

Supply Chain 4.0: Sustainable Operations in Fashion Industry

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Abstract

This study examines how the fashion industry can pursue long-term innovative developments for the creation of social, economic, and environmental value. It necessitates few changes to current operational practises. For this research, planned to observe closely and gain pragmatic insight into ESE (Economic, Social, Environmental) model and how the fashion industry can benefit from it. To do this, I've conducted personal interviews with representatives from various brands and analyzing their latest GRI reports. This provides with me the empirical material to analyze and draw conclusions from. Additionally, I did research to gain a better understanding of current state of fashion industry in regards to ESE model. The ESE (Environmental, Social and Economic) model is a great way for fashion brands to work towards sustainable development. It is a holistic approach that takes into account the environmental, social and economic impacts of a company's operations. This model can be used by both large and small fashion brands to ensure that their operations are sustainable and have minimal negative impacts on the environment.

Keywords: Sustainability, Fashion Industry, ESE Model, GRI Reports, Sustainable Development.

1. Introduction

Sustainable development is becoming increasingly important for fashion firms as it can help them increase in sales and other things. Multinational companies are adopting various approaches of sustainable development depending on their strategies of survival. This approach has helped the company to improve its products and brand reputation, as well as generate economic profit [1]. H&M and ZARA are two of the biggest fashion companies in the world, and they have both taken steps to ensure that their operations are sustainable. They have implemented initiatives such as using recycled materials, reducing water consumption, and investing in renewable energy sources.

These efforts demonstrate their commitment to sustainable development, which is essential for

protecting the environment and ensuring that future generations have access to resources. Additionally, these companies are also taking steps to ensure that their production processes are socially responsible by providing fair wages and safe working conditions for their employees. By doing so, they are helping to create a more equitable society. Ultimately, these efforts demonstrate that large companies can be part of the solution when it comes to creating a more sustainable future [2].

The most effective way to operationalize sustainability with full efficiency is to implement a comprehensive sustainability strategy. This strategy should include the following components:

1. Establishing clear goals and objectives for sustainability initiatives. This should include setting targets for reducing environmental impacts, such as reducing energy and water consumption, as well as setting targets for improving social conditions, such as increasing wages and providing better working conditions.
2. Developing a plan of action to achieve these goals and objectives. This should include identifying the necessary resources, developing strategies for implementation, and establishing timelines for completion [3].
3. Implementing the plan of action by engaging stakeholders in the process, including employees, suppliers, customers, and other partners. This should involve creating incentives for participation in sustainability initiatives and providing training on how to implement them effectively.
4. Monitoring progress towards achieving the goals and objectives set out in the plan of action. This should involve collecting data on performance indicators related to environmental impacts and social conditions, analyzing this data regularly, and taking corrective actions when necessary [4].
5. Evaluating the success of the sustainability initiatives by assessing their impact on environmental performance and social conditions over time. This should involve conducting surveys or interviews with stakeholders to assess their satisfaction with the initiatives implemented and making

adjustments where necessary to ensure that they are meeting their desired outcomes [5].

This research focuses on the benefits generated from sustainable development in the fashion industry. It will analyze the current state of sustainability in the fashion industry, including supply chain management, product manufacturing, and small manufacturing units. It also explores how sustainable development can be used to improve competitiveness in the fashion industry. Additionally, this research investigates how sustainable development can be used to create a more ethical and environmentally friendly fashion industry. Finally, it examines how sustainable development can be used to create a more profitable and successful fashion industry.

2. Purpose

Sustainability has become an integral part of the fashion industry, as it is essential for the long-term success of the industry. The European Commission has suggested that fashion manufacturers may not have a strategic approach to sustainable development due to the potential negative impacts on their growth opportunities and competitiveness. However, this does not mean that sustainability should be ignored. On the contrary, it is important for fashion manufacturers to develop a comprehensive sustainability strategy that takes into account both environmental and economic considerations. This could include initiatives such as reducing waste, using renewable energy sources, and investing in sustainable materials and processes. Additionally, manufacturers should strive to create products that are durable and can be reused or recycled. By taking these steps, fashion manufacturers can ensure that their business practices are sustainable while still remaining competitive in the market [6].

3. Literature Review

The traditional apparel industry has been disrupted by the emergence of new trends such as 'quick fashion' and 'street fashion'. These trends have been driven by globalisation, changes in customer base, and the entrance of competitors into previously protected markets. As a result, the traditional model of fixed trade fairs and shows presenting the forthcoming season's trends has been replaced by a more dynamic system that is able to respond quickly to changing customer demands. This shift has enabled companies to forecast demand more accurately and respond faster to changing consumer tastes [7]. The fast fashion industry has undergone significant changes in recent decades, as consumers have become more fashion-conscious and the need for standardized designs has been eliminated.

On the other hand, companies also take initiatives to improve sustainability in their fashion supply chains.

For example, some companies have adopted green supply chain management (GSCM) practices to reduce their environmental impacts. GSCM practices include reducing energy consumption, using renewable energy sources, and recycling materials. Companies can also use sustainable sourcing strategies to ensure that their suppliers are compliant with environmental regulations and standards [8]. Sustainable sourcing strategies include selecting suppliers based on their sustainability performance, conducting regular audits of suppliers' operations, and providing incentives for suppliers to adopt sustainable practices. Additionally, companies can use life cycle assessment (LCA) to evaluate the environmental impacts of their products throughout the entire product life cycle. LCA helps companies identify areas where they can reduce their environmental impacts and improve sustainability in their fashion supply chains [9].

For large fashion brands, the ESE model can be used to create a comprehensive sustainability strategy that takes into account all aspects of their operations. This includes reducing their carbon footprint, using sustainable materials, ensuring fair labor practices, and investing in renewable energy sources. Additionally, large fashion brands should also focus on creating transparency in their supply chain and engaging with stakeholders to ensure that their sustainability goals are met [10]. For small fashion brands, the ESE model can be used to create a more focused sustainability strategy that focuses on specific areas of their operations.

This could include using sustainable materials in production, reducing waste through efficient processes, or investing in renewable energy sources. Additionally, small fashion brands should also focus on creating transparency in their supply chain and engaging with stakeholders to ensure that their sustainability goals are met [11].

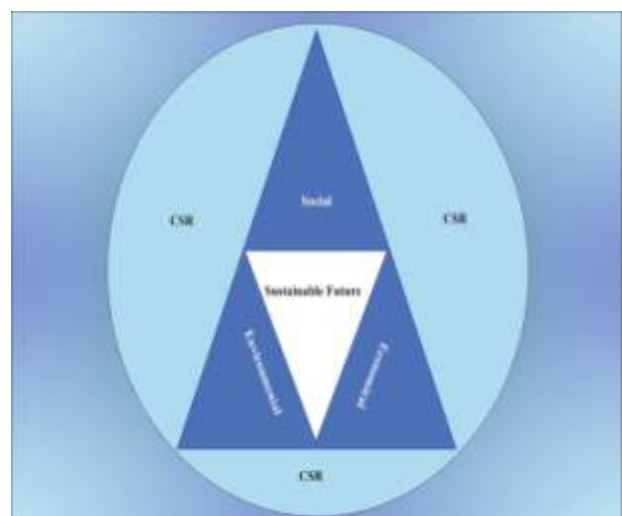


Figure 1. CSR & Sustainability Framework

To exaggerate sustainable development theory towards a business perspective, this framework is based on a three-dimensional approach of sustainable development known as economic, social, and environmental. This will aid in increasing conceptual understanding of business aspects.

3.1 Fashion Supply Chain & Sustainable issues

The fashion industry must adopt sustainable practices in order to meet the changing needs of consumers and protect the environment. The ESE Model is a useful framework for understanding sustainability, as it includes environmental, social, and economic aspects. Fashion firms must implement green distribution, eco material preparation, green retailing, and sustainable manufacturing. These practices will help to reduce the negative impacts of mass production on society and the environment while also meeting consumer needs [12].

Sustainability is becoming increasingly important as businesses strive to meet current needs without jeopardising future generations' needs. The ESE Model, which incorporates environmental, social, and economic aspects, is a new concept that offers a framework for fashion companies to consider when developing sustainable practises. Natural resources, weather or climate, a healthy environment, and energy are all examples of environmental aspects. A balanced society, individual development, and basic needs are examples of social aspects. Construction for succession and economy are two economic aspects. Companies must consider green distribution, eco material preparation, green retailing, and sustainable manufacturing to ensure sustainability in the fashion supply chain [13].

3.2 Corporate Social Responsibility

Fashion companies are increasingly recognizing the importance of corporate social responsibility (CSR) and sustainability. CSR is a broad concept that encompasses a range of activities, from philanthropy to environmental protection and employee rights. Companies are now actively engaging in formal sustainable programmes to ensure that their operations are socially responsible and environmentally friendly. These programmes often include initiatives such as reducing waste, using renewable energy sources, and promoting ethical labor practices.

Additionally, many fashion companies are investing in research and development to create more sustainable materials and processes. By taking these steps, fashion companies can ensure that their operations are not only profitable but also beneficial for the environment and society as a whole [14].

3.3 Environmental Responsibility

As fashion consumers become increasingly aware of the socioenvironmental front, their attitudes and behaviors are beginning to reflect this awareness. Consumers are now more likely to purchase eco-friendly fashion items, such as those made from organic materials or produced in a sustainable manner. They understand that sustainable production processes require more natural resources and result in higher prices, but they are willing to pay the premium for products that are better for the environment. Additionally, consumers recognize that sustainable production processes reduce carbon dioxide emissions and help protect the planet. As a result, eco-fashion consumption is on the rise as consumers become more conscious of their environmental impact [15].

3.4 Theoretical Framework

Measuring the sustainability performance of a supply chain is an important part of the framework for creating a sustainable fashion supply chain. Companies can use metrics such as carbon footprint, water usage, energy efficiency, waste management and other environmental indicators to compare different supply chains and identify areas for improvement [16]. Additionally, these metrics can be used to track progress over time and benchmark against competitors. Furthermore, companies should also consider social indicators such as labour rights and working conditions when assessing their sustainability performance. By taking into account all of these factors, companies can ensure that they are making progress towards a more sustainable fashion supply chain [17].

4. Methodology

The main aim of this research is to develop a deeper understanding of research findings by examining the social, economic and environmental factors that may influence them. This will involve looking at how different social, economic and environmental conditions can affect the outcomes of research studies, as well as how these conditions can be used to inform future research [18]. Additionally, this research will explore how different methods of data collection and analysis can be used to gain a better understanding of the results.

Finally, this research will also consider the ethical implications of conducting such research and how best to ensure that all participants are treated fairly and with respect [19].

4.1 Research Design

This research includes both meaningful and qualitative data. Primary data was gathered through workshops and interviews, while secondary data was gathered from a variety of accredited journals, articles, and research reports. The foundation of this study is the qualitative research method of non-numerical data collection and explanation. This method involves gathering information through open-ended questions, such as interviews and focus groups, which allow for a more in-depth examination of the subject at hand. The collected data is then analysed to identify patterns and themes from which conclusions about the topic can be drawn [20].

4.1.1 Sample selection and Data Collection

The data was gathered by collecting samples from companies that publish sustainability and CSR reports in accordance with the Global Reporting Initiative's recommendations (GRI). The GRI data was taken from a database of the previous three years, with approximately ten reports from a few companies [21]. The following code was used to collect the data:

4.1.2 Interviews

The interviews with clothing retailers and hiring managers focused on the research key aspects such as sustainability, advanced technology, and business. Each interview used the same questionnaire, with follow-up questions probing deeper into the research related to sustainable development. During the interviews, questions were asked about how sustainability is incorporated into their business model, what technologies they use to reduce their environmental impact, and how they adapt to changing customer demands. In addition, questions were asked about their current strategies for reducing waste and increasing operational efficiency. The interviews provided useful insights into how these retailers approach sustainability and plan to do so in the future.

4.2 Data Analysis Method

Content analysis is a method of analyzing qualitative data to make valid inferences. In this study, content analysis was used to explore the social, environmental responsibility and sustainability of companies and their supply chains in the face of increasing pressure from the latest fashion trends. The data used for this analysis included interviews, primary and secondary data, as well as GRI reports. Through content analysis, the researchers were able to determine whether or not these companies were sustainability focused.

4.3 Research Limitations

The sample size is another limitation of this research. The study had a small sample size, so the results may not be representative of the entire population. Furthermore, the data gathered was qualitative in nature and may not be applicable to other contexts. Furthermore, the results could have been influenced by the researcher's own biases and preconceptions. Finally, due to time constraints, a more comprehensive analysis of the data collected was not possible [22].

5. Overall Findings & Discussions

5.1 Empirical Data

This data was collected from few companies during personal interviews through phone. These companies were contacted by me personally and I requested the CEO's to give me an appointment for interview. It was positively accepted by the interviewees and they cooperated in very friendly manner which really helped me to gather data. These details are as follows:

Bonjour

Company Name: Bonjour (Zonac Knitting Machines Pvt Ltd)

Name of Interviewee: Vineet Aurora

Designation: CEO of Bonjour Group

Location: Greater Noida, India

Company Introduction

Bonjour brand was established in 1988 with a goal of becoming a final destination for apparel & hosiery products. It is known for its quality & services with a vision of making the brand globally recognised. It has 28 factory outlets pan India, almost 18000 retailers and over 170 distributors. Bonjour is the only brand that used imported patented technology to provide most durable products (Bonjour, 2022).

Empirical Data

Bonjour's idea towards sustainability is to help in improvement of product's efficiency continuously to support customers and environment. They work on every customer's feedback.

As the consumers awareness is increasing towards sustainability, they are also interested in sustainable approaches and would like to apply CSR.

Refer to the management environment, besides the dominance of giant brands, fashion industry is structured in a complex manner and it's the basic need to adapt sustainability for survival in future.

5.2 Timeline

The progress in this research was perceived little fast because it was started late and it took little delay in data collection from retailers and companies through interview.

Tasks	Days	Timing
Introduction	2	April-22
Literature Review	4	April-22
Methodology	6	April-22
Interviews	2	May-22
Analysis & Mapping	3	May-22
Discussion	1	May-22
Conclusion	2	May-22

6. Overall Findings & Discussions

Most of the companies and their management want to develop sustainable strategies in their firms to make their products sustainable. From management perspective, the giant brands like H&M, ZARA can easily adapt the sustainability in their products by developing various strategies and by maintaining the code of conduct with their suppliers but with those brands that are still in growing stage, financial constraint is the biggest problem [23]. Neither they neither are able to put extra efforts on their products nor are they adapting sustainable strategies as the big companies are doing.

Durability & efficiency in products can be considered to aid social sustainability by offering better quality as mentioned by brand Bonjour in their CEO’s interview. However, increase in the quality of products comes under social caring action and helps in avoiding landfill[24].

In today’s scenario consumer’s awareness is increasing about the mass production negative impacts, for instance; deterioration of natural resources, increasing use of toxic chemicals, increase in landfills with textile wastage etc. It has led to the brands & manufacturers for environmentally sustainable practices [25]. This global shift of consumer was well represented in global survey 2019 where almost 83% consumers said that they will definitely transform their buying habits to save the planet. Subsequently, fashion business people announced that environmental sustainability is the only biggest challenge in the industry in 2020 [26]. There are so many giant organisations of research who are focusing only on environmental sustainability from various perspectives and including different topics like buying attitude of consumers towards sustainable materials, products, packaging, sustainable business models [27].

7. Conclusion

The theoretical framework of sustainability and innovation is critical for businesses to ensure the sustainability of their supply chain operations. Companies must consider their consumers' and suppliers' socio-environmental concerns, as well as the risks associated with their supply chain operations [28]. Companies must develop strategies to reduce their environmental impact, such as reducing energy consumption, using renewable energy sources, and minimising waste, in order to achieve this. Furthermore, businesses should strive to develop innovative solutions that will help them become more efficient and cost-effective. This could include investing in new technologies or processes to help them become more efficient and cost-effective. Finally, businesses should prioritise relationships with suppliers who are committed to sustainability and innovation[29]. There is a growing demand for long-term vision and execution of new strategies that involve reorganising a company's operations as well as its supply chain, resulting in a new revolution in this sector.

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