiences and services by developing new business models, collaborating platforms and shared services using the power of technology to engage customers in new ways and provide them more choices (Antikainen, et al., 2015).

3.3 Governance, Social sustainability, and Circular Economy in the apparel industry:

In today's corporate world, governance has become important due to the differences in priorities, laws and understanding of standards in various institutional contexts (Rana & Tajuddin, 2021). According to Okpara, (2015) corporate governance is a kind of framework or systems consists of rules and laws by which business actions are functioned, regulated, and controlled. Good corporate governance heightens the growth and sustainability of a company (Low & Yaacob, 2015) where Aras and Crowther (2008) four important factors, namely, fairness, accountability and transparency, and responsibility to characterize good governance. Which implies that, it is important for a firm to continue a fair, transparent and accountable relationship with its internal (employees, officers, stockholders) and external (community, suppliers, governments) stakeholders (Okpara, 2015). However, different scholars have described corporate governance from sustainability perspective. For example, Sethi (2002) recommended that good corporate governance can be recognized as a control mechanism of a company to raise the value of shareholder as well as satisfaction of stakeholders by managing efficient use of resources in its social environment. Additionally, Low & Yaacob, (2015) emphasized a notable attention on non-financial aspects concerning employees; greater focus on the environmental and social standards to measure, select and monitor the output capacity of their suppliers. Moreover, the role of governance has obtained an insight within circular economy that for transitioning to CE, governance stimulates the creation of new policies to enhance sustainability (Alejandro Padilla-Rivera, 2020).

Apparel industry is characterized as the "buyer-driven" value chain where the externalization of production is undertaken due to the availability of cheap labor and competitive suppliers of raw materials or intermediate goods in different countries by the lead firms (large retailers or brand name merchandisers) (Strange & Newton, 2006). However, the governance in the apparel global value chain refers to the authority and power of relationships to identify the

allocation and coordination of the material, financial and human resources by the buyer company (Gibbon, et al., 2008). To illustrates, governance in the apparel global value chain has enhanced and gained importance to regulate suppliers and workers activities in the production area by the lead firms. This is because, there are numerous examples of apparel firms involved in scandals derived from the lack of supervision of working condition standards practiced by suppliers situated in the manufacturing countries (Carmela Donato, 2020). Also, suppliers often collect cellulosic fibers endangered or ancient forests and supply them to the buyer firms (Rana & Tajuddin, 2021). Consequently, these kinds of supplier's scandals and malpractice can hamper the sustainability initiatives of the buyer firms, sometimes lead to boycott campaigns that can severely damage firm's performance and reputation (Klein 2000). Thus, global apparel buyers do exert a high degree of control over their suppliers (Gereffi et al., 2005) by practicing a different kinds of governance value chain focusing on the dynamics of individual buyer- seller relationships. Therefore, Gereffi et al., (2005) identifies five basic types of value chain governance, thus are, market, modular, relational, captive, and hierarchical. For apparel industry, relational value chain governance is frequently practiced due to the externalization of production process. Relational governance between buyers and suppliers can be expected when the transactions are complex, supplier capabilities are high, and high levels of asset specificity. These can be regulated through reputation, social and spatial proximity, family and ethnic ties, commitment, and trust, etc. this way, the relationship between buyer and seller built over time and governed by high levels of positive coordination that makes the switching costs to new partners high (Gereffi et al., 2005).

Chapter 4: Analysis

4.1 Introduction

This chapter analyses the collected data for this study. This study is directed based on one apparel multinational, i.e., H&M. A short description of the firm and its production as well as business model is reviewed at the beginning of the chapter to present a well-defined picture about how their business is operated across their value chain and how they manage social sustainability focusing on the circular economy model throughout the chain. In this regard, short description of the firm is given below:

4.1.1 Case Company Overview

H&M is a Swedish apparel multinational retail company known for creating great design and best offering for men, women, teenagers, and children by maintaining sustainability that is reflected in all of their brands. This firm offer design, services, and fashion that stimulate and enable people to reveal their style and choices that contribute to make it easier to live more circular. H&M group includes nine brands which is known as their own specific brand DNA, thus are, H&M, Week-day, COS, Monki, Cheap Monday, & Other Stories, H&M Home, ARKET, and Afound. H&M provides their customer a wealth of styles, unique design, and trends in fashion through their apparel products which makes it comparatively successful from other brands of H&M group (Annual Report, 2018a). While they reach to their targeted customers through their integrated digital channels and physical stores throughout the world. However, the social impact through circular economy in the value chain of H&M is significant and far reaching and this company aims at achieving social sustainability through circular economy positively from the products design through production to customer use (Sustainability Report, 2018b). In addition, managing human rights through circular economy

is the cornerstone of H&M production. Thus, this firm set an ambition to be 100% circular & renewable throughout their apparel global value chain and working according to it (Sustainability Report, 2020b). As a result, they are setting up a circular ecosystem to minimize waste and harmful impact on the human beings as well as the society. This strategy supports the Ellen Macarthur Foundation's visions of circular economy (Sustainability Report, 2020b) which covers all parts of their customer offer, products, business operation, supply chain as well as non-commercial products like packaging and ingredients used in the offices, store interiors, and distribution centers focusing three areas circular products, circular supply chain, and circular customer journey.

4.2 Circular Economy Model and Social Sustainability strategies of H&M

The value chain of H&M covers everything which is essential for making, marketing, repairing, reusing, and recycling products or services that associates them with people, communities, businesses, and ecosystems throughout the world (Sustainability Report, 2018b). H&M has designed their circular approach to utilize their value chain in a way to produce less waste, emit less CO2 and expand the lifespan of products. To become 100% Circular and Renewable to lead the industry towards a sustainable future, H&M is building circularity by focusing six key stages within their value chain, thus are, design, material choice, production processes, product use, product reuse and recycling, and transportation and distribution (Sustainability Report, 2018b). The following table presents the brief about achieving social sustainability while taking circular approach thought H&M's value chain. This section also describes each and every value chain stage through the lens of circularity.

CE Activities	Social Sustainability	Conceptual Implications
Design	Includes, the choice of chemical input that is not hazardous to the workers in production, the choice of material which ensures the health and safety of material producers and the choice of production process which endures OHS and workers rights	Innovation
Material Choice	Ensures the workers OHS Occupational Health and Safety), fairness and equality and rights while material production by using third party certification like RWS (Responsible Wool Standard), BCI (Better Cotton Initiative) and FSC (Forest Stewardship council) in addition focusing more on innovative man-made materials to phase out the hazardous materials like cashmere and leather	Control & Environmental and Innovation management
Production	Governing the chemical use which is hazardous to the health and safety of the production workers by introducing a "positive list" of chemicals for the suppliers which is included into ZDHC (Zero Discharge of Hazardous Chemicals) gateway. In addition, governance and control mechanisms are also executed throughout the supplier network to maintain the workers general OHS and human rights	Governance & OHS Management
Reuse and recycle	Achieves a low-level social sustainability in the form of reselling of the products among the customers and involving into the distribution of the collected clothes in the form of charity. However, from the environmental and economic sustainability point of view this stage plays a vital by facilitating technology and innovation throughout the value chain.	Technology, Value Chain Management, Innovation, Recycling Method
Transportation & Distribution	Makes coalition with different transport companies and stimulates them to reduce the social impact and ensure OHS of the people working in Transportation and Distribution network. In addition, provides safe transportation in third world countries like India. Moreover, ensures OHS and human rights through "Responsible Trucking", UN guiding principles amd ILO MNE Declaration.	OHS, Human Rights Management

Table 4.1: H&M's social sustainability achievement throughout the value chain (Source: Self-made)

4.2.1 Design

Design is the first stage of H&M's value chain that contributes to engage their customer. As a circular approach in the design stage is significant for developing a circular product, thus, H&M has set a goal to design 100% of new products that can create greater opportunities for reusable, recyclable and repairable from 2021 (Sustainability Report, 2020b). Circular design of H&M addresses the durability and quality of products, materials, chemical input, and production operation. Circular design includes the choice of chemical input that is not hazardous to the workers in production. In addition, the design process also includes the choice of material which ensures the health and safety of material producers and suppliers (Sustainability Report, 2018b). Moreover, the design process also involves the choice of production process which endures OHS (Occupational Health and Safety) and workers rights.

Circular design is also applied to their non-commercial goods such as packaging and stores to heighten their operational longevity and efficiency (Sustainability Report, 2018b). However, circular design process in this firm starts with the support of new technology and innovation where their innovation works looking at the customers' needs and wants alongside the macro and micro styles. After taking the best and promising innovations with technology H&M optimizes their business activities with innovative design. For example, H&M uses advanced analytics and AI to design a circular product amplifying the decision of their designers and buyers that forecast trends and give their customers even more relevant and customized recommendations as well as offers (Sustainability Report, 2019b). Therefore, they claim that AI is one of the most powerful tools to meet the future in a sustainable way by the lens of the circular economy. In addition, they are continuing to develop circular design strategy by utilizing the latest technologies in 3D visualization of products which leads to the reduction of sample rounds as well as use of resources (Sustainability Report, 2019b). Moreover, H&M has

their own teams of designers, and they are trained in terms of selecting the right materials that are sustainably sourced or recycled and suited to reuse, longevity and recyclability.

4.2.2 Material Choice

The apparel industry requires a great extent of natural resources, and the production and sourcing of raw materials should be meet with the international standards that does not lead to the degradation or destruction of ecosystems as well as the biodiversity. However, sourcing of raw material from ethical point of view is an extremely important part of H&M's business model which ensures sustainability especially social sustainability (Sustainability Report, 2018b). H&M is committed to source and produce the raw materials in a sustainable way specially focusing on social sustainability that respect human rights, help to maintain biodiversity as well as preserve natural resources. Therefore, they have set a specific goal of collecting and using 100% recycled, close loop or other sustainably sourced materials by 2030 so that they can be regenerated and recycled. To achieve this goal, this firm has developed and practicing some well-defines structures and strategies (Rana and Tajuddin, 2021). For example, H&M is the second biggest user of recycled cotton in the world focusing on the responsible purchasing and fair treatment in the value chain of cotton to ensure the welfare and safety of the laborers and farmers (hmgroup.com, 2021). Also, this company uses several other types of recycled materials, including, recycled polyester, recycled polyamide, and recycled wool, as a way of saving natural resources and decreasing what ends up in the landfills (Sustainability Report, 2018b). In addition, H&M is continuing to work with the suppliers in the production of tanneries to minimize the hazards impact on health and environment. Moreover, for the evaluation of environmental impact of sustainably sourced and recycled raw materials H&M uses third-party lifecycle assessment (LCA) data like Material Sustainability Index (MSI) by Sustainable Apparel Coalition (SAC) or using third-party certification schemes includes, Better Cotton Initiative (BCI), Global Organic Textile Standard (GOTS), Recycled Claim Standard (RCS),

Global Recycled Standard (GRS), Responsible Wool Standard (RWS) (Sustainability Report, 2020b).

4.4.3 Circular Production

Garments production is very crucial stage of apparel global value chain. In this stage social sustainability has obtained a high level of attraction to the stakeholders because of some current incidents. Since 1947, H&M has been outsourcing their production activities mostly in Asia and Europe as they don't own any factories and, on this way, they contribute on economic development and support local business (hmgroup.com, 2021). Thus, this firm is working with their manufacturing suppliers by setting production offices in the world to make sure that their suppliers comply with the international labor standards and these offices are also responsible for placing orders ensuring the quality of products (hmgroup.com, 2021). However, sustainability is executed in this stage through the compatible use of recycled materials assure economic durability.

Social sustainability practices are fundamental part of this firm to safeguard the fair treatment of garments workers by providing a healthy working environment. Therefore, H&M has lunched extensive code of conduct and supplier audit program to achieve social sustainability through circular production (Sustainability Report, 2018b). Social sustainability, however, is assured at this site through responsible management, fair job policies, occupational health and safety management, healthy and decent working conditions, and fair compensation (Sustainability Report, 2020b). In addition, H&M aims at respecting human rights, promoting inclusion and diversity throughout their value chain specially in the production area. Specifically, this firm has adopted and performing some strategy in the apparel production stage in three key areas, including, human rights, working conditions and employee wages (hmgroup.com, 2021). In case of respecting human rights, H&M has conducted some strategies thus are related to health and safety, fair living wages, forced labor/modern slavery, violence

and harassment, discrimination, freedom of association and collective bargaining, young workers, working hours and social security (Sustainability Report, 2018b). To control and govern all these salient human rights this firm owns numerous standards and policy, such as, Global Policy on Diversity, Code of Ethics, Global Health and Safety Policy, Inclusiveness and Equality, Global Labor Relations Principles, Global Compensation and Benefits Policy, Global Social Policy, Global Non-Discrimination and Non-Harassment Policy, Sustainable Workplace Standards (Sustainability Report, 2019b). All these initiatives are directed by UN Guiding Principles on Business and Human Rights and must be signed by the suppliers to comply with social sustainability standards set by the H&M apparel brands.

In terms of employee wages, H&M emphasizes more on the promotion of freedom of association and collective bargaining by the workers, trade unions, worker representatives for negotiating about fair living wages. For the development of fair living wages H&M supports the suppliers for implementing and improving wage management system, facilitating workplace dialogue program, providing training for workers' rights and responsibilities, and partnership with global trade union IndustriALL, Action, Collaboration, Transformation (ACT) and for evaluating, all these initiatives are reviewed by Ethical Trading Initiatives (ETI). Besides these, H&M is also motivating its suppliers to provide non-monetary benefits to their workers such as, free childcare, housing subsidies, housing benefits, transport subsidies, medical insurance, and free health and childcare services (Sustainability Report, 2018b).

In terms of creating good working conditions, H&M has taken some effective measures to ensure a safe and healthy environment, including, capacity building and providing training to suppliers by the production offices, and signing in 'the Bangladesh Accord' agreement for improving building safety and monitoring fire management (Sustainability Report, 2018b).

Eventually, H&M aims to produce all products in a circular way for the utilization of scarce resources and to minimize the hazardous impact on the human health, specially, the worker and user as well as the society. As circular apparel production processes require excessive use of water, chemical and energy from raw materials to garment production. Hence, H&M is addressing their chemical, water, and energy management for leading a sustainable production in a circular way.

Chemical management ensures the safety of use and reuse of materials in the circular manufacturing process. For this H&M has set a vision to lead the change towards producing safe products and toxic-free fashion by 2030 through chemical management. Therefore, H&M has adopted screened chemistry by promoting a Positive List of chemicals for Zero Discharge of Hazardous (ZDHC) Gateway, throughout their supply chain to choose the best chemicals (Sustainability Report, 2018b). Moreover, H&M aims to reduce greenhouse gas emissions through their suppliers' factories' energy efficiency programs by helping them shifting to renewable energy sources like solar and wind.

Additionally, H&M's objective is to be a leading water steward in the apparel industry by conserving, reusing, and recycling water wherever possible as well as keeping it clean for the future generations by addressing the large scale social and environmental impacts of water usage in the production around the world. Hence, this company has implemented a water stewardship strategy throughout their value chain by partnering a long-term relationship with WWF in 2021 to develop a five-step strategy, thus are, building water awareness, knowledge of impact (measuring water impact and risk associated with it), improving the internal action, increase g stakeholder engagement, and influencing governments to manage water in a sustainable way (hmgroup.com, 2021). Furthermore, by setting an ambitious goal to recycle 15% of wastewater back into the manufacturing activities, this firm has piloted wastewater recycling

over 272 suppliers using a Zero Discharge of Hazardous Chemicals (ZDHC) approach and aligning with Sustainable Apparel Coalition (SAC) (Sustainability Report, 2018b).

4.4.4 Product Use

This stage is mostly concerned with the involvement of customer by empowering them to care for and use of the products in a sustainable way that helps to create a truly circular system by increasing the lifespan of the products. Hence, H&M encourages their customers for making sustainable choices by informing about garment care offering opportunities to reuse and recycle. In addition, this firm has launched the Clevercare label on their products about washing instructions to minimize the environmental impact as well as raises the overall lifespan of the products. Also, it has developed some effective steps to produce more products with emotional durability through Monki's Re:Love event, H&M Take Care Concept, and Weekday's in-store workshop (Sustainability Report, 2020b). Where, the smartphone-based take care app inspires and enables customers to care their cloths by offering guidance about easy modifications and hands-on support for smart repairing that stimulates a digital customer relationship management. However, H&M do not have any social sustainability goal and achieving activities in this value chain stage.

4.2.5 Reuse and Recycle

H&M is working hard to raise the quantity of apparel products that can be reused and recycled. Hence, it is performing renewal and remake projects to turn the old cloths into new one through reprinting, repurposing, and remaking. Additionally, it is continuing unwanted garments collection initiatives to achieve sustainability specially the social sustainability and in 2019, H&M has collected 29,005 tons of garments by collaborating with I:CO, which promotes reuse before recycling (Sustainability Report, 2019b). Also, it is stimulating to reuse the garments

among their customers through Resell services through exploring an exciting initiative which is known as COS Resell, an online platform that allows customer to buy and sell their used items that reduce the production of new cloths.

To lead a more sustainable fashion future, H&M has launched several recycling initiatives. For example, Monki has launched a collection by using Green Machine system and Loop machine at H&M's flagship store in Stockholm to transform old garments into new garments (hmgroup.com, 2021). Furthermore, H&M has developed and implemented several strategies focusing on the management of waste resources of offices, store, and distribution centers in a circular way through reduction, reuse, and recycling in the different markets they operate. This is why, it has rolled out Sustainable Workplace Standard (SWS) with a commitment to construct a best possible sustainable working environment (Sustainability Report, 2019b).

H&M aachieves a low-level social sustainability in the form of reselling of the products among the customers and involving into the distribution of the collected clothes in the form of charity. However, from the environmental and economic sustainability point of view this stage plays a vital by facilitating technology and innovation throughout the value chain.

4.2.6 Transportation and Distribution:

H&M is striving to reduce the greenhouse gas emissions by choosing the right modes of transport and by placing orders closer to the sales market to comply with the ambition to use fossil-free heavy transportation by 2050 (Rana and Tajuddin, 2021). In this regard, they are using trains and ships to transport and distribution over 90% of their products from suppliers to their warehouses (hmgroup.com, 2021). Also, H&M has set standards to stimulate the transport companies to decrease their social impact by optimizing routes, providing training to the drivers to minimize fuel consumption through proficient driving techniques and collaborate to lessen CO2 emissions from transportation by using renewable fuel energy. In addition, this

firm is supporting their transportation companies to use electrical vehicles and second-generation biofuels as a key component for eliminating carbon emissions as well as for last mile delivery to their customers. Moreover, H&M has aligned with Clean Cargo Working Group, Clean Shipping Network, Network for Transport Measure Pathways Coalition, Green Freight Asia, and Global Logistics Emissions Council (GLEC) to meet with global standard for accurately measuring logistics- derived emissions (Sustainability Report, 2020b).

Besides these, H&M has taken some initiatives to adopt social sustainability through their transportation facilities, for example, in India, they are continuing to provide safe transport to and from work for their female H&M employees. Recently, H&M has become an active partner with Responsible Trucking for making a collaborative effort to improve the working conditions (i.e., forced labor, child labor, working and resting time, harassment, remuneration, non-discrimination, benefits, health and safety, access to facilities, freedom of association and collective bargaining, disciplinary practices, facilities' requirements and rest and recreation) of the truck drivers in the logistics and road transport sector across Europe () under some respects of the UN Guiding Principles on Business and Human Rights and the ILO MNE Declaration (hmgroup.com, 2021)

Chapter 5: Discussion and Conclusion

5.1 Discussion

In light of the two research questions and the analysis discussed above, this section represents a paramount discussion based on the analysis part of this study. In the analysis part, a case company has been studied to address the social sustainability practices in the lens of circular economy from every stage of the value chain point of view. At the same time the study endeavored to analyze the relationship among social sustainability, circular economy, and governance structure. Also, a conceptual framework has been constructed after reviewing the literature which exhibits that how a company can achieve social sustainability in the light of circular economy practices. The conceptual framework is as follows,

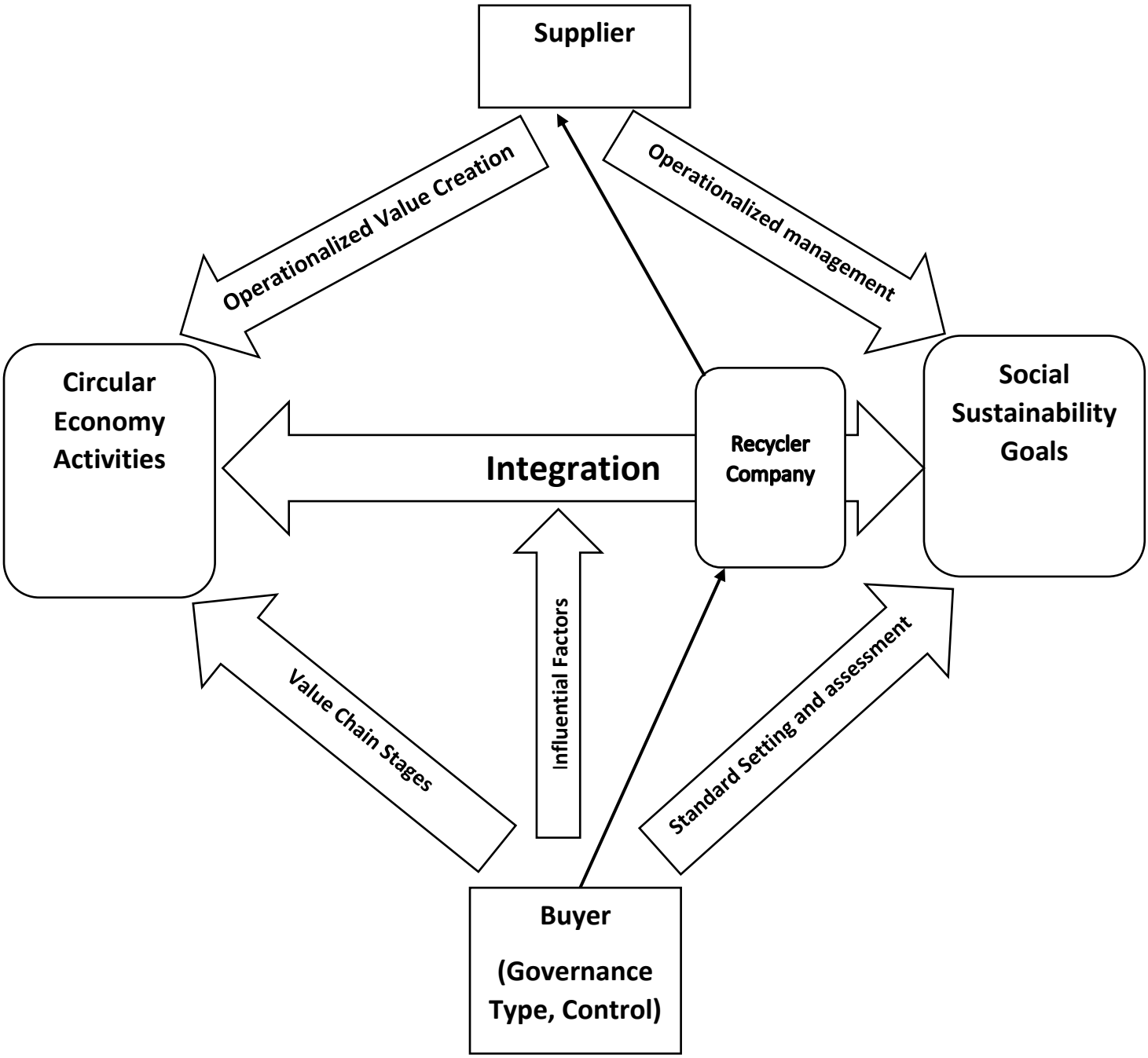

Figure 5.1: Conceptual Framework of Social Sustainability achievement through Circular Economy (Source: Self-made)

The conceptual framework is prepared based on the theoretical understanding and the practical implications of the case company. In terms of achieving social sustainability achievement the

supplier or the lead firm shares some common goals and resources. In the process of achieving social sustainability through circular economy the buyer or the lead firm takes the lead. Buying firm involves the suppliers to adopt circular economy (CE) activities or sometimes the supplier can already have the circular capability that matches with the buyer's sustainability and circularity ambitions. In this process suppliers operationalize value creation throughout the value chain through different CE activities. This also includes operationalized management functions to achieve social sustainability goals. The buyer side ensures everything with the use of governance and control. Buying firms set some standards which the suppliers need to address to continue the business partnership with the lead firms. The lead firm also assesses the suppliers periodically. In this joint process the supplier must abide by the guidelines of the lead firms as they have higher bargaining power throughout the value chain. An integration between the CE activities and Social Sustainability Goals is also important while considering all the influential factors. In this process, often there is a presence of a third party, i.e., Recycler Company. This party plays a supportive role as often, neither of the other two parties have recycling capabilities. This player usually collects used materials from the lead firms, transforms into reusable materials and then supplies to the suppliers who use the recycled materials to make new products for the lead firms.

The process is followed by the case company studied in this study. The study finds the way an apparel MNE achieves social sustainability using circular economy. Circular Economy has a bigger role to play in terms of achieving social sustainability as this economic system is considered as one of the most effective ways for achieving sustainability. Despite gaining a high popularity, circular economy still lacks many ways of including social sustainability in this economic system. From the value chains point of view, the inclusion of social sustainability attainment could be clearer by the companies in various stages like design, material choice, reuse and recycle and product use. There are also a lot of opportunities of achieving social

sustainability by the firms in every stage of the value chain. In terms of adopting circular economy the social sustainability agenda could be more visible and actionable by the lead firms and the suppliers to ensure the proper attainment of social sustainability through CE.

5.2 Findings and Conclusion

The study is conducted to uncover the ways apparel firms achieve social sustainability through circular economy. The theoretical analysis helped to construct a conceptual framework which is validated by using the data from the case company.

The study finds that Circular Economy should include social sustainability aspects in every value chain stages by involving the stakeholders and taking the sustainability goal of every value chain stages into consideration. The study also finds that the social sustainability goals of the lead firms are achieved through an integration of CE activities with the social sustainability goals in every stage of the value chain where the buyer takes the lead and provides certain standardization and guidance to the suppling firms and achieves the goals by undertaking governance and control mechanisms.

This thesis also endeavored to contribute to the global value chain, social sustainability, and circular economy literature. The findings of the study will also be helpful for the policy makers while formulating industrial strategies and regulations to achieve social sustainability by adopting circular economy. In addition, the study tried to contribute to open a new way of viewing social sustainability through CE to advance the global apparel industry that face enormous challenge in achieving social sustainability.

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