

Chapter 8

Industry 5.0 and Environmental, Social, and Governance Initiatives in Supply Chain Sustainability: A Study of the European Fast Fashion Industry

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ABSTRACT

Industry 5.0 requires an organisation to maintain supply chain sustainability by using environmental, social, and governance (ESG) initiatives, thus avoiding social, environmental, ethical, or other risks. This chapter explores the factors, processes, and impacts of the use of ESG framework in sustainability throughout supply chain management. The development of this research shows the European fast fashion industry, which had invested in ESG initiatives to maintain sustainability standards across their whole supply chain operations of the European fast fashion market.

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INTRODUCTION

There have been a lot of discussions on industry 5, people are wondering what is next. whereas industry 4.0, had focused on the use of technology such as AI, blockchain, Internet of Things etc in the industries; on the other hand industry 5 gives a humanistic twist to machine dependant industry 4.0. Industry 5 involves our leap into merging the themes of technology, human, Society, environment, sustainability etc. in any industrial revolution, the role of the supply chain is very significant. and in industry 5.0, it will be all about embedding environmental social and governance initiatives in technologically innovative supply chain management.

An organisation focusing on developing the Environmental, Social and Governance (ESG) initiative offers to represent the behaviour of following a set of standards by which they can maintain their socially conscious image in front of the investors and the customers. Kotsantonis and Serafeim (2019) stated that ESG initiative factors maintain some environmental criteria by which the organisation can safeguard the environment while operating in the international and regional market, which also include some corporate policies that indicate the steps toward climate change. Li, et al. (2021) have stated that waste management is also considered another influential factor in ESG initiatives due to increasing pollution in the world that creates an impact on human lifestyle in different countries. The European fast fashion industry has been creating a significant impact on the overall business industry in terms of revenue.

In Europe, companies like Zara, H&M, and many others significantly adopted the trend of fast fashion, not only increasing sales but also increasing the volume of solid waste generated from textile manufacturing. This factor influences the requirement of implementing environmental measures in the overall supply chain of the fast fashion industry in Europe, which will eventually lead to environmental well-being and satisfy governmental legislations for the environment. Pedersen, et al. (2021) connotes that waste management refers to the utilisation of waste materials generated in an industry, or a company based on recycling or reusing for similar or different purposes, which helps to reduce the volume of landfills and wastes. In this context, the ESG initiative includes an investment in waste management that not only helps to reduce environmental impact but also reduce the costs of raw materials through recycling. Moreover, managing the overall supply chain, including manufacturing, packaging, and delivering the products, is considered essential as it helps to reduce carbon footprint and waste generation. In this regard, ESG investment helps to measure and enhance supply chain activities based on the requirements, which eventually increases the sustainability of the overall supply chain.

This chapter investigates the current strategies and methods used by the fast fashion sector to function according to the EU rules and regulations of climate change and sustainability in line with the ESG framework. It explores the factors, challenges, good practices and key stakeholders that influence ESG initiatives and; consequently the impact of ESG initiatives on supply chain sustainability in the European fast fashion industry.

The utilisation of ESG proposition helps to reduce energy consumption and water intake, which offers companies in the fast fashion industry to decrease the overall operational cost. Phillips, Thai and Halim (2019), argued that an organisation maintaining sustainability in its supply chain focuses on developing greater freedom in the static degradation by using deregulation, by which they can earn government support and subsidies. By using ESG initiatives any organisation can easily enhance the motivation level of the employees (Sachin and Rajesh 2022). The companies are focusing on using advantages from the supplier, compliance, and increased visibility by which the companies can easily promote their organisational operation in an eco-friendly manner Stranieri *et al.* (2019), Therefore, it not only showcases the

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overall progress in environmental gratification but also creates a better image that can attract customers and investors to a greater extent by prioritising ESG initiatives in the supply chain.

In addition, Dimson et al. (2020) stated that social initiatives in the context of ESG initiatives include equality and diversity, human rights for the labours, data security, and long-term customer satisfaction. Governance, on the other hand, in terms of ESG initiatives, includes diversity among the board members, contributions in politics, large-scale lawsuits, internal corruption, lobbying, and executive pay that are to be monitored significantly in the company.

In the context of the supply chain of an organisation, it has been identified that ESG initiatives are able to implement a regulatory framework according to the requirements, which eventually leads towards aligning the supply and demand of the company. The ESG investment also helps to maintain both internal and external logistics in different countries according to the legislation, which eventually helps to protect the environment as well as societal concerns in different areas accordingly. Hence, the investors of different companies have become significantly concerned about ESG as it will help to get governmental support and lead towards profitability.

RESEARCH METHODOLOGY FOR DEVELOPING THIS CHAPTER

A systematic Literature review is used to develop this chapter. a Systematic Literature Review (SLR) is a process for systematically, transparently, identifying and analysing all studies on a certain topic, collecting several points of view on the same issues, to see the larger picture in both good and negative studies (Nightingale (2009)). The study researched themes of sustainability, Supply chain management, and ESG initiatives. The various sources that have been used to collect data are related articles, research work and authentic websites that are related to the fast fashion industry. The researcher has taken care in the way of using journals and articles of illegal publication. Moreover, the researcher has also only authentic websites. The researcher in collecting secondary data aims to collect all the relevant information from the research works that have been done previously on the same topic. This is the way through which the researcher has identified whether high-quality research on the same topic has been carried out previously. The researchers have followed thematic analysis to interpret the qualitative data that have been collected from the literature review.

SYSTEMATIC LITERATURE REVIEW INDUSTRY 5.0 ESG AND SCM

To date the five in this revolution revolutions has been noted. the first industrial revolution (the 1780s) was that of mechanizing; was about enhancing production using factories supported by steam and diesel engines; Second industrial revolution commenced with electrification (1870); which involved the use of electricity-based machinery; code industrial revolution started in in the 1970s with the evolution of computers and automation of production plants; the fourth industrial revolution or industry 4.0 (2010-) is all about digitalization and embedding technology in the process of production; and the 5th industrial revolution that is industry 5 (2020-) is all about linking technology driven production plus processes and supply chain with elements of environment social governance and human beings (Heartland, 2022).

ESG refers to the Environmental, Social, and Governance of an organisation, and is defined as the collection of standards regarding organisational behaviour that help investors to identify potential benefits

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related to metrics related to ESG (Gillan et al., 2021). It includes regulatory frameworks for protecting the environment and social factors by an organisation to develop a significant brand image along with increasing awareness to create a better world with the help of other companies. For example, green energy management, waste management, employee diversity, data security, human rights, etc., are significant ESG initiatives that help to protect the environmental and social concerns of the companies. The research revealed that the number of studies related to ESG has increased since the year 2019-2020), since the inception of the idea of industry 5.0 in the year 2020 and 2021 more than 60+ studies were carried out.

Tabular Systematic Findings From Literature Sources

The literature review also found several themes related to sustainability that have appeared in the selected samples of research papers. Most of the recent researchers were exploratory approaches the key aspects of the recent findings have been summarised in Table 1.

Table 1. Systematic findings from some of the literature sources

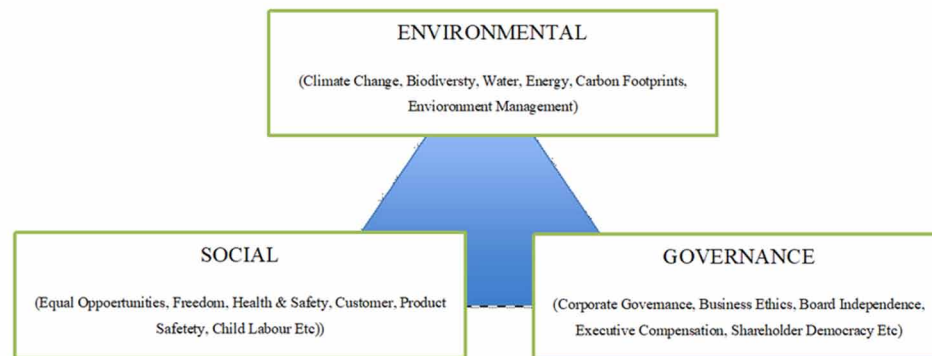
Sl. No.	Authors and origin	Purpose	Study design	Sample and data source	Key findings
1.	(Li et al., 2021)	To understand the future prospects of sustainability.	Descriptive	The statistical analysis is done by procuring the numerical data from secondary sources.	Sustainability issues are the main factor in the future, and all businesses must ensure the same in order to ensure the right kind of progress.
2.	(Chen and Xie, 2022)	To find out the environmental sustainability goals and its overall disclosure of financial performance.	Exploratory	The statistical analysis using financial performance and aligns them individually with the ESG.	It helps in understanding the role of ESG investors in general and how their role impacts the overall ESG disclosure and the financial performance connected with the same.
3.	(Jacobs et al., 2019)	The aspects of manufacturing planning and control for the supply chain management.	Explanatory	Qualitative,	The findings from the study constitute the planning and controlling process within the supply chain industry and the methods by which the control within the supply chain is established and strategies connected with the same.
4.	(Yu et al., 2019)	The aspects like dynamism, disruption orientation, and resilience within the supply chain.	Exploratory	The analysis is a mix of qualitative and quantitative.	The disruption is often created within the supply chain due to technological differences, and dynamism and resilience build the financial capabilities of the firm.
5.	(Avramov et al. 2022)	Sustainable investing, along with the uncertainty of ESG.	Exploratory	The research is mainly a mix of qualitative and quantitative analysis.	Sustainable investment and, the uncertainty that is associated with the problem, and the overall financial performance
6.	(Gillan et al., 2021)	Review of ESG and CSR research in the matters of corporate finance.	Exploratory	Qualitative SLR	Understanding the factors that are related to the development of a condition that is associated with the comparison of ESG aspects with CSR research as a whole.
7.	(Dimson et al., 2020)	The divergent perspectives of ESG ratings.	Descriptive	The research is qualitative the descriptive	The development of ESG ratings, and its rules and regulations.
8.	(Pedersen et al. 2021)	Investing with responsibility and efficient in connection with ESG.	Explanatory	The description qualitative,	The development of various patterns, which are linked with the overall aspects of ESG.
9.	(Cook et al., 2018)	Utilisation of two-way theory for influencing the changing behaviour	Descriptive	Qualitative,	Understanding on the changes in health behaviour and how such behaviour is connected with the aspects of sustainability.
10.	(Zhuang et al., 2019)	The role of stakeholders in the urban renewal of China.	Exploratory	The qualitative research	The factors of sustainability within the urban renewal projects and also considering the role of stakeholders in doing the same in the aspect of China.

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Concept of Environment, Social, and Governance (ESG) Initiatives

Environment, social, and governance (ESG) are defined as the set of regulatory standards followed by an organisation in terms of safeguarding the environment, climate change, and social concerns, including discrimination, disruption of human rights, and many others (see figure 1) (Li et al., 2021). Investing in these initiatives is considered one of the beneficial steps to be taken by an organisation to increase competency and contribute to overall well-being in society. These are the non-financial factors that allow the investors to conduct a significant analysis process in terms of identifying growth opportunities and possible risks that might occur in different stages.

Figure 1. ESG initiatives implemented by companies or industries (by authors)



ESG initiatives are the main categories in areas, such as environmental and societal, that indicate how business organisations have the potential to establish well-being in society (Chen & Xie, 2022). Governing is also an important step as it indicates the companies are providing transparency regarding the initiatives followed all over the supply chain in different areas. According to Avramov et al. (2022), the environmental initiatives of ESG majorly include air and water pollution, initiatives for green energy, deforestation, waste management, controlling carbon emission, and other environmental protection measures that lead towards sustainability.

Scope of the European Fast Fashion Industry in Terms of Supply Chain

In the contemporary business industry, fast fashion has become one of the significant trends in the fashion industry that replicates recent trends of catwalks and high-fashion designs, which are adopted by the mass production team of the companies. This industry produces the designs quickly and showcases them in retail stores, which not only attracts a lot of customers but also significantly boosts the overall profitability of the company through increased sales. It has been identified that the European fast fashion industry has emerged with the help of increasing online shopping, which helped to attract and reach a lot of customers along with enhancing the supply chain. In Europe, the fast fashion industry is closely related to the high street commercial areas that include mass market retailers who can sell bulk orders to customers (Euronews, 2022). The industry not only aims to execute mass-market delivery of

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the products but also leads towards a sustainable way of reducing the environmental impact regarding waste management.

According to Jacobs et al. (2019), the supply chain is defined as the set of activities or components of an organisation that are responsible for delivering the final products of an organisation from the collection of raw materials. It is one of the most vital parts of a business as it helps to reach the end customers with the help of different necessary activities. Furthermore, the fast fashion industry involves different stages of clothing manufacturing along with delivery, which allows the companies to deliver actual products to the customers (Yu et al., 2019). In this regard, it has been identified that the fast fashion industry is required to implement different types of ESG initiatives to sustain the overall industry in the countries. The fast fashion industry in Europe has developed a significant supply chain as the quick delivery of fashion products is considered a significant factor as the industry is based on delivering the products from the catwalk into mass retailing. Fast fashion retailers in Europe have included low-cost materials in the industry with the help of comparing slower fashion concepts, which are required to be protected in terms of environmental and social concerns. According to Textile Regulation (EU) No 1007/2011, the fast fashion industry is required to be focused on considering customer interests and functioning in the market (Europa, 2022). It has been identified that the industry is required to be focused on social as well as environmental factors across the overall supply chain., which will eventually help to get governmental support.

THE FACTORS THAT INFLUENCING THE IMPACT OF ESG INITIATIVES ON SUPPLY CHAIN SUSTAINABILITY

The impact of ESG initiatives is significantly based on organisational behaviours in the industry, which lead towards the overall sustainability of the industry regarding the delivery of the product. According to Avramov et al. (2022), there are several factors related to environmental and social activities in the industry, which lead towards satisfying legal frameworks of different countries regarding the activities involved in the supply chain. The key factors that influence ESG activities on the sustainability of the supply chain are based on three categories, such as environmental, social, and governance. The environmental factors include the conservation of natural resources, carbon emission, climate change, and environmental pollution that concern governments and companies. The social factors include consideration of people and relationships, data protection and privacy, human rights, and customer satisfaction that influence ESG initiatives in supply chain sustainability. Composition of the board, committee structure audit, and standards to be followed in terms of governing that play an integral role in maintaining the overall sustainability of the supply chain in an appropriate direction.

Environmental Factors Influencing ESG Initiatives in an Organisation

According to Gillan et al. (2021), climate change is considered one of the most impactful factors in human history as well as the economy as it creates an impact on organisational activities regarding the contribution towards the environment as a necessity. The regulatory frameworks of European climate law indicate that EU countries are required to cut off greenhouse gas emissions and carbon footprint by around 55% by 2030 (Europa, 2022). Based on the report of the United Nations Environment Programme, it has also been identified that the cost of adopting climate change might increase up to \$500 billion per

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year by 2050, which is to concern different companies (UNEP, 2022). Hence, different industries are required to adopt ESG initiatives to reduce costs and focus on contributing towards overall environmental well-being. For example, the fast fashion industry in Europe made an initiative to integrate eco-design and the use of 100% sustainable materials in clothes by 2030, which indicates a significant response to climate change (The Guardian, 2022). This initiative not only helps to reduce the carbon footprint of the industry but also reduces the expenses of further integration regarding environmental control.

Social Factors Influencing ESG Initiatives On Supply Chain Sustainability

According to Dimson et al. (2020), social factors like discrimination, human rights, relation with the stakeholders, and workplace conditions influence the integration of ESG initiatives in an industry, which lead to a sustainable supply chain. Discrimination is one of the significant social factors that disrupt the quality of the workforce in an organisation as it disrupts equal treatment to all the individuals involved in an industry or workplace. It has been identified that the fast fashion industry has been exploiting black or brown women with commercials or other marketing strategies, which created a social impact on the industry (The Guardian, 2022). ESG initiatives are required to be focused on anti-discrimination regarding age, race, culture, gender, or any other factor that creates a negative societal impact. Human rights in terms of employee management or customer relations are also necessary factors to be integrated into the industry, which helps to provide equal treatment to all the people involved (Li et al. (2021)). This factor helps to integrate supply chain sustainability in the fast fashion industry with the help of social well-being as the factors related to human rights influence ESG in the fast fashion industry. Thus maintaining a relationship with the stakeholders is an important factor that influences ESG initiatives that help the companies to get the required investment for enhancing sustainability in the overall supply chain (Pedersen et al. (2021)). This factor is also required to be acknowledged by the companies like Zara, H&M, and other clothing retailers that are involved in the fast fashion industry in Europe.

Governance Factors Initiatives Of ESG in the Supply Chain

Supply chain sustainability has a significant area of monitoring the initiatives in terms of governing as it helps to assure the management regarding the implementation of sustainability. It majorly includes a set of standards that are responsible for maintaining a regulatory framework in the overall supply chain of the company based on the standards of the country Jacobs et al. (2019), According to contingency leadership theory, it has been identified that adopting contemporary industrial factors, including economy, social factors, and many others, is essential for leaders to take necessary precautions to avoid threats. In this regard, the fast fashion industry in Europe is majorly based on providing clothes quickly to customers, which requires different regulations to be followed, including packaging, materials of the clothes, and many others.

Governing initiatives, according to ESG investment, is beneficial to monitor the integration of frameworks to be followed to ensure an appropriate response to society as well as the environment. For example, manufacturers of fast fashion in Europe are required to ensure that the clothes are eco-friendly as well as hard-wearing, which will be reusable and reduce environmental impact in the textile industry (BBC, 2022). Also, consumers should be given more information about how to recycle, repair, and reuse the clothes of the fast fashion industry, which will help to increase sustainability in terms of reducing the environmental impact of the industry. These factors are considered the regulations to be maintained

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in the industry by governing, which are to be maintained through ESG initiatives in the industry. Li, et al. (2021) also connote that maintaining employee relations through equality and diversity are also significant parts of social factors in the industry, which are to be maintained by the companies. Governing initiatives include centralised communication for all the employees, gathering responses from all the employees, performance, and customer satisfaction, which help to identify how the social factors are integrated into the companies. For example, the corporate governance department of Zara helps to safeguard the commitments of the group towards their employees and customers to maintain ESG initiatives in a social context (Inditex, 2022). This factor indicates the importance of governing initiatives to be implemented in the fast fashion industry of Europe, which allows different companies to invest in ESG initiatives and satisfy governmental as well as social factors in the industry.

Challenges in managing ESG Initiatives in Supply Chain Sustainability

There are several challenges to be during the integration of ESG initiatives in a company or an industry, including lack of knowledge, investment, workforce, and many others (Chen & Xie, 2022). The investors have been able to increase their sustainability assets with an estimation of reaching 47% by 2025, which aims to establish a sustainable supply chain and business functionalities. Several challenges might take place, including the transition of a portfolio that indicates specific requirements in terms of financial and social impact.

The collecting and evaluation of appropriate data by the stakeholders are considered another essential step to be followed in the context of ESG initiatives, which leads to appropriate decision-making (Gillan, et al., 2021). The sustainability metrics, such as carbon emission, waste generation, energy consumption, and many others shall allow the stakeholders to identify the business scenario and invest in ESG initiatives accordingly. In this process, potential challenges may include a lack of appropriate information that might create an impact on the decision-making of ESG initiatives, which would disrupt supply chain sustainability in the fast fashion industry of Europe. Dimson et al. (2020) also stated that choosing the right products to be delivered is considered another significant challenge as the availability and requirement of sustainable products have emerged in the industry. In Europe, there are 50 new exchangeable traded funds introduced in terms of ESG initiatives that allowed different industries to focus on the usability of raw materials and other environmental concerns (Financial Times, 2022). This factor has created a significant challenge for the fast fashion industry in Europe as the availability of many sustainable products causes a lack of proper direction for the investors to lead.

Emerging climate protection trends are considered another challenge to adopting sustainable supply chains in the fast fashion industry of Europe, where investors are required to consider different incorporation of climate considerations. According to system theory, any complex functionality such as SCM involves different small activities that are categorised into three different types, such as input, process, and output, that are modified according to feedback generated by those (Cook et al., 2018). In this regard, emerging climate trends include different smaller entities, such as waste management, carbon emission, energy consumption, and environmental regulations that are to be maintained by the companies. In the European fast fashion industry, the government has estimated that all clothes will be made of recycled materials by 2050 (DW, 2022). Moreover, the European climate act is considered another factor to be instigated in by the ESG initiatives to establish a sustainable supply chain in the fast fashion industry. Collaborating and managing all the requirements is considered a significant challenge for the industry that might disrupt the overall results of sustainability in the industry.

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Chen and Xie (2022) also stated that company engagement with multiple stakeholders and the global industry is also a significant challenge, as a lack of collaboration lead to uncertainty regarding long-term benefits. Investors are required to focus on company engagement before investing in ESG initiatives in order to ensure sustainable fund providence in the industry. Lack of engagement with other companies also causes another challenge of lack of brand image in the industry that reduces customer engagement as a vital aspect of social consideration through ESG. Hence, these challenges are to be acknowledged and mitigated by the management

THE GOOD PRACTICES IN MANAGING THE IMPACT OF ESG INITIATIVES ON THE SUSTAINABLE SUPPLY CHAIN

The integration and management of ESG initiatives in an organisation or industry involve different practices and steps that are responsible for establishing a sustainable supply chain, which majorly includes different steps to be maintained (Pedersen et al., 2021). The steps include the identification of the right approach for the company, identifying stakeholders through evaluating engagement, assessment of materiality, establishing governance, integration of ESG in strategy, reporting frameworks, and ESG research. These steps are beneficial to maintain the overall requirements of the industry as well as the government to lead towards better sustainability of the supply chain in the market.

Identification of The Right Approach

In the context of adopting ESG initiatives, identifying the right approach is considered one of the most important steps to be taken as it involves the identification of appropriate areas to be developed. The ESG initiatives involve environmental, social, and governing approaches that associatively include a wide range of initiatives to be taken to maintain overall sustainability (Dimson et al., 2020). For example, climate change is a specific area to be approached where investors integrate appropriate investment to execute activities like waste management, reduction of GHG emissions, or use of sustainable energy. This factor helps to utilise the maximum advantage of ESG initiatives in an industry that eventually leads toward long-term success. In the fast fashion industry in Europe, an attempt to adopt 100% recycled clothing material could be the right approach, which will help to successfully satisfy environmental concerns (DW, 2022).

Identification Of Stakeholders and Engagement

Identification of ikey stakeholders is also a good practice for the management of ESG initiatives in the fast fashion industry of Europe, as it will help to assign the activities and goals in SCM (Gillan, et al., 2021). The engagement of all the stakeholders is also essential to be acknowledged as it indicates the overall collaboration of the industry in sustainability. Regular outreach to the investors, conducting surveys and focusing on group discussions and interviews are considered good practices to enhance engagement with all the stakeholders regarding the management of ESG initiatives.

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Assessment of the Materiality

Assessing the materiality involves information that the company can disclose to other entities that might impact the decision-making of the investors toward ESG initiatives. Corporate Reporting Dialogue is considered a good practice, as it helps the management to identify and evaluate necessary information which is to be disclosed (Li et al., 2021). In the context of the European fast fashion industry can disclose, the sustainability metrics such as waste management, community relationships, Product safety. Green House Gases emissions (GHG), and anticorruption indices etc to attract investors.

Establishing Corporate Governance

Establishing best corporate governance practices; such as overnighing the board on ESG issues, allocating committees to oversight ESG initiatives, robust processing to identify risks, and measurement of success, etc could be some good practices. It may also include considering financial disclosures aligned with ESG, putting internal controls, and creating data collection processes that help to control and modify overall activities. In the context of the sustainable supply chain of the European fast fashion industry, allocating a dedicated department of ESG helps to maintain all the activities, whereas the corporate governance department helps to maintain surveillance of the activities.

Integration of ESG In Business Strategies

ESG initiatives are vital factors of business strategy as they ensure social and environmental well-being by different companies as per prevailing legislations and regulations. Coordinating different business functions with the overarching ESG framework, conducting a review of sustainability developments, managing ESG reporting, enhancing investor relations, and responding to the stakeholders regarding their ESG queries are considered good practices for the organizations. For example, H&M has been able to produce transparent sustainability reports along with active engagement of the stakeholders in the overall supply chain as a fast fashion company (H&M Group, 2022).

ESG Reporting

High-quality reporting of ESG initiatives is considered another significant essential practice to be followed as it helps to evaluate accurate results by underpinning different disclosures and underpinning transparency among all the stakeholders. In the context of the fast fashion industry, reporting environmental impacts, employee relations, and governing activities at different stages of the overall supply chain is beneficial to enhance the overall supply chain of the industry. The involvement of the Global Reporting Initiative also helps to provide a framework of universal standards to be followed during ESG reporting based on management systems, governance, and reporting practices (Global Reporting Initiative, 2022).

Continuous ESG Research

The ESG research is considered another significant practice to be followed that involves third-party research in terms of identifying how different companies are adopting ESG initiatives (Li et al. (2021). It helps the investors to make an informed investment decision based on industrial sustainability metrics

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on ESG indices. In the context of the sustainable supply chain of the European fast fashion industry, researching about overall retail industry as well as other countries would aid the stakeholders to take appropriate decisions.

ROLE OF KEY STAKEHOLDERS TO MANAGE THE IMPACT OF ESG INITIATIVES

Stakeholders have the responsibility of taking vital decisions in an organisation by analysing both the internal and external environment, which helps to enhance overall business strategy and lead towards long-term sustainability (Zhuang, et al., 2019). In the context of ESG initiatives, stakeholders play a significant role in identifying organisational activities toward environmental and social contribution, which helps to evaluate appropriate measures to be taken. The key stakeholders of the European fast fashion industry in terms of ESG initiatives include employees, suppliers, regulators of the industry, civil society organisations, and communities that are involved in the industry. These key stakeholders play significant roles in establishing an appropriate ESG framework in companies like H&M, Zara, Burberry, and other fast fashion companies to establish sustainable supply chains. Table 2, (see Table 2,) shows some of the roles of key stakeholders to manage the impact of ESG initiatives.

Table 2. Roles Of key stakeholders to manage the impact of ESG initiatives

Serial no.	Stakeholders	Roles	Power	Interest
1	Employees	Provide feedback on human rights, discrimination, and other social factors in the company; finish basic operations like making reports, conducting research	Low	LoW
2	Suppliers	Maintain relationships with the stakeholders	High	Low
3	Regulators of the industry	Implement regulations of ESG, including environmental and social factors to be followed	High	High
4	Civil Society organisations	Integrate and monitor social factors to be maintained in companies or industry	High	Low
5	Communities	Identify and communicate issues regarding human rights, discrimination, or pollution-related factors in the locality	Low	Low

the ESG initiatives are required to be managed based on the roles played by the stakeholders and in line with prevailing regulators of the industry. Such actions will help the organisation to integrate and justify the strategies. The employees of different fast fashion companies play a significant role in providing feedback related to internal factors related to social and environmental concerns. Suppliers of fast fashion industries also have the responsibility of maintaining relationships and engagement with the stakeholders as a significant part of the supply chain adopt ESG initiatives.

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RESULTS AND ANALYSIS

Any organisation, industry, business, or country using technology without a humanistic and sustainable approach may fail to achieve long-term goals for various stakeholders. It is relevant that we need more production capacity better and faster supply chains, using an exploit technology. However, it should not be done at the expense of humanistic social environmental and sustainability approaches. The supply chain of the fashion industry has a great role in this light. On the one hand, it involves extensive use of technology, and on the other hand it requires embedding ESG framework in the production and whole supply chain of fast fashion. From the literature review of the research, it has been found that ESG is not only regulatory but also a humanistic framework that involves environmental, social and governance factors followed by an organisation to maintain growth and sustainability in their business activities. This section includes some deeper thematic analysis.

THEMATIC ANALYSIS RELATED TO ESG, SUSTAINABILITY, AND SCM

Overall thematic analysis of a range of research papers and articles revealed many themes, such as Themes; Fast fashion and ESG, The sociocultural factors impacting ESG initiatives in SCM, The impact of ESG initiatives, Climate change and ESG, Waste management and ESG, Discrimination and ESG and Sustainable Supply chain and ESG (see Table 3)

Table 3. Thematic analysis related to ESG in SCM

Code	Themes	Areas of ESG
Fast fashion has become one of the significant trends	Fast fashion and ESG	Environment, Social and Governance.
The supply chain is defined as the set of activities or components of an organisation. The social cultural factors are related to employees, organisations countries, and social demographic information	<i>The sociocultural factors impacting ESG initiatives in SCM</i>	Environment, Social and Governance.
The impact of ESG initiatives is significantly based on organisational behaviours in the industry	The impact of ESG initiatives	Environment, Social and Governance.
Climate change is considered one of the most impactful factors in human history as well as the economy	Climate change and ESG	Environmental
Waste management is also considered another influential factor	Waste management and ESG	Environment
Discrimination is one of the significant social factors that disrupt the quality of the workforce	Discrimination and ESG	Social
Supply chain sustainability has a significant area of monitoring the initiatives	Sustainable Supply chain and ESG	Environment, Social and Governance

Fast Fashion And ESG

The fast fashion trend in the European industry involves quick, design, development and quick delivery of fashion products in different stores.. The textile regulation of the European Union also supports this aspect, which gives the fast fashion aspects in effective growth. In this way, this market is highly affected

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due to the present scenario as well as the development which is taking place in the marketplace. This is the first theme in the European fast industry. In fast fashion, the fashion organization use effective design cum quick manufacturing, thus launching new products and attracting lots of customers. The overall value of fast fashion will reach up to \$123.9 billion by the year 2025 (Statista, 2022). High Street commercial areas also have this kind of trend by which people can access more products as well as styles in a shorter time frame. In the year 2019, various retailers have sold millions of fast fashion clothing units; Zara (2982 Million units), H&M (2226 Million units), M&S (1324 Million units), Primark (989 Million units), JD Sports (602 Million units), Next (532 Million units) Sports Direct (42 Million units), Asos (349 Million units), Debenhams (301 Million units) and Arcadia (241 Million) (Sabanoglu, 2020). Fast fashion has a direct relation with ESG practices in SCM.

Supply Chain Management and ESG

The assessment of ESG initiatives in the supply chain involves exploring the activities or components of organisation.. The SCM activities involve in manufacturing of clothing products as well as the finalisation of the product to deliver it to the European market. Using the metrics based on the ESG initiative can help to avoid the issues of sustainability in the supply chain issues. For example, H&M gets supplies from several suppliers and factories from China (789), Bangladesh(428), Turkey(269), India(281), Indonesia(99), Myanmar(79), Vietnam(76), Italy(106), Portugal (80), Cambodia (40), Pakistan (38), and France (26) (Coppola, 2020), thus the various countries are involved in the supply of fast fashion to H&M and each has to take proportional actions.

The Sociocultural Factors Impacting ESG Initiatives In SCM

In sustainable SCM the ESG initiative is impacted by and impacts Organisational behaviour. Social and cultural factors may lead to discrimination in the workplace due to the unequal treatment of employees. Undue social exploitation also affects the organisational culture and then ESG. The human rights aspects affect the process of social welding in ESG. The governing initiative related to the ESG in the supply chain also affects the organisational aspects and gives assurance in the implementation of sustainability and maintaining a regulatory framework in SCMs. The leadership practices related to the working process also influence ESG practices.

Climate Change and ESG

Climate changes are a natural phenomenon occurring due to variations in temperature levels and weather patterns of a particular area over a long period. The climate changes are in form of global warming, due to human activities such as the burning of fossil fuels like coal, deforestation, soil erosion, and emission of harmful gases such as CO₂ from power plants and vehicles, toxic waste disposal from industrialisation etc. The ESG practices in the fast fashion industry can lead to a lowering of Climate change. The adverse effects of global warming lead to climatic changes such as frequent tropical storms, rising sea levels, intense heat waves, melting of glaciers and warming of oceans which have a major impact on animals and human lives. These climatic changes are directly responsible for affecting the organisational activities of the European fast fashion industry, such as the production and distribution of goods which had a major impact on the demand and supply of the company.

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Waste Management and ESG

Waste management is the process of careful treatment and disposal of waste from household, industrial, organic and medical industries. It is the systematic management of waste which involves the collection of waste, transportation, processing and disposal. The waste management techniques are based on five principles such as refuse, reduce, reuse, repurpose and recycle. A proper waste management system by the fast fashion industry leads to a reduction in the level of air pollution, water pollution, soil contamination etc. which overall improves nature and the environment. The European fast fashion industry follows the waste management system to reduce the wastage generated in the operational process by recycling and reusing the waste or leftover materials. These waste and leftover materials are then converted into finished goods with the help of raw materials and a proper waste management system. The fast fashion industry follows the sustainable waste management system, which involves advanced management techniques in order to reduce environmental challenges and also to preserve resources. Effective waste management enables reducing the areas of landfill and dumping grounds which facilitates environmental protection from harmful chemical wastage and builds a sustainable environment for the industry to expand their business operations.

Discrimination and ESG

Discrimination is the social factor that affects the quality and performance of the workforce in an organisation. Discrimination is the behaviour of unfair treatment to someone or a group of people in comparison to other individuals or sections of people. Workplace discrimination involves unfavourable treatment of an employee or a group of workers as compared to another group of workers in the same department. It involves the differentiation of employees by the business manager at the workplace due to a number of factors such as race, colour, sex, religion etc. This discrimination of employees creates low morale and low self-confidence among workers, which results in reduced efficiency and low productivity. The European fast fashion industry faces discrimination of employees in their organisation as it involves better treatment of those employees who are performing well and unfair treatment of those employees who are not performing well in the production as well as distribution process. This affects employee promotion and development at the workplace, which could reduce the productivity and performance of the company and also its future growth.

Sustainable Supply Chain And Environmental, Social, and Regulatory Governance (ESG)

Supply chain sustainability is the process of maintaining a suitable and safeguarding business environment during the process of supply chain management. Supply chain management involves adequate availability of raw materials, production of goods, distribution, supply of goods and delivery of final goods to potential customers (Dimson, et al., 2020). Supply chain sustainability is the process of maintaining the standard processes of effective supply chain management by the company without affecting the environment and social values. The European fast fashion industry focus on building and maintaining sustainability in their supply chain practices to enable the smooth flow of production, distribution and delivery process by developing sustainable environmental progress.

Industry 5.0 and Environmental, Social, and Governance Initiatives in Supply Chain Sustainability**ESG INITIATIVES AND CONSEQUENCES IN INDUSTRY 5.0**

As mentioned the matrix of industry five should be the combination of the use of technology, efficiency, effectiveness, humanistic approach, environment, sustainability etc. This chapter has focused on ESG initiatives to be embedded in industry 4.0 or 5.0. ESG refers to the plan, principles, and strategies which reflect on corporate sustainability. It enhances the performance of the organizations and develops effective strategies. It has a significant impact on the fast fashion industry. ESG helps to meet sustainable outcomes and improves the quality of the services. Besides that, it helps in to overcome challenges and establish sustainability (Centobelli et al., 2022). This industry has repeatedly followed unsustainable practices, which is harmful to the organization. They stand for the fast delivery of products to the customers. The products have a shorter life cycle, and the industry mainly focuses on reduced costs of the supply chains. This provides benefits to the industry without compromising the quality of the products. The fast fashion industry has negative environmental and social impacts. Therefore, ESG helps to set regulatory standards to provide safety to the environment. Besides that, it sets rules for social concerns such as human rights and discrimination (Peters, Li, and Lenzen, 2021). Therefore, this approach helps to identify the opportunities for this industry to improve its performance in the future. Besides that, it helps to know about the potential risks which can influence their functions (Niinimäki et al. 2020). It also provides transparency in the supply chain process and helps to deliver a sustainable environment.

Initiatives of ESG help to monitor the performance of the company and assure sustainability in the workplace. It maintains a regulatory framework and takes necessary steps to avoid risk factors. It improves the quality of work by delivering sustainable packaging and materials. Therefore, the implementation of this strategy in the fast fashion industry helps to deliver sustainable products (Pal, Shen and Sandberg, 2019).

On the other hand, it is essential to monitor the framework of the organization and ensure eco-friendly products. ESG ensures to delivery of sustainable, reusable products. Customers can become aware of the quality of the products, and they will get information related to the recycling and reuse of those products. ESG initiatives will help to consider these factors and contribute to a sustainable environment (Peters, Li, and Lenzen, 2021). SCM is an essential part of an industry. Therefore, it is essential to manage the SCM in a proper way, which will help to improve the performance of the company. It also promotes diversity and equality, which is necessary to enhance the culture of the organization. Initiatives of governing help to gather information related to the employees, customers, and other stakeholders (Niinimäki et al. 2020). This information helps to know their requirements and adapt strategies as per their needs. Implementation of the SCG will improve the functions of the fast fashion industry and satisfy the needs of the customers. Besides that, it will help to identify the contemporary factors which can influence the business (Centobelli et al., 2022). As a result, it will develop strategies against these factors and meet the organizational needs. ESG initiatives also improve the behaviors of the organization and set the activities to achieve sustainable SCM. Furthermore, it creates a positive influence on climate change, which is essential to develop a sustainable environment. By using this ESG framework, some of the leading companies in Europe have been able to create alternatives which are synthetic fibre, and even can significantly develop more “eco-friendly manufacturing” along with the dyeing process. On the other side, the awareness of the customers helps in promoting accountable consumption. Some of the major brands helped in investigating the sourcing the sustainable practices and even the manufacturing and circular design. For example, ASOS also has launched clothing production of the clothing. Thus, it can be stated that it will help in increasing the value chain mainly by 2030. The implementation of

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the ESG framework, the “UNFCCC Fashion Industry Charter for Climate Action, sets” mainly targets for decarbonising the emissions of the half greenhouse gas and supply chain mainly by the year 2030. Along with this, it also achieves “net zero emissions no later” rather than 2050. On the other side, with the increment of fashion, brands and globalization are working hard to ensure their “global corporate standards” for safety, health, sustainability, and product quality and even adhered to and even maintained throughout the supply chain.

ESG initiatives also help in waste management. Elimination of waste is a crucial part of SCM. It has a significant impact on climate change. It can increase the level of air pollution and contribute to increasing greenhouse gas. It is the responsibility of the fast fashion industry to remove waste products and to deliver a sustainable environment (Peters, Li, and Lenzen, 2021). Implementation of the ESG can help to manage waste produced in a better way and reduce the emission of carbon.

ESG initiatives can improve social culture in the organization and promotes equality in the workplace. It allows diversity in the workplace and promotes human rights (Niinimäki et al., 2020). As a result, the employees are encouraged to improve their performance. The set of principles helps to improve organizational culture and its functions. It is essential to adopt precautions during the manufacturing process (Pal, Shen and Sandberg, 2019). It will help to reduce waste materials and adopt appropriate approaches to avoid risk factors. However, organizational behaviors are one of the important factors which can affect the implementation of ESG (Centobelli et al. 2022). The organization should focus on equal treatment of the employees. Discrimination in the workplace can affect the growth of the industry. Besides that, it can affect the individual performance of the employees. Therefore, the proper implication of ESG helps to maintain the regulatory framework and improve the SCM (Peters, Li, and Lenzen, 2021). At the same time, it helps to adopt an appropriate leadership strategy, which has a positive response to the organization. ESG initiatives can promote a safe business environment by delivering a sustainable supply chain system. It allows sustainability in the SCM and increases the value of the services. It maintains a standard process of production and delivers the process smoothly by developing sustainable SCM. As a result, it will help to deliver quality products to the customers and maintain the effective process during the manufacturing. Furthermore, it helps to add social values and establish sustainability in the supply chain process.

DISCUSSIONS ON EMBEDDING AN ESG FRAMEWORK SCM AND INDUSTRY 5.0

By impacting the environmental social and governance framework in a supply chain, the business is can achieve the goals of industry 5.0.

In the literature review, it has been found that ESG or environmental, social, and regulatory governance standard (ESG) is one of the important initiatives which need to implement in the fast fashion industry, and its supply chain aspects for sustainability reasons. In terms of the European fast fashion industry and its supply chain, the use of ESG will be an effective framework, as the framework is very convenient, valuable and effective for the work on manufacturing, delivery and SCM.

Social factors such as discrimination and the application of human rights in the workplace, demand actions from the industry. The Governance initiative can be influenced by the leadership as well as the regulatory framework in SCM. However various challenges such as lack of scale or knowledge or financial investment or workforce awareness can lead to no implementations of ESG. The various good practices

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such as stakeholder engagement, assessment of the material as well as the establishment of governance practices are significant for the effective implementation of ESG. Sustainability practices need to be implemented for the proper improvement and avoidance of environmental problems.

Apart from this, the regulations of the textile, mainly among the EU, make a great concern in the implementation of ESG frameworks, to improve the quality of the work. Equal treatment is essential in the organization which encourages the employees to increase productivity. Implementation of the ESG can help to provide equality in the workplace (Dragomir and Dumitru, 2022). It promotes fairness and opportunities in the workplace. ESG ensures dignity and respect to the employees, and promoting equality in the workplace helps to achieve organizational goals (Arrigo, 2020). ESG initiatives help to improve the satisfaction of the customers by delivering sustainable products (Arrigo, 2020). The Fast Fashion Industry should adopt this strategy to reduce the harmful effects of supply chain practices and encourage a sustainable environment. This strategy maintains a standard process and adds social values to the services (Dragomir and Dumitru, 2022).

RECOMMENDED ACTIONS TO EMBED ESG INTO THE SUPPLY CHAIN FOR INDUSTRY 5.0

The integration of ESG initiatives is beneficial to support environmental and social concerns of the government for the overall sustainability of the business industry.

Based on the analysis and findings, the European fast fashion industry should integrate a centralised ESG-based communication and feedback management system for all the employees, as it will help to provide transparency for ESG initiatives taken by the management. The stakeholders should focus on renewable energy to reduce carbon emissions, effective energy consumption, and minimise pollution, thus protecting the environment. Integration of a dedicated department of ESG with investment and transparency will help to generate an appropriate and centralised reporting mechanism.

Companies like H&M, Zara, Burberry, and many others have been able to establish sustainability strategies with the help of reporting and appropriate decision-making of the stakeholders, which helps to maintain social and environmental well-being. However, the challenges such as, lack of information, lack of engagement, and emerging environmental sustainability trends might disrupt overall ESG initiatives in terms of establishing a sustainable supply chain.

Also, the identification of the right approach for the company, identifying stakeholders through evaluating engagement, assessment of materiality, establishing governance, integration of ESG in strategy, reporting frameworks, and ESG research are the strategies for successful integration of ESG in SCM for Industry 5.0

CONCLUSION

As we enter the era of industry 5.0, we must balance the use of technology along with the goals of various stakeholders such as customers employees, the government, the environment, and sustainability. This chapter discussed the various factors, processes and teams later dude implementation of ESG framework into of European fashion industries. The ESG framework involves certain environmental, social and governance factors, which enables the stakeholders to identify and understand the company's situation

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in managing risk and opportunities related to environmental causes such as carbon emission and waste management, social causes like employee rights and governance factors such as corporate policies. The European fast fashion industry is in the process of implementing ESG regulatory framework to boost its growth and maintain sustainability in its business operations. This kind of framework significantly influences the fashion industries for the identification and even tackling the problems around this appearance. The ECG also helps all the fashion companies in European fashion industries enhance their brand image, minimizing waste, producing more eco-friendly products, and even minimizing reuse and recycling. Hence sustainability in SCM can be maintained through ESG factors.

The ESG approach enables the fast fashion industry to improve their business operations of manufacturing, distribution and logistics processes; while considering the environmental safeguarding principles. Proper waste management and sustainability across the supply chain process have reduced environmental pollution to an extent, as the company's primary goal is to develop and achieve sustainability across the business activities.

The application of the ESG framework in the fast fashion industry results in reducing environmental wastages, improving Social aspects such as maintaining human rights for the labours and better sustainability and Climate, all resulting in in better organisational performance. The fast fashion industry could efficiently implement the sustainable supply chain process by using environmentally friendly raw materials, using operational resources to boost efficiency, and applying green energy sources to provide power to the company's operations.

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