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IMPLEMENTING SUSTAINABILITY PRACTICES: CHALLENGES IN BANGLADESHI GARMENT INDUSTRY

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PLYMOUTH

**IMPLEMENTING SUSTAINABILITY
PRACTICES: CHALLENGES IN BANGLADESHI
GARMENT INDUSTRY**

by

Md Faisul Alam

A thesis submitted to the University of Plymouth
in partial fulfilment for the degree of

DOCTOR OF PHILOSOPHY

Plymouth Business School

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Author's Declaration

At no time during the registration for the degree of Doctor of Philosophy has the author been registered for any other University award without prior agreement of the Doctoral College Quality Sub-Committee.

Work submitted for this research degree at the University of Plymouth has not formed part of any other degree either at the University of Plymouth or at another establishment.

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Abstract

Implementing Sustainability Practices: Challenges in Bangladeshi Garment Industry

Md Faisul Alam

Human activities have had a significant influence on global business with sustainable development challenges in the social, environmental and economic context of businesses. As an important part of the global garment industry, Bangladesh also has many more challenges in terms of sustainability. Though a significant percentage of GDP growth of Bangladesh is contributed by the garment sector, it has some loopholes with respect to social and environmental issues.

This research reviews existing literature on supply chain, sustainable supply chain, sustainable development implementation and practices. It specially focuses on the garment industry in Bangladesh. However, the purpose of this research is to apply the dimensions of the sustainability supply chain implementation and underpin the practices. It has developed a definition and conceptual framework with constructive viewpoint and also this study presents the exploratory case study based research and empirical contributions in the sustainable supply chain practice and evaluation of sustainable implementation in social issues such as workers' health and safety, wages issues, environmental issues like as hazards pollution prevention and treatment; as well as evaluation and suggestions for improvement in sustainability within the garment industry. The research has presented an inspiring panorama of the

initiatives that have been developed throughout the world for sustainable natural resource management and improved societal development.

Sustainability is an important driving force for future competitive advantage. Although there are a lot of garment factories, where various initiatives for sustainability have already started, it is worth assessing the relationship and contribution it has on the supply chain. While the industry struggles towards sustainability, there is a concern about whether they receive expected gains from buyers for that. The research questions were developed based on the literature review and present circumstances.

However, the results of this research indicate that sustainability implementation and practices are more challenging, still the prime issues under review like health and safety issues, poor wage structure, pollution, regulation, stakeholder awareness etc. Another important indication received from the findings is that there is a low contribution for improving cost efficiency by using green materials and green production. So, it is important to consider ways on how to increase the cost efficiency while moving towards a sustainable concept which is related to the economic aspect. This will have a high impact on survival since there is huge competition coming from the garment industries in Asia.

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List of Abbreviations

Accord	Accord on Fire and Building Safety
Alliance	Alliance for Bangladesh Worker Safety
BGMEA	Bangladesh Garment Manufacturers and Exporters Association
BOD	Biological Oxygen Demand
CSR	Corporate Social Responsibility
ILO	International Labour Organization
NGO	Non-government Organization
RMG	Ready-Made Garment
SDG	Sustainable Development Goals
MDG	Millennium Development Goals
GDP	Gross Domestic Product
ISO	International Organization for Standardization
ETP	Effluent Treatment Plant
BEPZA	The Bangladesh Export Processing Zones Authority is an agency
EIA	Environmental Investigation Agency
LED	Light-Emitting Diodes
EPT	Effluent quality standard
HSE	Health Safety and Environment
PSM	Process Safety Management
FLA	Fair Labour Association
TCE	Transaction Cost Economics
UN	United Nations
SREDA	Sustainable and Renewable Energy Development Authority

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Chapter 1. Introduction of the Research

Garment industry has been considered a significant part of the world's economy since the industrial revolution appeared (Anner, 2020). It has been very successful in manufacturing industries which have exhibited continuous growth and became a meaningful element in the global economy (Bhaskaran, 2011; Kalkanci *et al.*, 2019). Considering increasing demands, a large number of factories created a significant volume of products (Pamina and Sandra, 2019). Thus, production capacity and production requirements of the garment industry have been changing as well as responding to the augmented turnover (Taghikhah *et al.*, 2019). It focuses on generating profits from large sales with reduced prices.

A significant event that occurred in the garment industry has been condemned for mishandling human rights, insufficient wages, the anticipation of unionisation, wages discrimination based on gender (Anner, 2020; Huq and Stevenson, 2020) inadequate provisions for standards of minimum labour and lack of safety and fire regulations as well as reduced integrities in infrastructure (Ahamed and Skallerud, 2015; Mangla *et al.*, 2019). Indeed, the collapse of the Rana Plaza¹ is notable among all the accidents of garment factories in Bangladesh (Kumar *et al.*, 2020; Majumdar *et al.*, 2020) which indicates an unsafe work environment (Yadlapalli *et al.*, 2018; de Andrade and Bizzo, 2019).

¹ Employment injury insurance and protection by ILO.
https://www.ilo.org/global/topics/geip/WCMS_614394/lang--en/index.htm (Accessed on 19 July 2019).

Though, measures related to the factory code of conduct as well as workers' rights have been introduced (Anner, 2020; Huq and Stevenson, 2020). These measures are not enough to retain the position as the second leading exporter of garment products in the world (Chen *et al.*, 2014). The question of location has increasingly become very important, especially for facilities of production owned by the factory. The investigation of industrial clusters in countries that are 'developing'² is anchored on various perspectives that focus mainly on the role of linkages locally in generating a competitive advantage in exporting garment products (Humphrey and Schmitz, 2002; Pamina and Sandra, 2019). This industry is labour intensive as well as requires a small amount of fixed capital but offers a big opportunity for skilled employment (Mishra *et al.*, 2014). The reasons behind the cheaper production costs are the skilled workers and good communication worldwide, especially seaport in Bangladesh (Safeer *et al.*, 2019).

1.1 Research Background

In 1990, the garment industry was among the premier industries to maintain the sustainability of the supply chain. This was stimulated by the Nike scandal of child abuse of labour rights in the year 1996³. After few years of this scandal, Nike had been under pressure from NGOs of damaging society and exploiting their workforce (Islam and Islam, 2011). Nike had to agree that the factories could not fix the issue properly since there were no sustainable supply chain standards in the organisation. This was made evident in Nike's 2001 report.

² Sustainability development generate by the 'developed' countries.

³ Nike scandal (2006).

The 5,271⁴ garment factories in Bangladesh are blamed for a history of dangerous factory infrastructure conditions, low wages, poor health and safety issues increase in environmental pollution, etc. The Rana Plaza tragedy occurred because of a lack of supervision and poor construction (Carlson and Bitsch, 2018). It was not caused by an attack by terrorists or an earthquake. For that reason, this led to protests of a whole week shutdown of dozens of websites supplying top American and European brands (Naciti, 2019). At least 1,135 workers died, while 2515 others were injured from fire and building collapse in Rana Plaza in April 2013⁵ in Bangladesh. These were sparked by the dismissal of 121 workers, which soon evolved into a demand for minimum wages of 63US\$ per month.

As per the Guardian investigation report on 20th January 2019, T-shirts made in factories in Bangladesh pay workers 0.45 US\$ an hour⁶. This is one of the lowest wages in the world; approximately less than a fifth of the wage's campaigners estimate the living wage of the nation (Awasthi *et al.*, 2018). After three years of the Rana Plaza tragedy, progress has been made to ensure worker rights and safety in the booming garment industry of Bangladesh (Carlson and Bitsch, 2018). In the academic field, over the past years, sustainability has gained popularity within the research in the supply chain and this has been composed by an increase in the awareness of society and environment among stakeholders (Tachizawa and Wong, 2014). Zhang *et al.* (2019) discussed the sustainability

⁴International Labour Organization (ILO) 2018 Report.

⁵Independend.co.uk.<https://www.independent.co.uk/news/world/asia/bangladesh-factory-collapse-41-charged-over-deadly-rana-plaza-tragedy-a6781876.html> (Accessed on 07 April 2018).

⁶ Revealed: Spice Girls T-shirts made in factory paying staff 45p an hour, The Guardian report 20th January 2019.

sector and extended its supply chain base to emerging economies due to cost advantages. Chen *et al.* (2014) discussed an increase in the global business causing more difficulties in operations of supply chains. It has been facing more difficult environmental and social issues (Uyar *et al.*, 2020). International brands such as The Gap, Walmart, Primark, Mango and H&M, among others, have contributed significantly to the donations of Trust Funds of Rana Plaza emerging (Awasthi *et al.*, 2018; de Andrade and Bizzo, 2019). This was started to compensate the victims of the disaster and their families (Uyar *et al.*, 2020). Considering the significance of a sustainable supply chain, the research has concentrated on the exploration of implementing sustainability practices challenges in the garment industry supply chain and much focus has been put on social and environmental issues (Naciti, 2019). In this regard, one of the primary means for industries to enhance economic advantage as well as cost control while facing stiff competition in markets (Hong *et al.*, 2018).

The study background offers a wide research field that focuses on the primary issue. The research questions emphasise the issue warranting more investigations that are current, in-depth issues and systematic literature review. The objectives of this study describe the primary goal to be achieved in the entire study and questions offer guides on the arguments and inquiries that need to be analysed through this research. Case studies are developed by the real-life experience in the management team, observation and the literature review to connect with previous research, which is justified in this research. Furthermore, the study focuses on the significant contributions and importance of sustainability in the Bangladeshi garment industry.

1.2 Motivation of this Research

In the literature, enhancing the workplaces of the factory is often associated with evaluations through supplier application and buyer supervision of sustainable supply chains as control-based corporate accountability. However, in developing countries such as Bangladesh, buyers may order high quantities from suppliers over a short period of time. Therefore, to meet production goals, workers are often subjected to extreme overtime by suppliers to make production lines as quickly as possible. An example of this is, due to limited legislation until 2006, Bangladesh's garment industry has mainly been self-regulated since its launch in the 1990s. In addition, Bangladeshi trade unions have limited powers when it comes to organising workers to take collective action due to their inadequate associational and structural power (Tighe, 2016; Rahman and Langford, 2014). Thus, it is incredibly difficult for local trade unions to put pressure on suppliers to allocate just wages to their workers and guarantee safe working conditions for them, as the trade unions cannot mobilise collective bargaining. An issue related to this is that a proportion of owners of the biggest factories hold key places in the Bangladesh Garment Manufacturers and Exporters Association (BGMEA) and are also influential Members of Parliament.

Furthermore, the accidents happened in Bangladesh from 2000 to 2017, which is shown in Appendix 1. However, sustainability has been used in organisations as it indicates a positive approach. But the question is, what is a positive approach and how does it work? This is a vital issue in the garment industry; as a result, growing sustainability awareness in burning questions. Several

incidents have been occurring in the last two decades in the Bangladeshi garment industry. Therefore, global buyers, the world community and Bangladeshi civil society are concerned about quality issues and the minimum level of standard for the supply chain.

1.3 Aims and Objectives of the Research

The inspiration behind this study is to encourage change in the global supply chain. The global buyers are choosing Bangladesh for low labour costs and cheaper social activities, also without environmental care (Awasthi *et al.*, 2018). The wide range of earlier research emphasised social sustainability performance and links with organisational competitiveness as well as sustainability policy at garment industry supply chain; those investigations have shown very little empirical evidence (Islam and Liang, 2012).

The study's primary objective is to determine whether and how the garment industry has implemented sustainable supply chain practices. To accomplish the study's primary goal, several research objectives were created. The first objective of this study is to conduct a systematic analysis of the existing literature on sustainable supply chains in general and find any gaps in the current literature on sustainable supply chains in particular. The second objective is to examine the factors that motivate and barriers (such as lack of understanding) the garment industry from implementing sustainable supply chain practices. The third objective examines the effect of theory on adopting sustainable supply chain practices. The fourth objective is primarily concerned with the sustainability practices (such as transparency) that the garment industry implements to achieve a sustainable supply chain. The thesis's

ultimate aim is to integrate the researcher's conceptual framework and empirical observations to establish holistic proof of the implementation drivers and barriers.

1.4 Research Gap

Competition in the global garment industry has become more intense. Hence, the essence of buyer and customer loyalty is getting essential for the garment industry. Customer loyalty is an important factor in making customers stay with the internationally branded company and may ultimately reduce the likelihood of switching (Taqi *et al.*, 2020). Unfortunately, there is very little research that focuses on sustainable supply chains due to the complexity of issues and there is still a research gap. The study has to analyse the justification behind the sustainable supply chain implementation challenge and practice (Ghadge *et al.*, 2019). Therefore, the research questions would be related to literature reviews and address the research gap which is shown buyers influence the supplier to monitor their factory by the third party inspection team and it is developing more sustainable organisation, particularly garment factory needs good workplace, employees' rights, improved waste management, reduced pollution, cost reduction and quality assurance⁷.

1.5 Research Questions

The aim of this research is to identify sustainability implementing practices challenge focusing on environmental, social and economic issues. The sustainability implementing practices can improve and significantly impact the

⁷ Clean Clothes Campaign (2012) <https://cleanclothes.org/news/2012/12/19/tazreen-fire-what-brands-should-do-and-their-responses-so-far> (Accessed on 26 January 2016).

overall performance of the supply chain (Ghadge *et al.*, 2019). The research objectives to address the following three fundamental questions:

RQ 1: How to implement the sustainable supply chain in the Bangladeshi garment industry?

RQ-2: What made the Bangladeshi garment industry adopt sustainability practices?

RQ-3: What are the challenges in practising a sustainable supply chain in the Bangladeshi garment industry?

1.6 Ethical Considerations

Special consideration has been given before starting the data collection due to human involvement in this research. The research policy in the British Psychological Society (BPS) has mentioned *Ethical Principles for Conducting Research with Human Participants -1990* and *Code of Ethics and Conduct (2006, 2009)*, the researcher has treated all the participants equally and shown respect and valued their beliefs⁸. The researcher also considered the obligatory confidentiality for relevant documents. It was carried out ethically according to the demands of the code of practice of the University of Plymouth. The university ethics committee approved the ethical application form before conducting the fieldwork. Participants' consent was obtained before industry visits, observations and interviews. Approval was duly received. See Appendix for the approval letter. The interview participants' letter was collected from the Director of Studies and Graduate School of Management in advance and all the data was preserved on a password-secured computer.

⁸ British Educational Research Association [BERA] (2017) 'BERA Handbook: Member Code of Conduct', London.

1.8 Thesis Structure

Figure 1: Thesis structure

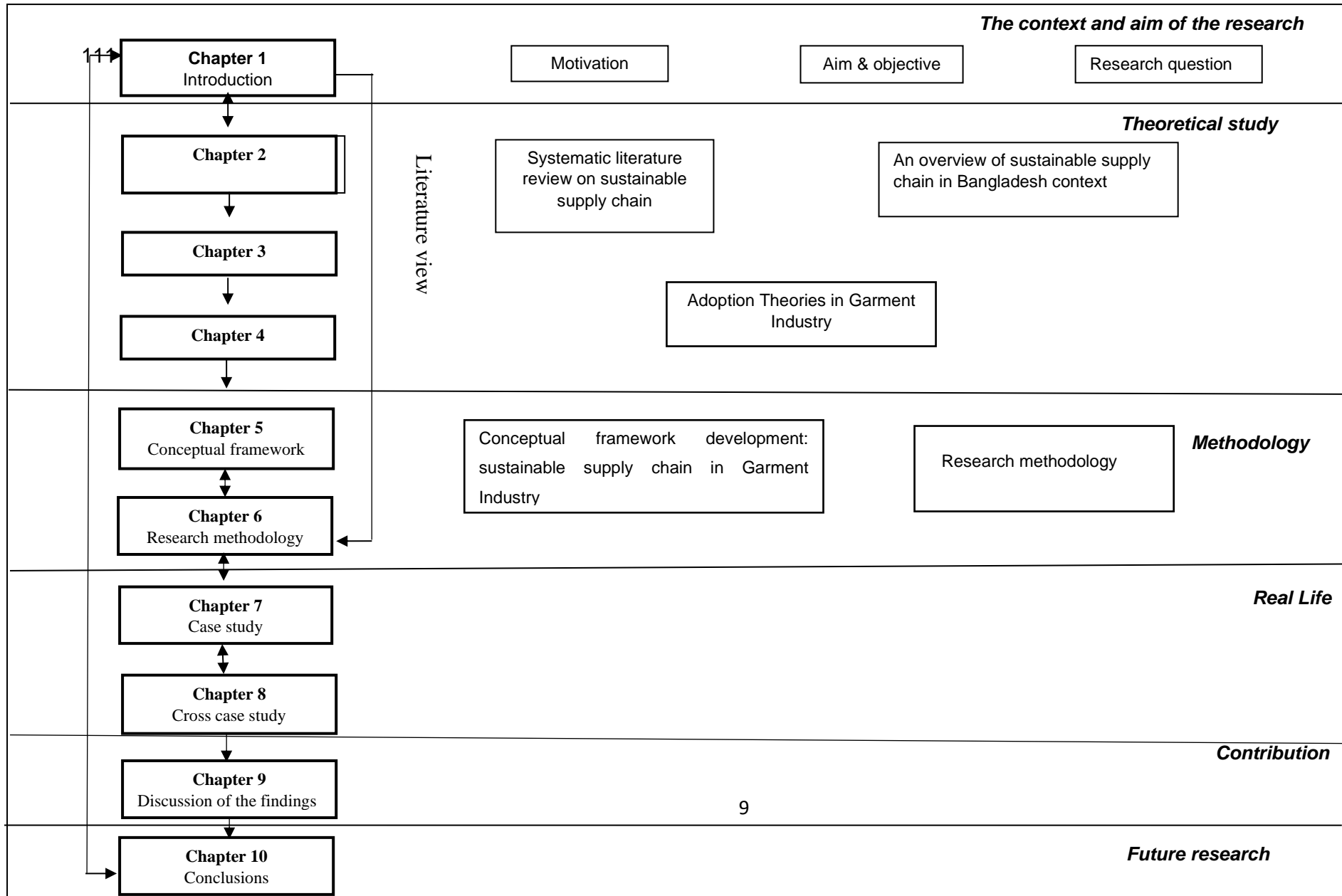


Figure 1: Thesis Structure

Literature Review

Chapter 2. Systematic Literature Review on Sustainable Supply Chain

Previous research from different sources has been conducted to understand a good storyline, reach root-level problems and segregate the segment of the problem statement (Seuring and Müller, 2008; Snyder, 2019; Nilsson and Göransson, 2021). To gain a deeper understanding of literature review is an inclusive aim to collect and analyse all relevant papers in the same field to prepare structured literature (Webster and Watson, 2002, 2021; Farooque *et al.*, 2019). The current research literature review is divided into three subchapters which include a systematic literature review on sustainable supply chain, an overview of the sustainable supply chain in Bangladesh context and adoption theories in the garment Industry. The literature review is considered as a central point and concept to diagnose the organisational structure of a systematic review (Ibn-Mohammed *et al.*, 2020). However, the literature review provides relevant methodologies, conceptual framework, case study and related results (Badi and Murtagh, 2019; Snyder, 2019). It also presents the analysis of sustainability practice, implementation, concept and definition (Martins and Pato, 2019). A systematic review builds up conceptual framework in the proposed model in the statement showing relationships between the suitable variables in the study (Paul and Criado, 2020). According to Tachizawa and Wong (2014) organisation of all activities events in obtaining and transformation as well as all organisational

practices which include relationship and synchronisation with partners and third-party service providers (Hemphill and White III, 2018).

2.1 Approach to the Systematic Literature Review

Chapter 2 reviews sustainable supply chain journals and notes that systematic literature review (Koberg and Longoni, 2019; Nilsson and Göransson, 2021) is different due to uses in a mythological approach that aims at increasing transparency, reliability, validity as well as reduction of biases (Carter and Easton, 2011). The garment industry is getting high attention from supply chain researchers (Perry *et al.*, 2015). For this reason, the implication of a more detailed description of the research has been taken in selecting, scanning and analysing literature review (Tranfield *et al.*, 2003). Moreover, the systematic literature review approach can minimize researcher bias regarding the inclusion or exclusion of studies and to clearly channel how and to what extent the review was performed through transparency (Yang *et al.*, 2017; Snyder, 2019). According to Bastas and Liyanage (2018) a systematic review is a process of one kind of data collection that enables, integrates with the same topic but different works, extending the work in some industries and summarising the common elements. It provides a snapshot of impact on sustainability, different academic activities and practice which deal with garment industries (Meredith, 1998; Kusi-Sarpong *et al.*, 2019).

Systematic literature review and interpretation is a secondary method of study, where the information available is identified, evaluated and interpreted about a specific field or phenomenon of interest (Touboullic and Walker, 2015; Snyder,

2019). To achieve an interdisciplinary and rigorous analysis of the topic, a study has conducted a systematic review of current literature in sustainable intensification (Govindan, 2018; Martins and Pato, 2019). The researcher consented about collecting data, reviewing and reporting previously published research on a given topic is straightforward and reproducible (Paul and Criado, 2020). The study then connected the analysis and developed a philosophical structure for the question and activities of sustainability.

There were three key steps in the approach: review planning, review conducting and finding reporting (Carter and Washispack, 2018). The review approach was inductive in nature and modified the scheme as the research obtained information during the review process, rather than opting ex-ante for an analytic framework (Govindan, 2018). The researcher discussed and established the inclusion and exclusion requirements of the paper first for the material collection (Touboulis and Walker, 2015). From January 2003 to December 2018 has been chosen in line with the research subject, justified by the broad range of scholarly literature reviewed on the subject in this period. The study used the phrase scan for all research papers and review papers released before December 2018. Academic journal articles contain rich data with diverse ranges of necessary subjects to achieve the study goals and peer review maintains a certain consistency standard (Sharma *et al.*, 2020). Still, many have also been briefed by industry studies (Snyder, 2019). Articles have been found using various keywords in the “social sustainability,” “environmental sustainability,” “sustainable supply chains,” and other keywords (as listed in table 1). To ensure a wide variety of appropriate

documentation for inclusion, logical operators (i.e., OR, AND), wildcards (i.e., *), and synonyms of sustainable practices were used (Paul and Criado, 2020). Published papers have been obtained from selecting 217 full journal papers by Scopus, Web of Science, Science Direct, MDPI, Emerald Insight and Springer Link.

The study selects different keywords for finding specific journals within the supply chain which is shown in Table 1.

Table 1: Keywords used for search

Supply chain keyword	Social keyword	Environment keyword	Economic keyword
Global supply chain	Social supply chain	Ecological supply chain	Economic supply chain
Sustainable supply chain	Implementation and practices	Environmental sustainability	Cost reduction
Sustainable supply chain management	Corporate social responsibility	Waste management	Productivity
Supply chain	Human rights in garment industries	Pollution in garment industry	Quality assurance
Sustainability	Social sustainability	Environmental sustainability	Economic sustainability
Garment industry	Labour wages	Climate change	Comparative pressure

Most of the journal papers reviewing the relation with sustainable supply chain (Farooque *et al.*, 2019). There were 217 journal papers in the study's final literature reviewing posts. A supplementary data publication makes the last database accessible. Six cases in the garment industry were evaluated in participatory processes with stakeholders participating in the supply chain to assess the system's applicability for particular regional issue settings. The participatory

approach was chosen from the direct participation of major stakeholders to detect sustainable supply chain adoption as a practical technique for producing region-specific information (Govindan, 2018; Martins and Pato, 2019). The literature review has not covered the entire sustainable supply chain management but provides a big snapshot and impact in a selected case study (Sharma *et al.*, 2020). It also provides feedback to research questions (Yang *et al.*, 2017; Davahli *et al.*, 2020). However, the results will be discussed in the findings section and make a unique contribution to the sustainable supply chain since no authors have previously acted (Govindan, 2018).

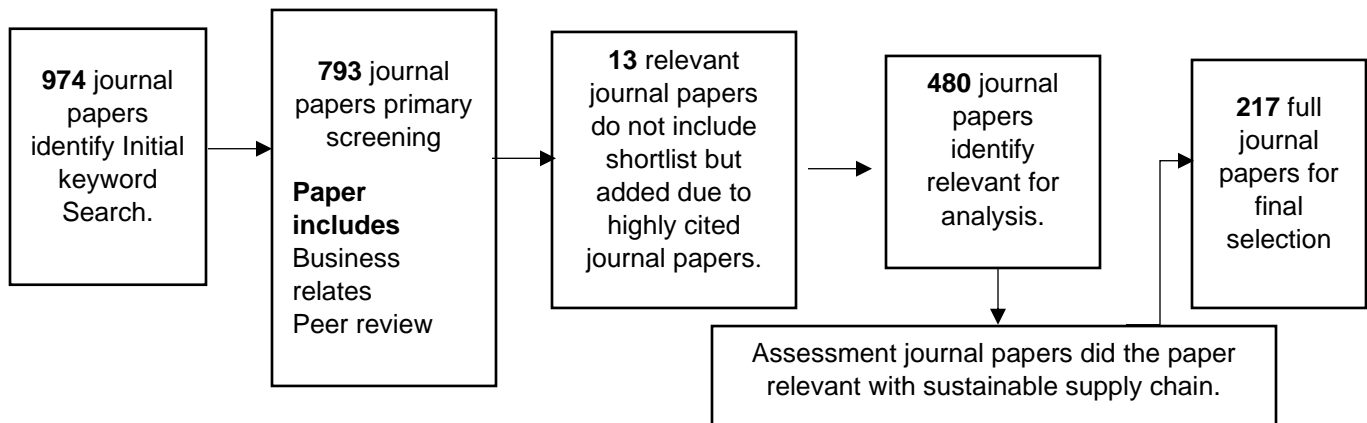


Figure 2: A systematic journal paper search, evaluate and exclusion process

The articles used for conceptual frameworks rather than analytical approaches (Carter and Rogers, 2008). The focus of this chapter led the researcher to believe how researchers have applied theories that conceptualise sustainability in the supply chain through conceptual, qualitative and quantitative approaches (Yang *et al.*, 2017; Farooque *et al.*, 2019). Moreover, it is an important methodology that

discusses future implications of the research (Martins and Pato, 2019) and number of publication screening process shown in Table 3. Therefore, it is clear that there have been attempts to provide coverage of the wider literature review.

2.2 Analysis of Articles by Year of Publication

The distribution of the 217 publications by year is seen in table 3. As seen over the last sixteen years, there has been a rise in publications in developing countries related to the sustainable supply chain, signalling a region's concern. Stable growth seems to be ongoing until 2018 and there is accelerated growth from 2014 onwards. It should also be emphasized that very few papers have been released between 2010 and 2011; forty-six articles between 2012 and 2013; and since 2015, positive changes have occurred in the number of articles written per year, with 2018 being deemed the most prolific overall year.

Table 2: Number of publication screening process for (2003-2018)

Publication	Initial search	Primary screening	Final screening	Full paper
Emerald	374	236	93	48
Sage	105	131	71	29
Science Direct	166	134	87	51
Taylor & Francis	159	108	76	34
Wiley	87	105	87	38
MDPI	83	79	66	17

Notoriously, the increase in the number of publications published in the 2018 Journal of Cleaner Production covering sustainable issues of the developing economy with 10 articles from that year's total 22 published (45.5 percent).

Table 3 –Journals where the Selected Papers have been Published Journal N. of Articles 2003- 2008, 2009- 2013 and2014-2018

Journal	No of Article	2003-2008	2009-2013	20014-2018
Journal of Supply Chain Management	14	4	4	6
Journal of cleaner production	26	3	7	14
Journal of Operations Management	13	2	5	6
Journal of Business Ethics	11	3	4	4
International Journal of Production Economics	8	2	3	3
International Journal of Physical Distribution & Logistics Management	9	2	3	4
International Journal of Operations & Production Management	9	1	4	4
International journal of emerging markets	4	0	1	3
Corporate Social Responsibility and Environmental Management	4	1	1	2
European Journal of Operational Research	8	2	3	3
International Journal of Disaster Risk Reduction,	5	0	2	3
International Journal of Production Research	13	3	4	6
Supply Chain Management: An International Journal	9	1	3	5
The international journal of logistics management	4	0	0	4
Journal of Business Logistics	7	2	2	3
Sustainability,	17	2	6	9
Journal of international economics	5	1	1	3
Journal of International Women's Studies	3	0	0	3
Journal of Fashion Marketing and Management: An International Journal	3	0	1	2
Journal of International management	6	1	2	4
International Journal of Productivity and Performance Management	2	0	0	2
Journal of Purchasing and Supply Management	6	1	1	4
Accounting, Auditing & Accountability Journal	2	0	0	2
Human Relations	3	1	0	2
Journal of the British Academy	3	0	0	3
Corporate Social Responsibility and Environmental Management	4	0	1	3
Total	217	48	63	106

This development began in 2007–2009. A literature review on sustainable supply chain activities in developing economies between 2003-2013 indicates a steadily accelerated pattern since 2013 (Gupta *et al.*, 2020). Since 2014, the number of systematic sustainable supply chain literature reviews has significant rise in volume (Kusi-Sarpong *et al.*, 2019). However, this research indicates the importance and steady surge in sustainable supply chain conversation in developing economies (Biuki *et al.*, 2020). It may be attributed to the increasing interactive and involve economic growth in the world (Carter and Washispack, 2018). Table 3 displays the final review of chosen publications and distributions from January 2003 to December 2018.

Sustainability research into the garment industry expanded steadily from 2010 to 2014, with rising scholarly awareness and interest in the subject intensified from 2018 (Farooque *et al.*, 2019). There are a number of literature reviews that provide that more upward rise in the study should be expected as many issues remain (Badi and Murtagh, 2019; Gupta *et al.*, 2020). The publication of articles indicates that leading reviews contribute to the subject, as seen in (Kusi-Sarpong *et al.*, 2019).

2.3 Analysis of Articles Distributed by Sustainability Dimensions

The distribution of the articles examined on the three dimensions of sustainability is presented in Figure 3. According to Jia *et al.* (2018) an analysis of structural literature review on social dimension is observed as covered in the articles most studied in the analysed articles 2000-2016. The research, 106 of the 217 journal

papers reviewed, discussed social aspects. On the other hand, social issues such as working conditions, job protection and health policies have been debated (Kano *et al.*, 2020). In just 34 of the 217 journal papers, the economic component was presented in the thesis paper. Jia *et al.* (2020) indicated that the systematic literature review provided information about the environmental requirements include diverting waste from waste disposal facilities, reducing carbon dioxide emissions and saving electricity and water. Even if most papers did not address this criterion explicitly, it seemed implicit because profitability and sustainable economic growth were the organisation's key goals (Tebaldi *et al.*, 2018). It is three dimensions; the principle of sustainability is commonly adopted. According to (Kano *et al.*, 2020) possible to evaluate each size separately or combine two or three dimensions in the research. The publications were then categorised according to a sustainable strategy—the papers' distribution in terms of the sustainable solution as seen in Figure 3. 50% of the articles' approach to the three

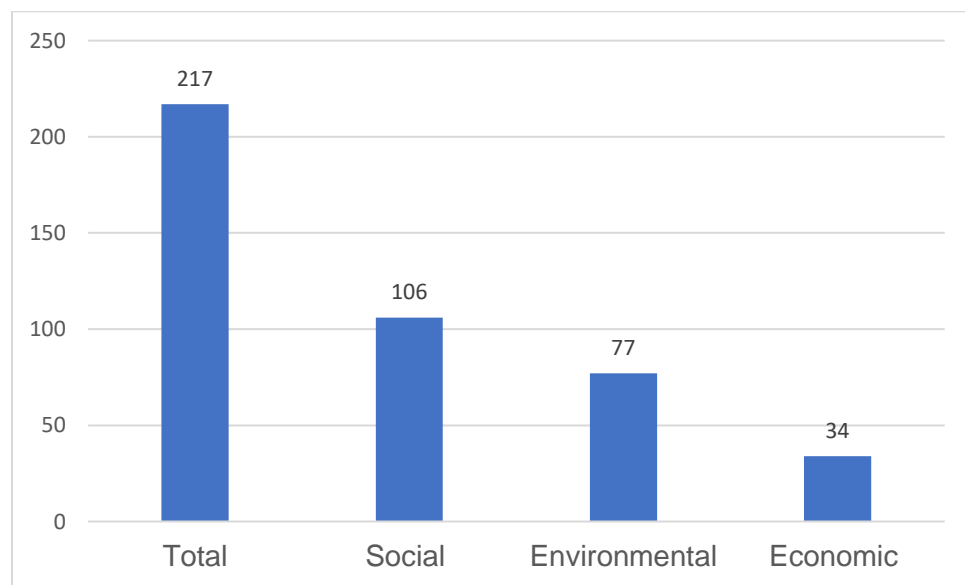


Figure 3: Distributed by sustainability dimensions

sustainable aspects (e.g., social, environmental, economic) followed by 48.85% and 35.48% of the single social and environmental dimensions relevant in terms of study. Next, the environment size in sixty-one papers (28.1% of research) is combined with the social dimension, and thirty-seven articles combined the social and economic aspects; similarly, economic and environmental dimensions combined. In none of the fifty-six papers examined, the economic size is present.

2.3.1 Social Dimension

The social dimension is the most often covered in research publications (Jia *et al.*, 2020), with 64.52% emphasizing themselves or economic and environmental aspects. 106 of the 217 papers concentrated their study on social questions only, nineteen more merged the social with the environmental component and only fourteen were combined with economic issues; also, twenty-eight papers were analysed using a three-fold method. The literature analysis of the global sustainable supply chain found that articles focus more on the social level than on economic and environmental aspects with a single dimension of sustainability (Sharma *et al.*, 2020). Several case studies in Bangladesh on when and how focal corporations in the supply chain adopt and accomplish social sustainability (Shou *et al.*, 2020). The findings found that workplace, teamwork, wages and corporate social responsibility were crucial elements for successful social programs win-win relationships in the field of developing countries between social supply chain practice and strategic advantage (Davahli *et al.*, 2020). Also, Mani *et al.* (2020)

concluded that tackling labour challenges as a social sustainability integral part will improve the sustainable supply chain's efficiency.

2.3.2 Environmental Dimension

35.48% of the papers concentrated on environmental matters by either focusing all their debate on environmental topics or incorporating the social and economic aspects of these aspects. The data obtained was evaluated in 95% of publications based on the area, conducted as an observational or case study. In the developing economies in mainly Asia, growing consideration for sustainable practices was emphasized and environmental focus on research was stressed and social standards were still hardly studied (Davahli *et al.*, 2020). This research concentrated on environmental questions and analysed topics relating to solid waste, measuring carbon efficiency, reducing emissions, minimizing waste and regenerating capital (Carter and Washispack, 2018). Various scholars addressed environmental efficiency enhancement of the sustainable supply chain, environmental quality evaluation and sustainable management techniques (Golini and Gualandris, 2018; Sharma *et al.*, 2020). Other topics in this research were obstacles that influence sustainable logistic practices, environmental growth from outsourcing, supplier engagement and stakeholder relevance on sustainable supply chain exercises (Tebaldi *et al.*, 2018). Moreover, a wide variety of environmental aspects have been considered (Biuki *et al.*, 2020). As a result, empirical analysis and case studies have shown the need to track environmental protection and value the stakeholders' active role in fostering and supporting

environmental activities in developing countries like Bangladesh (Gupta *et al.*, 2020). Furthermore, owing to new legislation, buyers' demand and pressure on working conditions, environmental protection and topics have become increasingly crucial for researchers and managers (Shou *et al.*, 2020).

2.3.3 Economic Dimension

Economic efficiency is a significant reason for its efficient service from a sustainable supply chain viewpoint (Tebaldi *et al.*, 2018). Also, one of the primary metrics is the overall management expense of the supply chain (Golini and Gualandris, 2018). A total of 15.67% of the articles analysed economic problems by combining social and economic dimensions. In the meantime, 77% of these research papers conducted empirical analysis or case study in developing economies. In the success of fields such as revenue, market share, or productive utilization of energy, reports focus on the economic goals sought, even though these relate to the value of expense in the supply chain (Sharma *et al.*, 2020). As a primary mechanism for introducing corporate responsibility in the sense of the developing countries supply chain (Badi and Murtagh, 2019). Economic problems combined analysis and the environmental component, directly referring to the value of compliance with environmental rules and requirements without neglecting economic efficiency (Kusi-Sarpong *et al.*, 2019). However, it should be said that none of the 56 papers conducted research based exclusively on the economic dimension. Still, the papers mixed their study in all respects with the social and environmental aspects (Golini and Gualandris, 2018).

Chapter 3. An Overview of Sustainable Supply Chain in Bangladesh Context

The supply chain concept is critical since it focuses on where and how goods are produced (Huq *et al.*, 2016; Jia *et al.*, 2018). In addition, by whom or what exactly is captured (Rossi *et al.*, 2013). It has various aspects as far as understanding how it can be interpreted in several ways to develop in the global economy (Phillips, 2016). Supply chain beyond the boundaries and increase in international competitions (Uddin and Rahman, 2012; Rossi *et al.*, 2013; Anner, 2020). Therefore, the growing trend towards globalisation led the garment industries to put up a responsive and robust supply chain to make them useful and effective in their operations (Carter *et al.*, 2019).

Based on the study of Akbar and Ahsan (2019) the review should be material and also suppliers have to ensure the balance of quality, rights and local regulations. It is argued that if buyers are systematically communicating with their suppliers about sustainability implementation requirements, it would be more effective for sustainable products (Akbar and Ahsan, 2019; Naciti, 2019). Nonetheless, non-appearance of this will result in barriers (Truong *et al.*, 2017). The same was released in both large multinational companies and SMEs. Furthermore, Huq *et al.* (2016) suggested that multinational organisations must do more than adopting internal practices: they must ensure the timely implementation of social sustainable their own factory or third-party factory.

3.1 Supply Chain Management

In recent years, retailers do not own warehouses to store garment products; instead, they hold the products that are on the selling floor like as Amazon warehouse (Karmaker *et al.*, 2021). Thus, they become lean retailers. Due to this, the warehouses owned by suppliers act as virtual warehouses for retailers and distribution centres owned by suppliers (Abernathy *et al.*, 2006; Gaur *et al.*, 2020). This also enables them to give their buyers the highest quality to have a competitive advantage over their competitors (Ngai *et al.*, 2014; Jia *et al.*, 2020). Nagurney (2015) provided a practical way to use the supply chain that has revolutionised in which products are manufactured, sourced, consumed and distributed all over the world. Organisations have engaged in anti-corruption programmes to reduce fraud, enhance their reputations for business code of conduct, improve quality of products and the business environment and creation of a platform for future growth of the company that is sustainable (Sisco *et al.*, 2011; Kunz *et al.*, 2020).

In terms of modern supply chain management, concepts are working efficiently and effectively as well as all the products dispatched on time, to the right places, and delivered in the right quantities in a cost-effective manner (Christopher and Peck, 2004; Truong *et al.*, 2017). Additionally, they also suggest the appropriate components and the supply chain management has the power to get a more significant share of the profit distributions between retailers and manufacturers (Choi and Messinger, 2015; Al-Aomar and Hussain, 2018). In their study, indicated that they incorporate with the suppliers who are expected to possess the ability to

meet the demands of the buyers in a timely manner, particularly when the suppliers are able to respond to the demand. On the other hand, the supply chain management process provides the structure from end-users through suppliers who supply products and information to add value for stakeholders (Lambert *et al.*, 1998; Tachizawa and Wong, 2014) while research on effective supply chain management is still negligible (Gaur *et al.*, 2020). However, this research impacts employee safety, which affects both material flow and the industry's reputation (Saunders *et al.*, 2015).

In the prior research, the empirical analysis of the cross-function integration of a variety of products and services, supply chain management tremendously adds value to the complexity and effectiveness (Yadav *et al.*, 2014; Naciti, 2019). In other words, supply chain management is termed as an integrated system that harmonises a series of management processes and interrelated in nature (Min and Zhou, 2002; Roy *et al.*, 2020). Successful supply chain management must require cross-functional marketing and integration since it is very critical (Lambert and Cooper, 2000; Chowdhury *et al.*, 2021). In particular, there also refer to the range of activities that are involved in the process of designing, production and the marketing of the products (Gereffi, 1999). The researcher suggests that the supply chain relationship management process starts from production to consumption by the end-user (Baskaran *et al.*, 2012).

3.2 Bangladeshi Garment Industry

The Bangladeshi garment industry is under intensive scrutiny internationally for its violation of issues related to social sustainability (Islam and Deegan, 2008; Jia *et al.*, 2018). Nevertheless, the economy is one of the most vulnerable in the world (Karmaker *et al.*, 2021). One significant issue that arises from the country is characterised by a low resource-based economy, a high incidence of natural disasters, an extremely high population density and frequent socio-political instability (Carlson and Bitsch, 2018). It is in the late 1970s that the potentiality of manufacturing readymade garments was brought to light. In the primary stage, as a newly independent country, Bangladesh was so unstable for international trade. But there was also a growing number of SMEs in the readymade garment sectors.

There is general agreement that a growing SME sector would be one of the principal driving forces in the development of the Bangladesh economy. Still, the Bangladesh economy is largely dependent on small businesses, with 90% of the country's trade conducted by SMEs and the remaining 10% by large industries. Most of the readymade garment SMEs in Bangladesh today have developed their own initiatives.

3.2.1 The Bangladeshi Garment Industry Supply Chain

Since the garment industry have been provided exclusive supply chain benefits by global buyers (Karmaker *et al.*, 2021). It can, therefore, be argued that supply chain deals make the customer satisfied concerning manufacturing and service, which

are the key values for the Bangladeshi garment industry (Tanvir and Muqaddim 2013). Similarly, Asgari and Hoque (2013) have reviewed the concept of the supply chain that collaborates with buyers before taking orders and integrating with different suppliers for fabrics, sewing products. Occasionally, buyers' collaboration is a general obstruction to the business, with non-tariff and tariff obstructions and weakness in transportation services which are common for the garment industry (Roy *et al.*, 2020). However, the good news is that global buyers have reorganised the benchmark in the supply chain ((Hofmann *et al.*, 2018; Carter *et al.*, 2019).

3.2.2 Sustainable Supply Chain in the Bangladeshi Garment Industry

Present literature review provides and discusses many kinds of sustainability roadmap, but practising is a useful method to improve in sustainable business (Li *et al.*, 2018). Other authors identify that sustainability improvements are strongly affected by uncertainty (Awasthi *et al.*, 2018; Ghadge *et al.*, 2019). However, a sustainable supply chain has been developed in the last decade in Bangladesh garment industry (Chowdhury and Quaddus, 2015). They also identify that the Bangladeshi garment industry has become more recognised in the global market due to cheaper labour and international seaport (Chowdhury and Quaddus, 2015). Moreover, the Bangladesh Garment Manufacturers and Exporters Association (BGMEA) and garment trade unions play a key role in promoting an awareness of the advantages of sustainability⁹. Therefore, there is a need to understand the present position of sustainability in the supply chain (Roy *et al.*, 2020). The growth

⁹ Textile Today January 26, 2019

in the industry has been a welcome change for Bangladesh's export market, which has diversified the country's economy (Ansary and Barua, 2015). The highest-profile sector within the country is the garment industry (Kamal and Deegan, 2013).

3.2.3 Global Influence in Bangladesh Economy for Cheap Labour

The garment industry contributes hugely to the economy of Bangladesh (Amankwah-Amoah, 2015; Chowdhury and Quaddus, 2015). They also argued that the garment industry was one of the industries that could stimulate economic growth and thereby help to alleviate poverty (McKinsey, 2011; Karmaker *et al.*, 2021). After the 2008 global economic crisis, Bangladesh experienced a gradual build-up of inflationary pressures, a rapid decline of foreign exchange reserves, and a dramatic deficit in the government's resource base (Hossain, 2013; Ghadge *et al.*, 2019). Unfortunately, the Bangladesh labour force, investors and multinational buyers were forced to injunction the behaviour that anticipated the garment industry to grip (Nayak *et al.*, 2019).

One of the challenges is already known that there have been issues about human rights (Awasthi *et al.*, 2018; Carbone *et al.*, 2019). Some top-rated buyers such as Nike have hidden most of the social issues, especially child labour¹⁰. As a result of this act, most of the garment industry now offers strong screening tests for their products because they do not want their products identified as fake or substandard (Hofmann *et al.*, 2018; Carbone *et al.*, 2019). The International Trade Union Confederation (ITUC) has yet released the annual report for the year 2018 as

¹⁰ Fashion United 14 September 2018.

regards worker's rights across the world, which carried out a very important message for the garment industry (Ghadge *et al.*, 2019). Although western buyers expect improvements to the transparency, accountability and local workforce of the industry, it does raise issues about the responsibilities of powerful stakeholders when dealing with an industry in developing countries (Islam and Deegan, 2008).

3.3 Subcontract System in Bangladeshi Garment Industry

Subcontracting system is one of the integral parts of the garment industry (Pamina and Sandra, 2019; Anner, 2020). Most of the common unauthorised subcontracting system does not obey the terms, conditions and role of the buyers (Welford and Frost, 2006) while previous studies broadly identify the several western buyers that have formerly banned “unauthorised subcontracting.” Among these studies, buyers want to make sure that their 1st tier suppliers engage with authorised subcontractors (Ghadge *et al.*, 2019). As such, one of the core features of the subcontract system, suppliers will improve their good working conditions at the workplace along with a considerable supply chain (Tachizawa and Wong, 2014). On the other hand, buyers will become more beneficiaries in the supply chain (Hofmann *et al.*, 2018) where subcontracting is a primary condition for each production, but subcontracting systems are not able to produce a large number of productions (Awasthi *et al.*, 2018; Ghadge *et al.*, 2019).

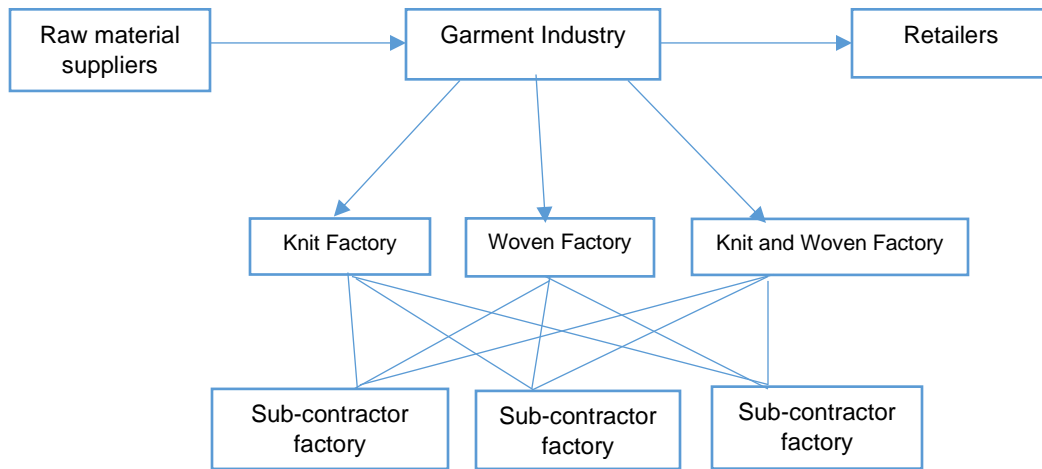


Figure 4: Bangladesh garment industry subcontracting structure

Therefore, this led to the refusal of these subcontracting practices since it was neither desirable nor economically feasible (Huq *et al.*, 2016). This study focuses on the position of sustainability in local subcontracting in Bangladesh. Figure 4 shows the Bangladesh garment industry subcontracting structure.

3.3.1 The Role of Subcontracting System

Subcontracting may refer to the method of making a mutual agreement between 1st tier suppliers and with another company that is not capable of contracting with global buyers (Subcontracting, 2013; Tachizawa and Wong, 2014). Such an arrangement for manufacturing products in the garment industry would usually state the type, quantity, quality, price and the deadline in which the subcontractor is expected to deliver (de Andrade and Bizzo, 2019). There are two types of subcontracting systems: local subcontract and international subcontract. Many authors identify that principal buyer transfer their jobs to other countries, this is

referred to as an international subcontract (Awasthi *et al.*, 2018; Hofmann *et al.*, 2018). Consequently, local subcontracting may apply to a condition where local organisations transfer their work to other organisations for production (Huq *et al.*, 2016). However, others argued that an organisation may be referred to as a principal or parent organisation that gives work to subcontractors¹¹. In most cases, these subcontracting organisations are medium or very small in size. Subcontracting is regarded as a specific way of cooperation between a company and other organisations (Taymaz and Kilicaslan, 2002).

3.3.2 Challenge of Subcontracting

Most of the literature highlighted by the subcontracting system has a significant challenge for global buyers. Besides, it is almost impossible to monitor the subcontractor working condition (Grimm *et al.*, 2016) low-quality production and implementation of fire and safety building compliance (Akbar and Ahsan, 2019). Moreover, it is very common for 1st tier suppliers to hire subcontractors to transfer workload due to capacity and capability (Tachizawa and Wong, 2014; Akbar and Ahsan, 2019). Most of the Bangladeshi garment industry is not monitored by a third-party inspection team and reducing transparency; where subcontractors recruit temporary contract workers, renting risky buildings (Welford and Frost, 2006; Hofmann *et al.*, 2018). It does not have any waste management system, while previous studies broadly identify that supplier do not take any permission

¹¹The Guardian <https://www.theguardian.com/business/2019/jan/21/low-wages-garment-workers-bangladesh-analysis> (access 22 January 2019).

from global buyers to work in subcontracting systems (Taymaz and Kilicaslan, 2002). Sometimes, global buyers agree to give a contract through subcontracts for several reasons (Kim *et al.*, 2018). These may include avoiding difficulties in production, ensuring higher quality at lower prices, faster production, capturing higher growths (Kähkönen *et al.*, 2018; Ghadge *et al.*, 2019). There are more significant market shares, reduction of costs, meeting deadlines, transfer of loads of production, passing insecurities and risks of employee's safety issues, avoiding the workers' rights that demand higher salaries and better conditions (Huq *et al.*, 2016). Those who are trying to form such include trade unions, among others. Sometimes the global buyers cannot reach subcontracting compliance checks; as a result, subcontracting becomes misleading in the supply chain (Grimm *et al.*, 2016).

3.3.3 Benefits of Subcontracting

Various business models benefit from subcontracting systems (Koberg and Longoni, 2019). Several studies highlight the benefit of subcontracting systems for the various sizes of orders, changes in designs during the last minutes and delays brought about by the poor infrastructure in Bangladesh (Ghadge *et al.*, 2019). Hence, further deep insides imposed on subcontracting are only viable if buyers assure manufacturers of a steady order flow all through the year and a lead time that is adequate to ensure them over delays that are related to infrastructure (Wilhelm *et al.*, 2016; Kähkönen *et al.*, 2018). However, these commitments are made to be virtually impossible due to realities in the subcontracting system (Huq

et al., 2016; Awasthi *et al.*, 2018). Previous studies broadly identify that safety issues and human rights arise when organisations source from countries with low enforcement of law and poor labour rights, such as Bangladesh (Salminen, 2018; Anner, 2020). Those problems make a benefit for buyers using subcontracting systems (Meinlschmidt *et al.*, 2018). This comes up with practical and new strategies from stakeholders and the government as far as subcontracting is concerned with improvement in labour conditions (Kim *et al.*, 2018; Kähkönen *et al.*, 2018).

3.4 Conclusion

With an increase in sustainable conceptual knowledge and an increase in competition resulting from globalisation, culture, information innovation, relationships and sustainable supply chain considered as just significant as materials for the product since they have a substantial role in every business entity. In other words, the growth in infrastructure has led to an extreme improvement in performance and an increase in accessibility to high-quality but scarce natural resources (Brockhaus *et al.*, 2013). It is essential for the industries to focus on financial commitments, investments and cash flow in sustainable supply chain operations. This aids in revenue generation, value creation and addition to the entire supply chain. In addition to the challenges faced in the environmental and social areas of operations, industries must experience problems in the fiscal position to achieve long-term sustainability. To increase investment activities, the

implementation of a supply chain strategy increases the system cost but is essential.

Supply-demand imbalance, market price, low productivity and natural disasters (e.g., floods, cyclones, seasonal variations) are the common uncertainties in Bangladesh (Shamsuddoha, 2015). It has struggled to meet the citizens' basic needs (e.g., food, shelter, clothing, education and health). The economy was ravaged by the war in 1971. From the beginning, prospects for economic growth in Bangladesh were considered extremely unfavourable (Sen *et al.*, 2004). The period of the 1980s showed slow-moving macroeconomic growth until 1989/90. The economy became increasingly weak with a series of undermining macroeconomic crises. Therefore, formal sector employment establishments have changed negligibly for the past decade with a notable increase in income in highly industrialised countries worldwide (Kumar *et al.*, 2020). In Indonesia, Korea, the Philippines, Sri Lanka and Bangladesh, the increased employment rate is attributed to globalisation.

Chapter 4. Adoption Theories in Garment Industry

In this thesis, the research assesses three theories, i.e., stakeholder, transaction cost economics and institutional, to recognise how factors from these theoretical underpinnings execute challenges and sustainability practices at the supply chain (Weber and Mayer, 2014; Paul and Criado, 2020). Both internally and externally, these ideas serve to define aspects of threats to sustainability (Rentizelas *et al.*, 2020).

The literature indicates that these theories intersect and can be combined to describe various phenomena of the sustainable supply chain in separate ways (Meinlschmidt *et al.*, 2018). For example, the association between institutional, transaction cost economics and stakeholder theories were also shown to be mutually complementary (Verbeke and Greidanus, 2009; Sarkis *et al.*, 2010). The theory of institutions means diverse strategic pressures and reactions to different internal and external players (Hofmann *et al.*, 2018). At the same time, transaction cost economics facilitates resources combination that stretches across originations for addressing these competitive pressures (Ciliberti *et al.*, 2020). To attain sustainable outcomes and competitive advantages, such elements entirely depend on the linkages, interdependencies and exchanges of relationships between organisations (Weber and Mayer, 2014). Hence, the correlation of these three theoretical viewpoints, with their overlapping and complementary perspectives, may offer helpful insight into the need and implementation of

multidimensional performance assessment for long-term supply chain sustainability (Govindan, 2018; Paul and Criado, 2020).

The sustainable supply chain should be mindful of the dangers that a lack of a consistent conceptual base poses for the field to develop as a legitimate management discipline (Rindfleisch and Heide, 1997). Many researchers tend to borrow macro theories that are interconnected to other academic areas traditionally, like economics and political science (Rentizelas *et al.*, 2020). It is significant to state that although these theories have been mentioned more than once in the articles, researchers utilise them in various manners, with some theoretical frameworks being more famous than others (Meinlschmidt *et al.*, 2018). The most widely referred theories include stakeholder theory, institutional theory and transaction cost economic theory (Tsang, 2006; Yadlapalli *et al.*, 2018).

The relationship between the theory and the problem studied must be established, with specific attention paid to its relevant concepts and explanatory power (Walker and Weber, 1984). Additionally, deep ontological commitments are reflected by all theoretical frameworks, which influence how research interprets and addresses a particular question or issue (Gunarathne and Lee, 2019). This means that applying a specific theoretical framework to sustainable supply chain research can highlight particular aspects, principles and relationships at others' expense.

Recognising these theoretical flaws, the research first explores the implementation of a sustainable supply chain through the institutional theory (Meinlschmidt *et al.*, 2018). As previously stated, the sustainable supply chain is now viewed as a

strategic partnering problem (Verbeke and Greidanus, 2009). A combined theory must consider adoption from the perspective of interactions with a different range of stakeholders across multiple dimensions (Hussain *et al.*, 2018), while an organisation's transaction cost economics has helped understand the emergence of sustainable supply chain practices (Ciliberti *et al.*, 2020). The researcher believes that such methods are restricted in addressing the dynamic and multidimensional sustainable supply chain aspects.

Many researchers have already used the framework's management theories and their combination for organisational studies focused on corporate social responsibility and sustainability. Institutional theory helps us better understand corporate social responsibility "diversity and dynamics," a point supported by various scholars (Govindan, 2018). Institutional theory has been implemented to explain corporate social responsibility's explicit and implicit, environmentally legitimate organisations and environmentally sustainable organisations (Gunaratne and Lee, 2019). The significant overlap between corporate social responsibility and sustainable supply chain leads us to believe that institutional theory could help understand sustainable supply chain adoption (Weber and Mayer, 2014). Furthermore, adopting an institutional theory broadens the research perspective on a specific aspect of organisational behaviour or performance (Govindan, 2018). This point is particularly applicable to a sustainable supply chain, a highly interdisciplinary study area, as evidenced by this journal's disciplinary scope.

4.1 Stakeholder Theory

Stakeholder theory has been a key intellectual device in areas such as industry and culture, business ethics and governance over the past few decades. It has developed into a popular method because it deals with many ideas that are both complementary and conflicting (Kannan, 2018). The ground breaking work on stakeholder philosophy shows that businesses have a broader spectrum of social responsibility (Hussain *et al.*, 2018). Many researchers explain that stakeholders in two ways: as those groups essential to the life and performance of the enterprise and as any individual or society impacted by the accomplishment of the company's goals or affected by it (Freeman, 1984). The difference between main and secondary players is an important part of the stakeholder's theory (Muzaffar *et al.*, 2019).

The main players involved in the supply chain are those involved in the economic trade and without which, there would be no continuous business cooperation (Govindan, 2018). The most important key players are suppliers, workers (representing the manufacturing market) and buyers (Sarkis *et al.*, 2010). External parties, on the other hand, are those who "effect" or who are not engaged in direct business dealings with the organisations or who are not interested in the main business activities of the organisations (Chien and Shih, 2007). They mention that stakeholder theory has also been used to identify 'secondary stakeholder.' Stakeholder theory suggests mobilising public opinion to or against the company in reaction to the company's results (Kannan, 2018). Management must take this

into consideration when trying to achieve organisational goals (Al-Aomar and Hussain, 2018). Secondary players include, for example, societies in which companies are committed to dealing with them positively (e.g., local residents, special interest groups)¹². In stakeholder theory, the impact of the management judgement on certain classes of actors with logical moral demands on the companies was well represented and demonstrated (Hussain *et al.*, 2018). Supply chains provide the platforms to stakeholders to have the opportunity to convince organisations, through recycling campaigns and the voluntary incorporation of sustainable development into company businesses, to take specific action (Al-Aomar and Hussain, 2018). There are various stakeholder classifications, each involving or contributing to different degrees (Kannan, 2018). Stakeholders may be categorised in a single grouping as primary or secondary stakeholders (Chien and Shih, 2007). However, with time, this classification can change. For example, the supremacy of environmental organisations and institutions is now more important than in the past, giving the classifications based on influences, urgency and prestige to assist the development of stakeholder saliency. The predominance is more relevant than in the past. With regard to these three characteristics, the continuum of players begins from one side with a certain number of owners and finishes from the other.

Stakeholder theory continues to draw business academics because it is capable of providing an interpretation of company conduct, particularly from the point of

¹²Starik and Kanashiro (2013) suggest that secondary players are those that push businesses to minimise negative impacts (externalities) while improving their positive effects. (p. 10).

view of developed countries, as opposed to the company's traditional economic model (Muzaffar *et al.*, 2019). The literature of stakeholders has grown significantly in recent years (Govindan, 2018). However, only a few reports on sustainable supply chain consider social sustainability challenges in stakeholder theory (Morali and Searcy, 2013). Studies of the impact of stakeholder demands on the growth of purchasers and suppliers in a supply chain consider particular stakeholder impacts on sustainability. In the absence of excessive interference from stakeholders, their results show that consumers will lay the groundwork for improved social efficiency rather than using third-party auditors and supplier partners (Hemphill and White III, 2018). On the other hand, third-party investigations have been shown to improve transparency and improve employee training (Gunaratne and Lee, 2019). In the same vein, stakeholders are pressuring supplier selection practises using stakeholder theory in emerging economies and their impact on their relations with the parties.

In addition to the pressure of stakeholders, several studies show the role of stakeholders in sustainable supply chain. Tsoi (2010) examines the position of Chinese regional and local stakeholders in the regulation of supply chain outsourcing practises to manage their indirect environmental and social implications. Tsoi (2010) results indicate that it is beneficial to form a corporate coalition to create a standardised human resources management structure. It tends to spread the initiative and cost of making long-standing reforms (Kannan, 2018).

4.1.1 Accountability

The global buyers have pushed for the accountability of the organisation's governance practices which are the main concerns for global garment industry that are sourcing products from developing countries like Bangladesh (Tanvir and Muqaddim, 2013; Luthra *et al.*, 2019). In the observation purpose, there are a growing number of international NGO, civil society and the Fair Labour Association (FLA) in the USA working for garment industry accountability (Hasan and Leonas, 2018). Asgari and Hoque (2013) discussed internal inspection becoming a symbolic strategy for legislation rather than improving accountability (Oka *et al.*, 2020).

However, the industry is hampered by weak regulatory controls, poor safety and working conditions and corruption (including that of government officials), resulting in a large number of fatalities in incidents such as the collapse of Rana Plaza (Economist, 2013; Carbone *et al.*, 2019). Most employees in Bangladeshi garment industry are employed on 'zero hours' contracts, meaning that they are employed on hourly basis, work according to the demand and receive no pay when demand from buyers falls (Campaign, 2012). As a result, there are significant considerations for western buyers when sourcing from the Bangladeshi garment industry (Mahmud and Kabeer, 2003). Therefore, it is necessary for the Bangladeshi garment industry to implement sustainable supply chain practices.

4.1.2 Corporate Social Responsibility

A large part of the literature review corporate social responsibility considers the entire system of stakeholders associated with the garment industry supply chain (Hong *et al.*, 2018; Sharma *et al.*, 2020). The government has focused on engaging social responsibility practices to develop in several sectors (Uyar *et al.*, 2020). Lynes and Andrachuk (2008) discussed that the government released several regulations to ensure workers' right and environmental protection, which refer to industries' commitment to contribute to both environmental and social goals. The development strategies of environmental and social responsibilities have aided in a new paradigm for the way businesses conduct their responsibilities in the society (Alamgir and Banerjee, 2019; Kunz *et al.*, 2020). These are about the industries' overall goals and strategies (Quarshie *et al.*, 2016; Tate *et al.*, 2010). Fatma and Rahman (2015) expressed that it was sensible to hand over the implementation procedure responsibility to the supply chain rather than to the department of corporate social responsibility. The definition of the corporate social responsibility has been identified and the workers in the respective departments are familiarised with the requirements that are given for the changes within the supply chain, which reinforces the process of implementation (Księżak, 2016; Oka *et al.*, 2020). Many researchers argued that the garment industry has been criticised for problems like unhealthy intense competition and rapid change in the demands to make the global business reduce the costs of production as low as possible (Quarshie *et al.*, 2016; Kabir *et al.*, 2019). From this point of view, these industries compromise on areas that severely impact the environment that may cause harm to societies in which

they operate (Kunz *et al.*, 2020). On the other hand, when companies produce the products that the company requires the fair tax for society (Kabir *et al.*, 2019).

In some circumstances, corporate social responsibility is referred to the promotion of change in an industry's level (Vaughn *et al.*, 2019; He *et al.*, 2020). It also focuses on the positive impact at the microeconomic level (Zhang *et al.*, 2019). Moreover, corporate social responsibility has to concerted itself with ethical values and cultural issues that would come in addition to a manufacturing network (Huq *et al.*, 2014; Nayak *et al.*, 2019). Many researchers discussed that responsible social and environmental procurement needs personal support at large (Hoejmosse *et al.*, 2014; de Andrade and Bizzo, 2019). In this way, the garment industry's internal capabilities such as financial, personal and technology resources are significant in the sustainability implementation (Uyar *et al.*, 2020).

Supply chain causes severe impacts on the environment especially when regulations regarding the careless, significant price pressures and natural resources are in abundance (Huq *et al.*, 2016; Kraft *et al.*, 2020). Such impacts include but are not limited to water pollution, toxic wastes and deforestation, biodiversity, hazardous emissions and the greenhouse effect, long-term damage to ecosystems as well as too much use of energy (Sisco *et al.*, 2011; Diabat *et al.*, 2014). Decision makers in the industries are overwhelmed by shareholder issues, increased awareness socially and environmental pressures towards communities, consumers and workers (de Andrade and Bizzo, 2019) to ensure there is a significant return on investment as well as long-term viability for stakeholders of the organisation (Presley *et al.*, 2007).

4.1.3 Transparency

Currently, some industries are starting to measure the development in the sustainability of their businesses with three primary goals, for instance, communication and transparency to shareholders, strategy alignment and improving their operations (Taticchi *et al.*, 2013; Mangla *et al.*, 2018a). The most renowned and widely applied sustainability transparency concept in the supply chain is proposed by Rogers and Carter (2008).

Luthra *et al.* (2019) offer a detailed analysis of the relevant issues, where the transparency, strategic and achievement of the economic, social as well as environmental goals of an organisation in its systemic coordination of business processes meant for the improvement of its long-term performance economically in terms of its supply chains. Additionally, various garment industry have started to comply with transparent business practices and transparency can have an influence by buyer's behaviour by creating a new reputation (Yawar and Seuring, 2017; Kabir *et al.*, 2018). They confirm that transparency is especially from openly sharing the details of the process of supply chains to the general public (Bai *et al.*, 2020). Some of the examples of this approach include Patagonia that gives public access to supply chain interactive maps (Chowdhury, 2017). This offers the details of the location where their items are manufactured and sourced (Majumdar *et al.*, 2020). The rationale for this transparency has become stronger enough (Luthra *et al.*, 2019). There includes assisting the efforts for sustainability that are being employed by organisations (Vaughn *et al.*, 2019). The journey to the incorporation of sustainability into the supply chain, but efficient and transparent measurement

are the rigorous policies (Bae *et al.*, 2018). These fundamentals are not only for effective communication and performance to stakeholders and the market but also got tracks for improvements (Taticchi *et al.*, 2013; Jakhar *et al.*, 2020).

According to Fraser *et al.* (2020) the knowledge, awareness and development of an organisation's sustainability and ethical practices of the business must depend on the revelation of details. Previous literature provides a piece of information on general functions of transparency, which always meet with reactions that are positive expressions for large organisations (Wilhelm *et al.*, 2016; Bai *et al.*, 2020). Moreover, the detailed information would be of high value and it is available to the general public. However, the revelation of this information can be dangerous to the reputation of the brand in a case where an issue arises, especially issues of non-compliance (Mol, 2015). For example, it has been the most recent exposure in media that shows crucial retailers, including ASOS, M&S and Zara, using children in providing labour in their supply chains (Vaughn *et al.*, 2019). This can damage the reputation of brands slowly, leading to many years of recovery (Arnold and Hartman, 2006). For example, in the early 2000s, Nike and Gap were on the spot for the use of child labour in their sweatshop conditions.

4.2 Transaction Cost Economics (TCE) Theory

Transaction cost economics has been utilised to throw light on a wide range of organisational phenomena, such as horizontal diversification, strategic alliances, multinational enterprise, public-private partnerships and supply chain relationships (Walker and Weber, 1984; Rindfleisch and Heide, 1997; Cuypers *et al.*, 2021).

Transaction cost economics (TCE) has also grown to include a growing number of factors predicting governance choice, along with the performance outcome of this option (Ciliberti *et al.*, 2020). The theory's influence and progress can be seen in this expansion (Ghoshal and Moran, 1996).

The primary focus of early empirical transaction cost economics research on asset specificity, with various studies finding systematic evidence that asset specificity's higher levels are correlated with more hierarchical governance (Walker and Weber, 1984; Weber and Mayer, 2014). The majority of these studies concentrated on the vertical integration decision, where asset specificity may be especially relevant given how supply chain disruptions may harm a company (Ghoshal and Moran, 1996; Huq *et al.*, 2014). Other transaction characteristics play a more significant role in studies of other governance decisions, such as horizontal expansion (Cuypers *et al.*, 2021).

Theoretical support for sustainable supply chain cooperation is offered by the transaction cost theory (Richman and Macher 2008; Saberi *et al.*, 2019). Transaction cost economics applies to the costs of seeking a suitable exchange partner, negotiating and drafting contracts, resolving disputes and revising current agreements as circumstances change (Tsang, 2006; Ciliberti *et al.*, 2020). The way transactions are organised defines transaction costs (Tsang, 2006). Several prominent scholars have argued that the existence of transaction costs under the assumption of bounded rationality in humans results from the intractable nature of decision problems and the scarcity of resources (Verbeke and Greidanus, 2009; Saberi *et al.*, 2019). The researcher noted that in the business world, bounded

rationality limits a supply chain organisation's ability to choose eligible suppliers and summary contracts that define all possible future contingencies and conflicts (Ghoshal and Moran, 1996).

Within a supply chain partnership, if a buyer believes a supplier is trustworthy and hence less likely to take any action against the buyer, the buyer will get rid of the costs of tracking the supplier's commitments and detecting the supplier's opportunistic behaviours (Walker and Weber 1984; Tsang, 2006). As a result, a buyer will benefit from lower transaction costs when negotiating with a supplier (Verbeke and Greidanus, 2009). Advantages such as transaction cost advantage have been referred to in this study (Weber and Mayer, 2014). When a buyer wants to reduce transaction costs while still improving value through a partnership, it is essential to look at transaction costs as a relevant consequence of performance and collaboration (Verbeke and Greidanus, 2009; Richman and Macher, 2008; Greidanus, 2009). To researcher knowledge, no empirical research has been performed on the effects of a buyer's performance on transaction cost-benefit (Yadlapalli *et al.*, 2018).

A supplier's efforts to boost a buyer's performance, on the other hand, provide the buyer with a transaction cost advantage (Rindfleisch and Heide, 1997; Cuypers *et al.*, 2021). They explained this by suggesting that if a supplier has led to a reduction in order cycle time or an increase in billing accuracy, the buying firm will avoid spending time and money reviewing and tracking the supplier and looking for a qualified supplier (Richman and Macher, 2008; Yadlapalli *et al.*, 2018). Improvements in a buyer's performance provide valuable clues that can help the

buyer develop confidence in the supplier, coordinate supply chain processes constantly and ultimately contribute to long-term relationships (Saber *et al.*, 2019).

4.3 Institutional Theory

Researchers offer a brief overview of institutional theory and its importance to the sustainable supply chain literature and its application to theory creation before applying institutional theory to the sustainable supply chain (Glover *et al.*, 2014). The institutional theory explains how organisations (such as governments, public associations and the media) utilise pressure to influence organisational behaviour and decision-making and how this pressure slowly leads to the creation of institutional laws (Saeed *et al.*, 2018; Sayed *et al.*, 2017). Organisations achieve legitimacy and sustainability through adhering to essential institutional rules derived from coercive, mimetic and normative isomorphic drivers (Govindan, 2018). Coercive isomorphism describes how an organisation responds to pressure from those with authority (such as the government and regulators) and those with whom it is associated (Hofmann *et al.*, 2018). In the ambiguous business environment, mimetic isomorphism occurs when organisations follow other profitable and legitimate organisations to eliminate cognitive unpredictability (Govindan, 2018). Professionalism and mutual organisational standards are linked to normative isomorphism. Some scholars suggest that, from this perspective, sustainability efforts will help to ensure an organisation's credibility and social acceptance to a greater extent (Glover *et al.*, 2014). However, it is well known that environmental initiatives must be applied beyond the borders of companies and

implemented across the supply chain, either on the basis of enforcement or constructive strategies (Dubey *et al.*, 2019). The organisation is not only more likely to be compliant with laws, regulations and cultural expectations but also to respond to potential environmental and social misconduct, for example, marches, promotions, fines and sanctions (Hofmann *et al.*, 2018; Rentizelas *et al.*, 2020). In GAP's, buyers were strongly criticised for having discovered its upstream manufacturers in Bangladesh used child labour (Joardar and Sarkis, 2021). The best tools and approaches must be used for formulating and assessing the organisation's success in three fields of sustainability in the development of institutional standards for sustainability issues (Font *et al.*, 2019).

Institutional theory provides a theoretical lens from which researchers may identify and examine reasons that support the continuity and validity of organisational activities like ideology, socioeconomic conditions, policy, custom and history, as well as economic incentives and recognise the value of capital (Saeed *et al.*, 2018). Researchers may explore a theoretical context. The word "legitimacy" applies to the adoption of practises that members consider appropriate (Hofmann *et al.*, 2018). Institutional philosophy has historically focused on how organisations and people can help defend their positions and their integrity by respecting rules and standards of the institutional context (such as regulatory systems, governmental agencies, courts, laws, occupations and scripts, as well as other social and cultural practises that apply conformance pressures) (Rentizelas *et al.*, 2020). According to institutional theory, external social, political and economic forces impact organisational decisions and decision-making by seeking to follow legal practises

or to legitimise the actions of corporations for the benefit of other stakeholders (Glover *et al.*, 2014).

The institutional perspective allows for a more in-depth analysis of the role of conformity, regulatory and social pressures in driving organisational behaviour (Gunarathne and Lee, 2019). The study discusses the roles of multiple supply chain actors and their approaches to sustainability and whether or not this is strategic. The researcher does this to see what stakeholders are doing to boost energy quality and what ambitions they have to do more. The study also looks at the main roadblocks to the implementation of the Bangladesh garment industry sustainable strategies (Rentizelas *et al.*, 2020).

As a consequence, institutional theory can be used to describe the spread of a sustainable supply chain within organisations (Sayed *et al.*, 2017). So, the institutional theory is based on ideas that have been around for a long time (Gunarathne and Lee, 2019). According to institutionalised organisations, organisations are guided to adopt the practises and procedures established by prevailing rationalised conceptions of organisational work and institutionalised culture (Joardar and Sarkis, 2021). Moreover, independent of the immediate effectiveness of the acquired methods and procedures, organisations that do so affect their credibility and survival prospects (Font *et al.*, 2019). Dubey *et al.* (2019) defined about Isomorphism as the "process of forcing one unit of a population to resemble other units that come across the same environmental pressures," is the consequence.

4.4 Conclusion

In competitive supply chain analysis, stakeholder theories and a multi-theoretical viewpoint are used to analyse a phenomenon. Stakeholder theory with social interaction theory to explore the effects of CSR interaction on consumer loyalty (Rentizelas *et al.*, 2020). The studies suggest that stakeholders can be hierarchical vertically (e.g., buyer-supplier), whereas more stakeholders are in horizons (e.g., corporate). Moreover, some relationships will respond to secondary players more benevolently. Some studies have analysed thoroughly the impact of stakeholder pressures on sustainability, but stakeholder engagement for implementation of governance systems has not been sufficiently studied. Particularly important to sustainable supply chain stakeholder theory, as organisations which are initially economically disadvantaged dedicate themselves to the responsibility of their stakeholder for 'inherent' moral values. At the same time, demand from stakeholders will push organisations to adopt such sustainable supply chain activities. The Stakeholder theory applies to the assessment of the environmental behaviour of the organisations in global supply chains and provides insight into which companies behave sustainably. The principle of stakeholders can also be used to analyse how businesses deal with both non-commercial and commercial players.

Another theory Transaction Cost Economics (TCE) makes it easier to identify effective governance structures which help improve social sustainability (Rindfleisch and Heide, 1997). They argue that transaction cost (boundary

rationality and opportunism) in human behaviour management and economic conditions (Complexity/unreliability and asset specificity) influence governance system preference. Transaction Cost Economics (TCE) promotes the assumption that efficient governance mechanisms do not essentially have the minimum output options; it does, however, minimise opportunistic costs for suppliers and promote an appropriate governance framework (i.e., monitoring and evaluating the suppliers). It also predicts that one party's manipulation increases trade costs including the other party's maladaptation, negotiation and control (Rindfleisch and Heide, 1997). In addition, the idea of stakeholders is used to supplement the understanding of the phenomenon of sustainable supply chain in the developed world. The discussion on the theory of stakeholders, particularly stakeholder properties and transparency, helps to understand the sustainability scale and recognises stakeholders that play a major role in the improvement of sustainable supply chain.

Chapter 5. Conceptual Framework Development: Sustainable Supply Chain in Garment Industry

The study has provided the researcher's own ideas, conceptual framework and models for a sustainable supply chain. An overview of previous models will be drawn before discussing the conceptual framework of the research (Jia *et al.*, 2020). Various sustainable concepts have been used to examine sustainability implementation and practice challenges in the Bangladeshi garment industry (Carter *et al.*, 2019). Okongwu *et al.* (2013) argued a conceptual framework to explain ideologies of sustainability issues. Those issues are defining sustainability and three aspects such as social, environmental and economic sustainability, which comprehend initiatives as regards the supply chain. Moreover, a significant impact on the supply chain activities that are associated with stakeholders in the society (Chai and Yeo, 2012). The implementation of sustainability practices in the garment industry would be difficult work. According to Presley *et al.* (2007) sustainable development needs an innovative supply chain system and provide structural information for managing the organisation. Early research by Meredith (1993) provides information about a sustainable supply chain framework to ensure efficient use of resources, protection and enhancing the quality of life, creation of new businesses to strengthen economies and creation of efficient infrastructure. Therefore, sustainable supply chain conceptual framework goals should be incorporated into supply chain policies and strategies in order to ensure long-term performance and effectiveness (Okongwu *et al.*, 2013).

From the viewpoint of sustainability supply chain, the conceptual structure researcher suggest has several advantages (Kazancoglu *et al.*, 2018). To begin, it enables sustainability to become a good relationship with suppliers, buyers and stakeholder. Secondly, by using this approach, sustainability can establish which organisations are critical to corporate sustainability and thus require involvement in a particular business context like as garment industry. Thirdly, it sheds light on the strategies that can be used to induce these organisations to participate. Finally, all suppliers can contribute to the value of sustainability by cooperating and arguably, that all suppliers can benefit from this cooperation if more sustainable solutions are built well. External, market-oriented suppliers gain access to new business segments due to the relationship surrounding the importance of sustainability: Suppliers must adjust to the conditions and demands of new sustainable business segments, but they can also benefit from new market opportunities and achieve first-mover advantages if they do so quickly (Ahmad *et al.*, 2017). Buyers are supported by meeting their need for a sustainable supply chain, often discovered to have user benefits (Qorri *et al.*, 2018). At the same time, the local community benefits from decreased emissions caused by a thriving business (which generates jobs and taxes) (Govindan *et al.*, 2020). Among internal stakeholders, employees benefit from the establishment of new business segments.

Additionally, prior research has shown that a sustainable supply chain can boost an organisation's health and safety practices (Carter *et al.*, 2019). Workers tend to work for an organisation committed to improvement in their workplace. Factory

owners are tasked with the responsibility of facilitating these new forms of value development through their investment decisions. They can benefit from the revenue generated by emerging sustainable segments and occasionally gain access to fresh, more stable investment opportunities as a result (Kiewiet and Vos, 2007). On the other hand, factory owners face the challenge from international buyers with various stakeholders (NGO, local community) to perform in sustainability-based value development. In this context, political and collective institutions and corporate sustainability management are tasked with the responsibility of fostering and sustaining business conditions conducive to deliberate democratic exchange amongst stakeholders (Kumar and Rahman, 2015).

5.1 Development of Conceptual Framework

Conceptual framework building methods can create a balance between inductive and deductive reasoning (Meredith, 1993). A conceptual framework of the supply chain is a process refers to a predomination of sustainability that is based on social, environmental and economic, giving them a competitive advantage in theoretical grounding (Burgess et al., 2006). The study develops a conceptual framework and collect primary data by interview, observation and suggest understanding of sustainable supply chain (Chai and Yeo, 2012). The conceptual framework in suppliers' perspectives view on sustainable supply chain. As a conceptual framework oversees the first case study, successive cases are examined in an attempt to discover whether the new pattern matches.

However, the concept associate with two key variables as follows: sustainability implementation challenge and sustainability practices. Those key variables emphasised on the combined point of view to link social, environmental and economic aspects and also created strategic value on qualitative framework and end boundaries in description of relevant factors in literature (Chai and Yeo, 2012). The main objective of this proposed framework is to benefit Bangladeshi garment industry to reduce the gap and improve the sustainable supply chain. Figure 5 shown the researcher identify three question which is broadly focus on conceptual framework.

The conceptual framework is developed based on the literature review and relevant previous work (Meredith, 1993). Conventional system has restricted point of origin and interpreted as belonging to sustainable supply chain in literature. This research study's framework is combined tested against in systematic point of view and theoretical point of view in supply chain, sustainability supply chain, social and environmental responsibility, sustainable supply chain transparency, sustainable supply chain network, government legislations and stakeholder pressures etc. Supply chain sustainability is defined as the management of social, economic and environmental impacts, as well as the encouragement of good governance systems, throughout the life cycles of goods and services (Sisco *et al.*, 2011, Mangla *et al.*, 2018a).

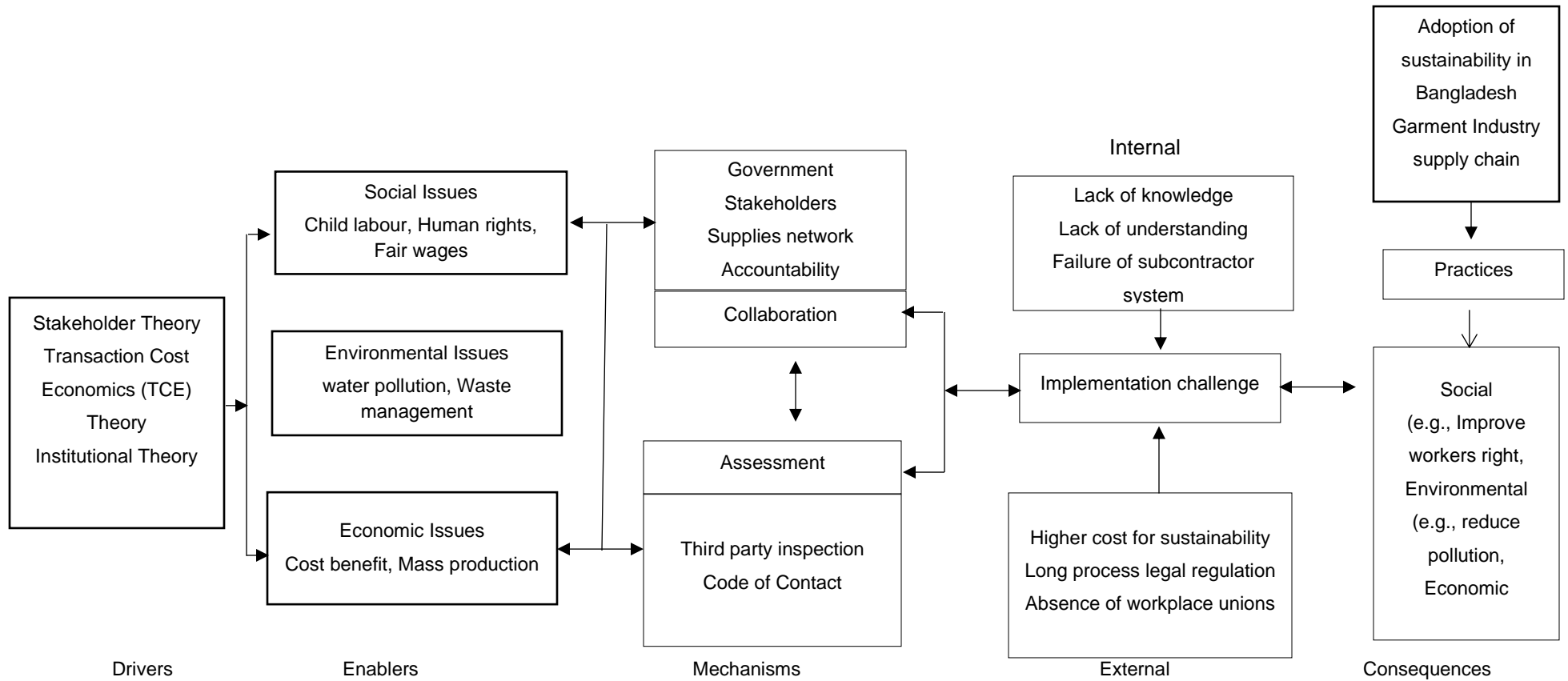


Figure 5: Summary of the research conceptual framework

The ultimate criterion is based on how organisations are “looking forward on sustainable supply chain” (Morali and Searcy, 2013, p. 647), by providing references to the future plans to incorporate sustainability in the supply chain. For instance, the scholars mentioned the inclusion of the organisations’ objectives on sustainable supply chain as a recognition of its strategic importance or a detailed description of how the organisation plans to extend the sustainability compliance clause to all of its suppliers.

The reason for engaging in the sustainable supply chain may be driven by internal or external factors, which also means that challenge and mitigation could be found throughout the process (Shrestha, 2014). According to Wu *et al.* (2014) challenges and mitigation have to be identified by the organisation so that a sustainable supply chain can be designed based on the needs of the sustainable supply chain policy.

5.2 Sustainable Supply Chain

Sustainable supply chain is itself transformational since it represents an evolution a business undergoes in its practices which is mainly aimed at addressing concerns that go beyond the economic sphere (Hassini *et al.*, 2012; Touboulic and Walker, 2015). In the supply chain context, suppliers are assessed using activities like establishing a criterion for assessment, collecting and analysis of information over the sustainability of suppliers (Touboulic and Walker, 2015; Ding *et al.*, 2018). The collaboration embraced by suppliers is very important in making joint decisions

and realising efforts for sustainable development and other operations (Majumdar *et al.*, 2020; Ibn-Mohammed *et al.*, 2020¹³).

In terms of supply chain coordination, sustainability depends on social and cultural activities (Bair, 2005; Walker *et al.*, 2015). It is also depending on communities and values that drive the decision-making process of the industry (Pagell and Wu, 2009; Guarnieri and Trojan, 2019). A sustainable supply chain must be able to operate since it concerns itself with the material flows and the information which are meant to support a firm or set its activities to achieving value addition (Brockhaus *et al.*, 2013; Al-Aomar and Hussain, 2018). Thus, it consists of traditional constructs of a sustainable supply chain (Amankwah-Amoah, 2015). It is not easy to make sustainable development; it takes a substantial effort and time to achieve it (Drexhage and Murphy, 2010). The concept of improving the conditions of human beings, though many others do not provide advice for economic development, emphasises balance among economic growth and environmental security (Simion *et al.*, 2013b).

5.3 Sustainability

When we think of the word ‘sustainability’ for a certain moment, it will flash our minds with some positive things such as long-lasting quality and environment-friendly products (Li *et al.*, 2018), a safe workplace and organic products, etc (Roy *et al.*, 2020). So sustainable growth and sustainability have different definitions depending on the discipline and sources, such as supply chain management,

¹³This study used only the COVID -19 sustainable supply chain.

operation management, shipping, forest science and chemical engineering (Mangla *et al.*, 2018a).

As in Hassini *et al.* (2012) sustainability literature highlights how to integrate with supply chain operation and effective measurement and monitoring. The Brundtland report adopted the first sustainability definition as “development that meets the needs of the present without compromising the ability of the future generations to meet their own needs” (*the World Commission on Environment and Development* 1987, p.43). The researcher emphasised three pillars of sustainability relating to social, environmental and economic (Kumar *et al.*, 2020). According to Anderson (2006) sustainability is an event that meets the present needs without compromising the future generations and able to meet their future needs. Many sustainability researchers suggest that sustainable development can maintain the protection of the environment and human beings and support current and upcoming generations (Kunz *et al.*, 2020). According to the United States Environmental Protection Agency (EPA), nearly 5.8 million tons of waste was generated in 2015 (EPA 2018) and sustainability of the year 2011, an approach for sustainability strengthens EPA as a leader and a firm in the country’s progress in realising a sustainable future. Most of the researchers agreed that the voice was not fully reflected in the sustainability code of contract (Kalkanci *et al.*, 2019). Sustainability literature has reported sustainable vision as the primary goal providing a stimulus for fast-looking and unification to the agencies (Roy *et al.*, 2020). The variety of external monitoring efforts has given an idea to the agencies that are positive and offers a basis for an approach that is capable of enlisting

cooperation and inspiring commitment from various parts of the agencies (Kumar *et al.*, 2020).

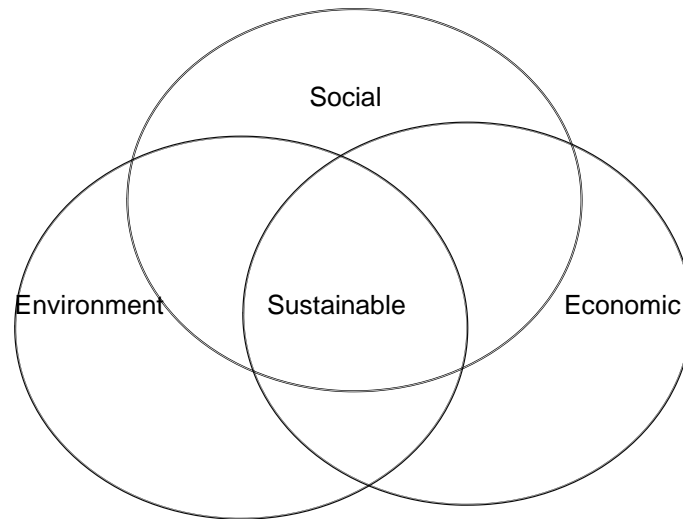


Figure 6: Carter and Rogers (2007)

There are three elements of sustainability: social aspect, environmental aspect, and economic aspect and understanding the development of each is set to explain the importance of integration. Those dimensions are represented using concentric circles representing how the society and the economy have been embedded within each other and how they depend on each other and the preservation of the natural ecosystem (Touboulic and Walker, 2015). Each word of the triple bottom line is self-dependent, though dimensions mutually support each other (Aras and Crowther, 2009; Quarshie *et al.*, 2016).

The focus of the definition is related to the aim of this study. So, the definition is suitable to explore and intends to implement sustainability practices to overall improvement directly.

Table 4: Some selected definition for sustainability

Sources	Definitions
Carter and Easton (2011)	Sustainability can be referred to make a better future for stakeholder in the world to provide shelter, cloths and foods and reducing pollution.
Agyeman and Evans (2004)	Sustainability is the need to certify and offer to meet the people's needs for good life and subsequently while living in a balanced and long- term benefit in the environmental impact.
Sikdar (2003)	It is regarded as a balance between the development of the economy, social equity and environmental factor.
Guy and Kilbert (1998)	It is a manner of the maximum use of current assets and the inter-relationship between the groups that are involved.
Pearce (1993)	It explains the scenario where future generations are not concerned with the cost of development of the society. It is also defined as a case in which bids are made to balance such costs.
Liverman et al., (1988)	Sustainability has an unlimited persistence on human beings via the maintenance of some basic needs (water, land, biota and air) as well as the existence of organizations and infrastructures which protect and distribute the element of the scheme.

Redclift, (1987) Sustainability is defined as a long-term need while ensuring a balanced in three aspects: social, environment and economic for future generations.

Elkington (1997) argued that when the industries cannot integrate each other, their effectiveness could be challenged. Most of the literature addresses sustainability implementation and needs an extensive and integrated planning approach that will help in long-term development (Wheeler, 2004). Furthermore, Fletcher and Grose (2012) highlighted the integration with environmental and economic consideration of performance and recognising stakeholders beyond and within the supply chain. In addition, the adoption of sustainable development must enable the long-term benefits of the society (Huq *et al.*, 2014). Similarly, previous researchers (Tate *et al.*, 2010; Caniato *et al.*, 2012) highlight the industries have been struggling to understand how environmental and social responsibility practices contribute to their achievement of the goals (Kumar *et al.*, 2020).

5.3.1 Social Sustainability

Previous researchers addressed sustainable development in terms of the social aspect as a holistic concept (Huq *et al.*, 2014; Anner, 2020). Different researchers classify the social sustainability aspect of various viewpoints (Missimer *et al.*, 2016). Some researchers identify the social challenge such as human rights, job satisfaction, quality of life, labour rights and equal opportunity in the garment industry (Huq *et al.*, 2016; Bastas and Liyanage, 2018; Kalkanci *et al.*, 2019). Huq

et al. (2014) summarised the social issues related to the supply chain. These focus on the workers who might face additional hours with no pay, child labour, discrimination of fundamental human rights and lack of job safety. Several studies in the literature review found there is a lack of complex aspects for what the element focused on the needs of workers as far as the social indicators are concerned (Dempsey *et al.*, 2011; Kalkanci *et al.*, 2019).

Social sustainability is defined as issues that are concerned with poverty (Yawar and Seuring, 2017) social equity (Dempsey *et al.*, 2011) and various problems when considering justice as a case study (Klassen and Vereecke, 2012). While these poverty and social equity identify overall conclusions (Marshall *et al.*, 2015) the garment industry identifies different challenges, specifically low wages, health and safety issues (Safeer *et al.*, 2019). Klassen and Vereecke (2012) provided a detailed analysis where buyers want to increase the stakeholder's accountability through the complete inspection report. Several studies in the literature review found there is a considerable debate on three monitoring drivers that are essential for social sustainability issues (Carlson and Bitsch, 2018) such as NGO, customer demand and new regulation (Yawar and Seuring, 2017). Cultural development considerations are the main factors that possess the right resources to increase well-being and reduce the rate of poverty in most developing countries (Kopnina and Blewitt, 2015; Huq *et al.*, 2016; Nayak *et al.*, 2019; Pamina and Sandra, 2019). Therefore, the concept of social sustainability deals with the ability to meet the human's emotional, physical, cultural and social needs (Huq *et al.*, 2014; Kopnina and Blewitt, 2015). Every developing country gives a provision of limited resources

at affordable prices (Kalkanci *et al.*, 2019). The critical study of Missimer *et al.* (2016) provides clear evidence of resources that are limited, for instance, lack of management and supplier commitment and reduced prices as offered by buyers. Also, cultural mismatch of industries and suppliers due to different locations are determining factors (Chanlat *et al.*, 2013). In a developing country like Bangladesh, the garment industry is facing a challenge of social issues and implementation challenges. Therefore, social issues to do with safety in Bangladesh are just a sign of the deeper structural problem, for example, the race to the bottom and the global sourcing (Kumar and Mahoney, 2014; Anner, 2020).

Table 5: Social compliance element in supplier requirement for selection

Social Practices	Focus	Examples of papers
Individual (Health and Safety)	Compliance	Huq <i>et al.</i> , (2016) ; De Andrade and Bizzo (2019)
Community (Social and environment responsively)	Capacity	Guarnieri and Trojan (2019)
Fair wages	Labour issues	Nayak <i>et al.</i> , (2019); de Andrade and Bizzo (2019); Zhou and Xu (2018).
Human rights	Compliance	Huq <i>et al.</i> , (2014) ; Ashby <i>et al.</i> , (2012); Koplin <i>et al.</i> , (2007); Guarnieri and Trojan (2019).

5.3.2 Environmental Sustainability

Garment industry has a high environmental impact due to pressure from stakeholders to balance between business and environment (Caniato *et al.*, 2012; Belal *et al.*, 2015; Zhang *et al.*, 2019). More use of chemicals in finishing products makes a significant environmental impact and results in more concerns from a

sustainability perspective (Perry *et al.*, 2015; Sharma *et al.*, 2020). Several studies in the literature review found the introduction of sophisticated technologies, which lead to an easy production process (Belal and Cooper, 2011; Shams *et al.*, 2017; Islam *et al.*, 2020). Low-cost product is among the great motivators for the industry concerning commitments to the sustainable environment (Silvestre *et al.*, 2018). Organisations' management indicates interest in reducing costs by using water and energy-saving techniques (Lynes and Andrachuk, 2008; Niinimäki *et al.*, 2020). Still, environmental development activities in the Bangladeshi garment industry are at the primary level (Suhi *et al.*, 2019). Nobody pays attention to the environmental activities and unorganised sustainable supply chain evaluation (Belal *et al.*, 2010; Carbone *et al.*, 2019). Ignorance in manufacturing hazards, pollution and lack of government enforcement are the reasons for poor levels of environmental practice (Diabat *et al.*, 2014; Guo *et al.*, 2020). Inclusion of all sizes of organisations could be the best way to attain ecological management; this would motivate and convince the customers to buy products from such organisations (Shamsuddoha, 2015; Sarkis, 2020).

Baskaran *et al.* (2012)¹⁴ said that unfair competition and pollution were considered essential criteria for the issue of the environment. However, some researchers have considered the most common reasons mentioned in the literature where the garment industry business model makes more profit for western buyers (Kalkanci *et al.*, 2019). It also creates adverse situations for the environment in developing

¹⁴ This study used only the environmental dimension of water treatment.

countries. Some of them include increased resource consumption and increased pollution (Fletcher and Grose, 2012). Sustainability involves finding an innovative way of minimising the impact of industries on the environment using modern technologies (Taghikhah *et al.*, 2019). Consequently, the waste dumping from garment factories is more expensive rather than other waste management (Shamsuddoha, 2015; Zand *et al.*, 2019). The international community is interested in eco-friendly and sustainable business in the process of production (Wall-Tweedie and Nguyen, 2018). Literature also mentioned the economic footprint weighted indicators, which are most determining for the impact evaluation of the environment (Simion *et al.*, 2013). The direct relationship between the environmental performance and adoption of sustainability practices is not understood clearly and if there is any possibility of leveraging the sustainability of the environment to maintain a competitive upper hand in the marketplace (Caniato *et al.*, 2012; Sartori *et al.*, 2017). From the literature review, sustainability of the situation is not just a buzzword but rather an integral part of every business that is focused on sustaining itself in the current world of business and the future years (Wall-Tweedie and Nguyen, 2018; Kalkanci *et al.*, 2019).

This is also true that is gradually tending to sustainability, such use of eco-friendly product tags follows a holistic perspective that involves the production chain, all the way from the fabric production to their end products (Fransson and Molander, 2013; Niinimäki *et al.*, 2020). For example, an organisation with a critical intermediate input that uses a lot of water cannot reject the fact that it poses implications on the environment since it will be revealed in the analysis of the

production chain (Foran *et al.*, 2005). The dominant position of businesses and governments is that sustainability is continuously growing in the economy that has been made to be environmentally sensitive to raise the standards of living in the global view (Sartori *et al.*, 2017; Kumar *et al.*, 2020).

Table 6: Environmental compliance element in supplier requirement for selection

Environment aspects	Focus	Examples of papers
Pollution	Air and water	Li et al., (2018).
Low energy consumption	Energy saving	Li et al., (2018) ; Zhou and Xu (2018).
Cleaner production	Reducing risk to human	Agan et al., (2016) ; Govindan et al., (2015).
Recycle and reuse	Recycling	Taghikhah et al., (2019).
Ecological system (eco-labelling, eco cloths)	Eco-label	Taghikhah et al., (2019); Zhou and Xu (2018).
Waste management	Landfill	Dubey, et al., (2015) ; Taghikhah et al., (2019) ; Zand et al., (2019).
Environmental management	Future change	Li et al., (2018).

Environment sustainability includes the use of organic and recycled materials, reduction of chemical substances and product wastes, reduction of energy and water consumption and a decrease of water and air pollution (Diabat *et al.*, 2014; Dubey *et al.*, 2015; Kozlowski *et al.*, 2015). A number of retailers are renowned for the production of environmentally friendly products referred to as eco-products (Caniato *et al.*, 2012; Li *et al.*, 2018). The concept of environmental emission point

of view, while looking at the environment as another variable to the account for the relationship and the existence of interdependence in the whole system (Touboullic and Walker 2015; Kalkanci *et al.*, 2019).

Fibre's recycling is a substantial issue in the garment industry supply chain (Dubey *et al.*, 2015; Dubey *et al.*, 2017). The recycling of fibres from the garment industry has a long history in the business of this industry and a role that has grown in the contemporary markets (Khurana and Ricchetti, 2016; Sarkis, 2020). The performance measures that are relative of the socio-friendly and eco-friendly of the full supply chain are the ratios that are provided by the footprint of carbon of a product (Jiang *et al.*, 2019) for instance, CO₂ /product unit, the intensity of the material of the end product, or the energy intensity of a product (Schaltegger and Burritt, 2014).

5.3.3 Economic Sustainability

Economic aspects have been threatened in the sustainable supply chain. Many organisations have been forced to use child labour to integrate a bigger set of objectives rather than focusing only on economic performance (Varsei *et al.*, 2014). Tsai *et al.* (2009) concluded that economic sustainability is not just about profitable returns but also ensuring that the activities of organisations do not result in any kind of environmental or social degradation. It is separating the maximisation of economic benefits from their social responsibility (Oelze, 2017).

Table 7: Economic compliance element in supplier requirement for selection

Economic Practices	Focus	Examples of papers
Cost reduction	Cost	Taghikhah et al., (2019);
Productivity	Capacity	Guarnieri and Trojan (2019).
Quality assurance	Quality	Zhou and Xu (2018).
Competitive pressure	Competition	Guarnieri and Trojan (2019).

Several studies in the literature review found monitoring progress towards an improved achievement of sustainability in a strategic place to comprehend (Ibn-Mohammed *et al.*, 2020). However, economic aspects are the key objectives in the business processes to improve in the future within the relevant organisations (Safeer *et al.*, 2019). The sustainable supply chain of the triple bottom line cannot be described with one or two dimensions. The integration of environmental and social scopes makes the process acceptable; at the same time, there is a need for a combination of social and workable ecological proportions (Suhi *et al.*, 2019). The supportable process would work only when all three measurements (social, environmental and economic) integrate.

The competitive advantage of organisations can be defined by economic activities to a greater extent (Varsei *et al.*, 2014). The claims for sustainability can increase the value of their brands by differentiating the offer of the brand from competitors (Khurana and Ricchetti, 2016). The leading supply chain comes with a long-term assurance to improve the upstream and downstream partners' compliance with rules of the new system of the economic aspects (Varsei *et al.*, 2014). Moreover,

social and environmental performance is known to be significant pillars of sustainability. Sustainable supply chain research deals with their relationship with the economic pillar's theory (Bair, 2005); therefore, well-set land allows industries to consider non-unifiable measures that can quickly deal with the commercial success of a company (Khurana and Ricchetti, 2016). The standard benefits analysis of payback returns on investment and come up with value calculations should be recognised, operational, additional and business service factors that influence and efficiency, customer service and productivity, promotions of an organisation also should be considered (Presley *et al.*, 2007).

5.4 Collaboration

The effects of the collaboration are not entirely limited to the dimension internally. Although, collaboration makes the form of a joint initiative to engage in an operation plan and reducing cost (Hasan and Leonas, 2018). According to Yawar and Seuring (2017) adopting a collaborative approach could build buyer and supply relations capacities. For example, ACCORD and Alliance have been collaborating for the improvement of Bangladeshi garment industry workplace safety (Oka *et al.*, 2020). Further, the research study argues that exterior cooperation makes a good relationship with other investors, such as rivals who have also been supportive of the policies for sustainability implementation (Hasan and Leonas, 2018). Literature on sustainability showed that collaborating with other established brands in the industry benefits the company in an effective way (Kumar and Goswami, 2019).

The Fair Wear Foundation is a European non-governmental organisation (NGO) dedicated to improving working conditions and enforcing legislation on member organisations (Govindan, 2018). The Fair Wear foundation's mission is to share knowledge, foster social dialogue and improve labour relations (Ibn-Mohammed *et al.*, 2020). As we all know, most garments are not produced by so-called “equal” firms but by “traditional” manufacturers. Even though organisations and labour organisations may cooperate to establish common standards (Kumar and Goswami, 2019) this agreement has been signed by major European buyers, but just a limited number of US buyers. For instance, Gap and Walmart have chosen to implement their global standards and several other agreements already exist (Oka *et al.*, 2020).

5.4.1 Government

The safety issues have remained to be a concern for suppliers (Oka *et al.*, 2020). Governments strictly monitor the legislation and under the new legislation, workers do not need permission from employees to form unions¹⁵. Furthermore, pollution, social problems and trust issues are frequently reported by government agencies (Kumar *et al.*, 2020). Scholars claim that the government's role is key in smoothly implementing sustainable supply chain monitoring (Alam and Ahammad, 2017). Adopting the new legislation to accept a 10 percent threshold for union formation (Chowdhury, 2017; Asadullah and Talukder, 2019). But the government refused

¹⁵ Syed Zain Al-Mahmood, Bangladesh Passes New Labor Law: Workers Granted More Leeway to Form Trade Unions, WALL STREET JOURNAL. (Access, 25 May 2019) <https://www.wsj.com/articles/SB10001424127887323664204578607814136238372>.

the adoption policy to implement in the in the garment industry (Kabir *et al.*, 2018; Vaughn *et al.*, 2019). Those effects are questionably to legislate adoption (Roy *et al.*, 2020). However, new legislation must be implemented and provides certain steps like penalties for labour violence, trade union protection, global corporate responsibility through mandatory adaptation building and fire safety (Kabir *et al.*, 2019; Karmaker *et al.*, 2021). There are many ways to approve legislation policy for influencing the business environment (Rahman *et al.*, 2015). Yet the literature shows the simple terms; regulation may refer to government rules that are required to be adhered to by the organisations (Alam and Ahammad, 2017). However, currently, there does not exist any law that regulates some of the garment industry (Kabir *et al.*, 2018).

According to Caleca (2014) different countries have specific governing criteria and jurisdictions in place. The area of sustainability and environmental regulation is renowned and recognised in the UN's 1992 conference to discuss the Earth Summit, with its agreement to adopt the Rio Declaration of Earth, Agenda 21 and Development. Those are required for all countries to enact laws that would be geared towards environmental development. The primary objective is to eliminate or minimise the exploitation of natural resources and to some extent, pollution of the environment (Kabir *et al.*, 2019) despite these efforts of regulating and restructuring the environment (Kraft *et al.*, 2020). Unfortunately, financial commitments are needed to come up with the capacity and provide a legal foundation for sustainable development. Even the Monterrey meeting of countries in Mexico to give their assurances to fund the implementation of Agenda 21. Their

commitments were noted to be merely symbolic. Efforts from the Rio Conventions and the Business Council for sustainable development have been recognised widely.

There have been negative environmental effects of the garment industry in Bangladesh (Alam and Ahammad, 2017). Environmental protection agencies and administrative systems are dedicated to focusing on law enforcement to control waste and environmental pollution (Kumar *et al.*, 2020). Several organisations have announced social responsibility not only to focus on the protection of the environment but also to focus on safety and health compliance (Kabir *et al.*, 2019; Rentizelas *et al.*, 2020). It is also a true classification of industrial sectors' impact on the environment¹⁶. Bangladesh department of environment has provided four categories of environmental clearance certificates (ECC) such as green, orange-A, orange-B and red¹⁷.

In some circumstances, Bangladesh's environment pollution law automatically provides green certificates to those who submit sustainability information. According to Wahl and Bull (2014) the law regulating the supply chain has been developed in the form of standards and codes of contract, which is developed by the government, NGOs and industry associations, etc. (Li *et al.*, 2018). These regulations would be adopted voluntarily to maintain ethical standards or reputation, specifically in corporate social responsibility (Huq *et al.*, 2014; Nayak *et al.*, 2019). This has resulted in the emerging area of focus of sustainability.

¹⁶ Bangladesh Environment Conservation Rules 1997.

¹⁷ Ibid.

Several organisations are strategically incorporating social and environmental initiatives in their supply chain to indicate their efforts to not only customers but also other stakeholders (Kabir *et al.*, 2019).

5.4.2 Stakeholder

Stakeholders may be any group of people or an individual that is affected by an organisation or typically those who change the organisation (Freeman, 1984; Hug *et al.*, 2016). These may include employees, shareholders, suppliers, senior management and customers as internal to the supply chain; or could be NGOs, government, media, community groups, trade associations and competitors as external to the supply chain (Wahl and Bull, 2014). According to Freeman (1984) the existence of a correlation between different groups and organisations is based on the stakeholder theory. The theory reinforces all factors and parties that are influenced by the organisation's practices.

In addition, Caleca (2014) stakeholder approach is all part of incorporation within corporate social responsibility. Their direct or indirect existence has a significant effect on the organisation's performance (Karmaker *et al.*, 2021). The connections between the rights of other stakeholders of the organisation (Bai *et al.*, 2020). In several countries, employees, managers, investors, NGOs and customers play a crucial role in influencing organisations towards the implementation of practices towards sustainability (Truong *et al.*, 2017). Based on that, organisations pay huge investment for recognition purposes, its impact on all stakeholders prior to making any business decision which may affect the organisation (de Andrade and Bizzo,

2019). Also, organisations may benefit from seeking views and suggestions from their investors and consumers. Sustainability is a vision for stakeholders to help in shaping programmes to create maximum returns for the organisation (Carbone *et al.*, 2019). Regular engagement of stakeholders at the early stage of designing proposals may help organisations to identify relevant approaches.

Recent research by Jakhar *et al.* (2020) argued that stakeholders' pressure could face additional challenges in the sustainability issues. It leads to sustainability awareness, solving the implementation challenge, barrier identification in practising and goals adoption in the supply chain (Meixell and Luoma, 2015; Nayak *et al.*, 2019; Luthra *et al.*, 2019). The potentially catastrophic impact of stakeholder awareness of poor social standards in key suppliers may result in business disruption or even failure (Kumar and Goswami, 2019).

Three main elements are evidence: the actors, the organisation and the relationship (Lozano, 2005). It is found from the observation of the first two elements, from a stakeholder view, the actions of the organisation in the society as well as who affects it significantly and how the community is being affected by the organisation (Carbone *et al.*, 2019). Considering the relationship provides evidence that there is a shift from thoughts centered on the organisations to ideas on systems (Wahl and Bull, 2014).

Table 8: Key stakeholders of sustainable supply chain

Stakeholder	Actions towards key shareholder
Buyers	Services and products of the highest quality, safety of services and products, protection of buyers and transparency of information about products and services.
Suppliers	Trading transactions that are fair with the selection of suppliers and analysing the partnership of supplier's system between suppliers and the ordering organisation.

According to Meixell and Louma (2015) stakeholders put solidity on the aim of sustainability for implementation of specific practices in the supply chain, but not all organisations will lead to such an application. However, the pressure may create awareness in organisations and their adoption of objectives to achieve these (Kumar and Goswami, 2019; Jakhar *et al.*, 2020). Furthermore, the study reviewed that the stakeholders such as buyers, workers, international observers, governments, and the society at large have the capability of influencing public views that concerns the environmental practices of an organisation (Sarkis *et al.*, 2010; Kumar and Goswami, 2019). Thus, the supply chain and organisation are subjected to impositions of stakeholders towards implementations of practices that are sustainable (Huq *et al.*, 2016).

5.4.3 Supply Chain Network

The garment industry has been massively characterised by global trade networks and global production since the mid-19th century (Wilhelm *et al.*, 2016). The general aim has been to grow and expansion capabilities of the industry's global

supply base have enabled it to grow rapidly from being captive to complex relational value chains within a few decades (Gereffi *et al.*, 2005). Most of the materials source from China, Indian and Vietnam, as well as Bangladesh to produce and the consumption takes place all over Europe and America (Majumdar *et al.*, 2020). The availability of an affordable labour force, the position of the consumer groups and the location of raw materials determine the development of the noticeable patterns globally (Van, 2011; Zhang *et al.*, 2020). Most of the Bangladeshi garment industry network would have easy access to connect with the inside and outside stakeholders of the organisation (Chowdhury, 2017). Therefore, the organisation concerned themselves with ethical values and cultural differences should also consider networks (Bastas and Liyanage, 2018) while production since extending to various countries. Employing underage labour is, in some countries, viewed as a survival tactic. However, it is ethically unacceptable in most developed countries. (Chen *et al.*, 2014).

In business, initiatives for fair trade are renowned for their focus on giving a price that is reasonable to the producer at the start of a network of suppliers (Kabir *et al.*, 2018; Alamgir and Banerjee, 2019). These initiatives, from this perspective, have already paid attention, for many years, to community development, economic development and poverty eradication by businesses through networks in the supply chain (Zhang *et al.*, 2019; Zhang *et al.*, 2020). In the beginning, fair trade started with a food product, for instance, bananas and coffee, but have now expanded into the garment industry and in other industries (Van, 2011). However,

fair trade is a new paradigm of the supply chain network that developed in the sustainable supply chain areas (Mizgier *et al.*, 2013).

Sustainable supply chain covers various aspects such as economic, legal, environmental and social standards (Suhi *et al.*, 2019). Therefore, when setting requirements for suppliers, the industry needs to consider buyers and understand the possible challenges before engaging in an outsourcing network (Taticchi *et al.*, 2013). The outsourcing network mechanisms mean that the global supply chain incorporates numbers of workers, entrepreneurs and industries that are invisible into the formal economy even if they might be subcontractors of the industries that are legally registered (Phillips, 2016; Pamina and Sandra, 2019).

Global supply chain has added up to buyers' social and environmental impacts that have expanded their base beyond their boundaries (Suhi *et al.*, 2019). Especially in Bangladesh, low labour and environmental standards have also invested in production (Khurana and Ricchetti, 2016; Asadullah and Talukdar, 2019). The framework supply chain drew attention to the role networks play in realising the co-evolution of the cross-border organisation of the industry (Gereffi *et al.*, 2005). Location-based industries are experiencing pressure from globalisation from their manufacturing economies that were also supported by the EU and the US policies of imports (Asgari and Hoque, 2013; Majumdar *et al.*, 2020).

5.5 Assessment

5.5.1 The ACCORD and the Alliance

ACCORD is involved in an independent and legally binding agreement between trade unions and buyers by focusing on factors such as fire and building safety management, safety training, workplace safety (Salminen, 2018; Oka *et al.*, 2020). Alliance is monitoring the most USA buyers and focusing on Bangladesh workplace safety (Bagchi, 2018) but not trying to establish a legal connection between suppliers' employees and buyers (Salminen, 2018). In this regard, the main difference between both standards relies on the inclusion of the subareas of fire and building safety. Both organisations work with social indicators concerning human rights and local communities, work conditions, social protection, employment relationships, as well as human development and social dialogue.

In addition to this, the inspection system of Alliance is not irreconcilable with the organisation of a trade union (Bagchi, 2018). In fact, it is evident that the Alliance tries to avoid any appearance between the buyers and suppliers' employees of controlling liability (Wallin, 2018). It stands out from other systems for inspecting between supplier factories and buyers' coordinate safety efforts in Bangladesh (Salminen, 2018).

Previous studies broadly identify that ACCORD provided an outline about the trade union roles in the Bangladeshi garment industry, which is mandatory for factory-level health and safety issues (Oka *et al.*, 2020). Moreover, the code of conduct agreement requires global buyers and suppliers to adhere to their end of the deal.

The industry trade unions signed with ACCORD to allow for enforcement which is violating the social compliance practice. It is worth mentioning that ACCORD is covered as a representative of most organisations. It is solving the implementation challenges in the supply chain. However, the current research study is aware of the trade union's enforcement of workers' rights.

5.6 Implementation

According to Morali and Searcy (2013) the contract is the primary source of encouragement to suppliers that make them more responsible. Therefore, incentives help them provide explicit messages of buyers' priorities to drive changes (Hassini *et al.*, 2012; Abu *et al.*, 2019). Implementation process is indeed an instrument of formal governance that is working in conditions of reservations to specify circumstances, roles, and structures (Carbone *et al.*, 2019; Quarshie *et al.*, 2016). Furthermore, Jira and Toffel (2013) argued that information is required to be circulated for implementation as a composition of a programme of supplier performance. Along similar lines, engagement of external shareholders, cross-functional integration and support of middle and top-level managers are very crucial for implementing requirements for sustainable development (Truong *et al.*, 2017; Akbar and Ahsan, 2019). Likewise, Pilbeam *et al.* (2012) described the way of supporting the top management as a vital facilitator for implementing the selected requirements. Several studies in the literature review found the integration will help avoid some social and environmental issues not only in activities on the

upstream but also in improving sustainable development (Seuring and Müller, 2008; Hussain *et al.*, 2018).

5.6.1 Supplier Selection for Implementation

Several studies have examined how to select the suppliers for their supply chain. The criteria of supplier selection and evaluation of current suppliers are more critical points to facilitate decision-making in the supply chain (Quarshie *et al.*, 2016). Similarly, Fallahpour *et al.* (2017) argued that the decision-making process related to several prospected things such as the supplier's size. Many researchers have been focused on supplier selection criteria (Ashby *et al.*, 2012). Dickson (2016) had shown 23 different criteria to achieving the goal for suppliers' selection. The selection criteria process was a decision-making technique. Conversely, decision-making processes could be taken into a case study and quantitative methods (Ho *et al.*, 2010). They also evaluate three group criteria: the organisation's profit, quality system and technical capability. Chang *et al.* (2011) used 10 criteria for supplier selection such as quality, delivery, cost, flexibility, etc. On the other hand, Fallahpour *et al.* (2017) mentioned that the supplier's selection is considered with several conflicts in the decision-making process and this selection is focused on harmonising the supplier's activities. The global supplier's evaluation provides knowledge on how suppliers discuss sustainability issues (Ashby *et al.*, 2012). Due to this, supplier selection and information flow drive sustainability awareness and implementation (Liu *et al.*, 2018; Xiao *et al.*, 2019).

Buyers require the worldwide marketplace to trading partners as suppliers (Fallahpour *et al.*, 2017). In this situation, buyers communicate with their first-tier suppliers and provide selected requirements for the first-tier subcontractors (e.g., 2nd tier, 3rd tier, 4th tier) to prevent ignoring workers' facilities and implement buyer's decision (Guarnieri and Trojan, 2019). Grimm *et al.* (2016) argue that providing support for fulfilment requirements to the subcontractor suppliers does not guarantee the sustainability implementation; buying reputation can easily be damaged by issues with supplies selection such as social and environmental factors. The connection by the first-tier suppliers with 2nd and 3rd tier suppliers is classified as the incidental approach of multi-tier supplier management (Tachizawa and Wong, 2014).

An empirical study by de Andrade and Bizzo (2019) emphasised the necessity to direct connection with suppliers while buying from them and considered as the low tier. Furthermore, Grimm *et al.* (2016) highlighted that suppliers were a significant factor of engagement and compliance by industries when buyers focused on requirements for sustainability and the exchange of information as far as sustainable development is concerned. However, a strategic alliance is a vital issue for buyers to supplier's selection in the supply chain (Xiao *et al.*, 2019). On the other hand, Klassen and Vereecke (2012) argued that long-time suppliers' contracts had been used to mitigate risks and provide an information system that is transparent enough while making formal relationships. A prerequisite for a successful implementation of supply chain sustainability standards is the compliance of the organisation's workers (Oelze, 2017).

5.6.2 Sustainability Implementation

Labour abuses (e.g., health and safety, human rights, etc.) are the norms in the Bangladeshi garment industry (Asadullah and Talukder, 2019; Huq and Stevenson, 2020). In an implementation, labour lies at the heart of the social sustainability, which is the most important term of adopting sustainable supply chains (Yawar and Seuring, 2017). Haq *et al.* (2014) explored the majority of the factory working conditions and workers' facilities were absent. They argue that a very small number of garment industry implement the full range of social sustainability practices, where global buyers choose to source production. According to Marshall *et al.* (2015) skilled workers are highly required for quality production; while workers face unfavourable workplaces and suffer from labour abuse, those organisations are unwilling for those concerns to be made in public passing on the information. It is difficult to mitigate the problems to meet workers' needs (Brockhaus *et al.*, 2013; Abu *et al.*, 2019). However, the few aspects of mitigation about sustainability implementation are related to social and environmental issues (Hoq *et al.*, 2016).

To implement sustainability, environmental management is also responsible for significant environmental impacts caused by their production processes (Marshall *et al.*, 2014; Guo *et al.*, 2020). The environmental impacts are evidenced that concerns the issue of waste produced mainly in the manufacturing stages (Taghikhah *et al.*, 2019). An empirical study by Dubey *et al.* (2017) outlined that waste materials were simply thrown away, which pollute land and waters around

the factory zones. Uncollected waste is dumped in open spaces and streets (Tanvir and Mahmood, 2014; Dubey *et al.*, 2017; Guo *et al.*, 2020). On the other hand, due to an increase in population, developing countries buy a significant fraction of the garment products. Overall sales could significantly rise in developing countries and will choose to purchase more products when there is a rise in their purchasing power (Ding *et al.*, 2018). Therefore, sustainability implementation does not become efficient as far as the environment is concerned, then the footprint of the garment industry will be more significant (Marshall *et al.*, 2014).

5.6.3 Sustainability Implementation Challenge

A large part of the literature reviews on the garment industry faces the challenge of incorporating comprehensive sustainability goals, which include safety and security issues, poor governance, stakeholder pressure and environmental issues, etc. (Wilhelm *et al.*, 2016; Kunz *et al.*, 2020). Moreover, there are many fire accidents that kill thousands of workers and injure others, while some buildings also collapse (Akbar and Ahsan, 2019; Pamina and Sandra, 2019). They also argued that these issues are burning matters for global buyers as well as its worldwide customers (Abu *et al.*, 2019). They provide another significant problem which is the increasing cost of producing materials that affect most of the small organisations. This can be justified; high interest rates and inflation are the common reasons for increasing costs which further lowers the value of Bangladesh currency against the dollar (Chowdhury and Quaddus, 2015; Koberg and Longoni, 2019). The increasing fuel and energy price also enforces a higher cost (Uddin and

Rahman, 2012). Labour practices that are unacceptable also pose a challenge since the retail market is very hypercompetitive and is accompanied by loose regulations (Asadullah and Talukder, 2019). However, the daily living expenses of the local area, which have dramatically increased over the last few years, have forced workers to demand high salaries (Huq and Stevenson, 2020). Lots of organisations in the garment sector face a variety of problems with conditions of labour all through their supply chain, which might include safety and health hazards, low wages and child labour (Akbar and Ahsan, 2019; Asadullah and Talukder, 2019). To root out these problems, organisations will be required to measure their performance on sustainability across the whole supply chain, help suppliers in reducing their impacts, hold them accountable if they fail and set improvement goals (Guo *et al.*, 2020).

Mangla *et al.* (2019) argue that ecosystem services had experienced a rapid decrease as a result of the increase in social inequalities, biodiversity, lack of accessibility to quality water, anthropogenic climate change and increase in global population. All these are part of the numerous complex changes in this 21st century. There is only weak support in the system that has become more susceptible and as well pose a dangerous threat to the society at large if left unattended (Lovelock, 2006; Niinimäki *et al.*, 2020). On the other hand, the garment industry's production design analytically reduces resources to power development, making the pollutants and waste materials (Broman *et al.*, 2000; Dubey *et al.*, 2015). However, earlier research focused on global organisations which are affected by these behaviours because of the increase in competition in

the marketplace that automatically increases environmental stress from consumers and also causes an increase in the supply chain (Niinimäki *et al.*, 2020). As a result of this scenario, the question 'how it can be solved' has risen rapidly. Assembling accessories and the high use of energy lead to generating too many wastes of fabrics from the cutting of the patterns. Most of the time, these pattern cuttings are illegally burned or dumped, or even incinerated by local governments (Kunz *et al.*, 2020). These actions release compounds like dioxins into the atmosphere and polluting the air (Guo *et al.*, 2020).

The most integrative literature discussed a large amount of water consumption needed for producing garment products and also manufacturing industries rely on fossils for the production of their energy (Suhi *et al.*, 2019). As a result, it is estimated that one kilogram of fabric generated 23 kilograms of greenhouse gases (The Guardian, 2019). This is an amount that producers can reduce wastage of water if they alter their product designs and fabrics (Majumdar *et al.*, 2020). Current technology cannot recycle unwanted products such as disposed products and make them into new goods; re-utilising methods such as chemical digestion, shredding work poorly in the industry (Jiang *et al.*, 2019). Again, there are not enough markets to understand the volume of materials that would come from re-utilising garment products (Kunz *et al.*, 2020). Due to this fact, almost one-fifth of all garment products manufactured end up in the burners or landfills within the same processing year (Brockhaus *et al.*, 2013).

5.6.4 Mitigate the Implementation Challenges of Sustainable Supply Chain

Motivated by the mitigation impact and sustainability of the organisation have required some basic actions across the industry (Pagell and Wu, 2009). Although many studies suggested that some global buyers have collaborated for various garment industry issues which affect the environment and society and try to mitigate the workers current issues (Marshall *et al.*, 2014; Dubey *et al.*, 2017). For example, most of the garment industry used zero discharge of hazardous chemicals to improve the use of nontoxic (Roy *et al.*, 2020). However, the sustainable product use initiative has been established by global buyers such as social, environmental and economic responsibility (de Andrade and Bizzo, 2019).

It is suggested to handle them; industries need to look at the issue through an organisation's inside. For instance, unsustainable development drives an organisation or a society deep into the channel. These problems cause the drop of ecological and social welfare as represented by the barriers of the organisation inside that are angled (Robert, 2004). Just like the barriers of the organisation inside, there is a decrease in options to action, for instance, services and resources, demand and competition for natural resources and the ability of the environment to renew itself for the funds being depleted (Broman, 2000). As an organisation, when navigating towards the broader end of the organisation inside as well as the society, is a form of visualising how an organisation can move towards being sustainable (Marshall *et al.*, 2019).

To realise sustainability, it needs a great awareness as far as social and economic activities have an impact on the environment in which they are operating and cross functional activities that are naturally connected with organisation (Huq and Stevenson, 2020). Sustainability requires acting and thinking with a perspective of the system to understand and appreciate these interdependencies among economic, social and natural systems (Zhang *et al.*, 2019). Thus, attempting to address issues individually will result in an overflow of information since the industry's complexity is overwhelming (Majumdar *et al.*, 2020).

5.7 The Sustainable Supply Chain Practices

The monitoring system is to identify and review whether suppliers reach the required compliance practices (Kim *et al.*, 2018; Liu *et al.*, 2018; Xiao *et al.*, 2019). It is worth noting that suitable monitoring and effective activities could be a valid compliance check performed across the supply chain (Marshall *et al.*, 2015; Jira and Toffel 2013). Although it developed the business process, management components and structure practices (Cooper *et al.*, 1997; Klassen and Vereecke, 2012). An environmental, social and economic volunteer integration is a composition of activities in an intercompany business system that is focused on enhancing the effectiveness of sustainable supply chain (Ahi and Searchy, 2013; Huq *et al.*, 2014). Luthra *et al.*, (2019) stated that it is a whole approach means that each activity focuses on meeting the long-term sustainability collaboration. Donlon (1996) argued that the collaboration is maximised in the supply chain implementation, which is the extension of sustainable supply chain practices

through the comprehensive network. The proposed network can include an increase in energy price, IT integration in the system, limited availability of resources, continuous process of design, cycle time reduction, outsourcing (Bhaskaran, 2011). It makes a partnership between suppliers and buyers that focused on the improvement of living standards has led to the emphasis on sustainable operations (Kleindorfer *et al.*, 2005; Bastas and Liyanage, 2018). It is clear from recent literature that the incorporation of sustainable development into sustainable supply chain practices demands a shift in the supply chain paradigm with a focus on social security, environmental protection and economic prosperity (Yawar and Seuring, 2017; Bastas and Liyanage, 2018). Implementation of sustainability practices to promote workers' rights and focused on integrating all the components that are relevant (Foran *et al.*, 2005). However, the focus of monitoring activities makes it challenging for regulatory compliance and policy (Kim *et al.*, 2018). Previous study also found monitoring activities to have a dark side for shifting poor working practices (Heq *et al.*, 2014).

According to Sarkis (2003) outlines the four-basic end of life practices that are environmentally conscious, for instance, disposal, recycle, reuse and remanufacture alternatives. There is another practice that is not considered as not just being applied as a strategy for the end of life (Marshall *et al.*, 2019). But it is very important in the distribution and manufacture and that is a reduction. Recycling, reuse and remanufacture are the same (Suhi *et al.*, 2019). However, reuse is mainly characterized by its little impact on the material's physical structure,

while practices for remanufacturing use some parts of the components and original content while doing substitutions (Liu *et al.*, 2018).

5.7.1 Social Practice

The current research trend in the garment industry, which has dramatically increased production capacity and skilled workers in Bangladesh has experienced a noticeable transformation as far as safety at the workplace is concerned (de Andrade and Bizzo, 2019). Other researchers (Walker *et al.*, 2015; Kozlowski *et al.*, 2015; Akbar and Ahsan, 2019) argued that in terms of social factors, workers' welfare is rarely discussed in social sustainable research. However, effective social aspects like a safe workplace (Sharma *et al.*, 2020) especially fire at buildings and several building collapses in Bangladesh are key issues to improve the social sustainability (Wadud *et al.*, 2014). When western buyers consider sourcing their products from developing countries (Pagell and Wu, 2009; Pamina and Sandra, 2019), they are usually concerned with social issues in their workplace and record-keeping in the factory (Kamal and Deegan, 2013; Hong *et al.*, 2018). Buyers such as Wal-Mart have been bragging that it is low manufacturing process costs and is giving its buyers better margins of doing business (Kumar and Mahoney, 2014). More recently, Huq and Stevenson (2020) asserted that the human right agency disclosure coincides with associated concerns with the treatment of female employees, workers' health and safety and employment of child labour. In terms of social sustainability are narrowly focused on the sustainable supply chain research (Hong *et al.*, 2018; Walker *et al.*, 2015).

Therefore, it is clear that the garment industry is labour intensive and this can be confirmed from the salary rates since there are influences in several factors to decision making regarding product sourcing (Bhaskaran, 2011; Guarnieri and Trojan, 2019). This helps them to gain a competitive advantage over suppliers in countries with developing economies, including India, China and Bangladesh (Abernathy *et al.*, 2006; Guarnieri and Trojan, 2019).

The literature on sustainable supply chain suggests that human rights and work conditions are typical practices in terms of social sustainability practices like management, capability (Kumar *et al.*, 2020). Further, Huq *et al.* (2014) highlighted that the social sustainability in supply chain practices emphasise on the workers right and health and safety issues. Sustainability practices applied to the garment industry focus on social responsibility e.g., SA 8000 certification, reduce waste e.g., recycling (Okongwu *et al.*, 2013; Marshall *et al.*, 2015). Many of the researchers have identified that the buyers monitor their supplier's compliance and accountability (Klassen and Vereecke, 2012; Alkaya and Demirer, 2014). Social sustainability practices are connected with working condition, code of conduct and local regulation (Huq *et al.*, 2014). Social sustainability management prevents unethical practices and external stakeholders have to focus on unethical behaviour (Hoejmose *et al.*, 2014).

5.7.2 Environmental Practice

According to Belal *et al.* (2015) the garment industry growth mainly prioritises its survival in a highly competitive environment pollution as well as creating

manufacturing waste. It is avoiding the sustainability practices to the highest level and engaging in the minimum regulatory adherence that is needed (Oelze, 2017). ISO 14001¹⁸ is one of the most renowned metrics for environmental operations of the site, safety handling and procedures for disposal of wastes and materials that are considered hazardous (Suhi *et al.*, 2019; Islam *et al.*, 2020). In most cases, suppliers in the supply chain are the people who are concerned with operations of the site, safety handling and procedures for disposal of wastes and materials that are considered hazardous (Suhi *et al.*, 2019; Islam *et al.*, 2020). In most cases, suppliers in the supply chain are the people who are concerned with precautions about the environment and increase the supplier's awareness on environmental safety to contribute to environmental management (Bhatia *et al.*, 2020). Garment industry supply chain forces upstream suppliers to adapt, adopt the practices and technology so that they become more efficient as well as use material sources that are friendly to the environment (Marshall *et al.*, 2015; Huq and Stevenson, 2020). Besides, they force the supply chain to engage in labour practices, which are ethical (Awaysheh and Klassen, 2010; Marshall *et al.*, 2015). All these factors are intended to be reducing the emission of greenhouse gases (Zand *et al.*, 2019), which in turn will have minimal impacts on the environment. Due to increasing government pressure at the organisation are incorporating practices that are friendly to the environment in their schemas for waste reduction (Mollenkopf *et al.*, 2010; Sharma *et al.*, 2020). The waste disposal is dominated by upcoming businesses; since there is little demand for products that are recycled, there are

¹⁸ ISO14001 specifics for environmental management system.

so many challenges financially (Belal and Cooper 2011; Shams *et al.*, 2017). This has led to several illegal practices for waste disposal throughout the whole garment industry (Zhong, 2010).

Environmental corporate responsibility created in corporate image (Wall-Tweedie and Nguyen, 2018). This is related to environmental standard and legal requirements (Guo *et al.*, 2020). However, environmental sustainability is connected to emissions of gases, pollutants, solid emissions, wastes and utilisation of hazardous materials (Zhu and Sarkis, 2004; Dubey *et al.*, 2015). This is involved with the relations of stakeholders, mainly communications of the details of environmental issues that occur between a business and stakeholders which may be a community, customers, shareholders, suppliers as well as the government (Belal *et al.*, 2010). Recycling changes the physical structure of the material thoroughly (Suhi *et al.*, 2019). According to Handfield *et al.* (2005) some challenges for the reduction of impacts on the environment. They also include substitution, green design, supporting suppliers, life cycle assessment and extending the life cycle of products through the best selection of materials. The green design considers the level of manufacturing and the product level (Jira and Toffel 2013; Guo *et al.*, 2020). For instance, on the product level, it means that documents are friendly to the environment used (Wall-Tweedie and Nguyen, 2018). Furthermore, it considers the process of manufacturing the end product. Therefore, sustainable production aims to use less water, energy and many other resources (Alkaya and Demirer, 2014).

The green design leads to sustainable production and is environmentally friendly. Additionally, reuse of the product life cycle is related to the green design. Zhang *et al.* (2019) argued the products are designed in advance in an approach that is not at the end of a life cycle. These parts can be reused in another new product. Supplier's support involves helping green design and manufacturing to be able to improve in sustainable practices (Alkaya and Demirer, 2014). As mentioned ahead, life cycle assessment focuses on addressing the burden on the environment by-products, not only focusing on their compositions but also at the natural life cycle of a product as a whole (Heiskanen, 2002). Therefore, to achieve this, life cycle assessment meets the criteria in the market with new responsibilities. Suppliers are not only responsible for the damage caused to the environment in their production process but also should consider the pollution on the situation from the rest of the stages (Jiang *et al.*, 2019). All the stages of the life cycle of a product have significant influences on the process of making decisions as far as environmental practices are concerned (Wall-Tweedie and Nguyen, 2018).

5.7.3 Economic Practice

Economies sustainability exist to operate in the supply chain (Ekins and Max-Neef, 1992; Pagell and Wu, 2009). There have been attempts for the inclusion of considerations for sustainability into strategies for business and make them operational through a measurement that is structured and which reports practices (Elkington, 1998; Global Reporting Initiative, 2011). While they are of good

intentions, these aspirations have encountered criticism since they lack focus and guidance (Liverman *et al.*, 1988; Norman and MacDonald, 2004). Furthermore, they have a lot of potential for supporting hypocrisy, for instance, practices for greenwashing (Robinson, 2004; Blengini and Shields, 2010).

Generally, cost minimization is to the financial results that are related to the economic activities, such as a reduction in the costs of materials, costs of production as well as costs for regulatory compliance. The last aspect is concerned with improvements in the product and the process. It is concerned with the incorporation of matters of the environment into a company's operations (Jira and Toffel 2013). For instance, by the improvement of the quality of processes and products, developing innovations and increasing productivity in the business.

Consequently, various business entities are taking challenges of sustainability more seriously since they have started investigating their business practice and operations and those of their partners (Alkaya and Demirer, 2014). The conduct of business highly depends on the supply chain management efficiency and this has made it a crucial requirement for the successful operation of a business (Chen and paulraj, 2004; Leenders, 2006). Trends of globalisation that are coupled with pressures of the market that push for efficient costs, increased awareness of customers and strict regulations for a business conduct that is sustainable have pressured the supply chain to be able to integrate principles of sustainability into their priorities and operations (Jayaraman *et al.*, 2007; McIntyre, 2007; Carter and Rogers, 2008; Seuring and Müller, 2008).

Based on the sustainable supply chain concept in the economical aspect, economic performance is used in measuring not only the organisation's financial performance but also the non-financial performance as well (Xiao *et al.*, 2019). Economic growth happens through productivity improvement and process (Gereffi *et al.*, 2005). All the measurements are used in representing the achievements of an organisation (Liu *et al.*, 2018). Economic performance is mainly influenced by financial and non-financial practices in the supply chain between organisations and external stakeholders (Sinkovics *et al.*, 2016). Therefore, each company needs to consider these activities that are related to different stakeholders (Yadlapalli *et al.*, 2018). All the practices should be focused on generating better reputations of organisations and eventually increase their competitive advantage as well as their performance (Kim *et al.*, 2018).

5.8 Conclusion

Implementation, legislation, plan, policy and practise could help create awareness in the socio-economic, environmental and technological bottlenecks. It will also help in increasing the speed of social wellbeing, sustainable environment and growth. Sustainability practice will ensure in economic growth, mitigate gender discrimination, environmental protection, development in human capital and create opportunities for employment. According to the Bangladesh government's vision 2021, a development scenario is envisaged where all citizens will experience higher standards of living, social justice and better education. Vision 2021, as a strategy for employee improvement. It also promises an employment opportunity

for at least a single individual from every organisation. Furthermore, in the field of developing institutions, the government is putting up new institutions which will be focused on the realisation of the government's original vision in future years. For instance, it is focused on the establishment of the Sustainable and Renewable Energy Development Authority (SREDA) as one of the authorities to coordinate the national efforts as far as achieving the agenda of being energy efficient and in turn, focus on conservation and promote renewable energy in Bangladesh. There have been other institutions to meet the future and current challenges. However, the Bangladeshi garment industry has started sustainability implementation and practices but there are a lot of challenges, including accountability, government legislation etc.

Based on the literature review, it could be observed that aspects related to the organisations, regulatory and suppliers can serve as both a challenge and mitigation for the implementation and practice of a sustainable supply chain. However, the question remains on whether this same condition applies to the garment industry in Bangladesh and which set of recommendations could be developed for an efficient implementation of a sustainable supply chain, since different industries have different opinions about sustainable supply chain based on their nature of manufacturing activities, culture and country (Diabat *et al.*, 2014; Bastas and Liyanage, 2018).

Chapter 6. Research Methodology

This chapter identifies and explains the following areas in the research method, methodology applied to collect data, answer the research questions, reliability and validity. This chapter aims to demonstrate that appropriate research processes have been followed to conduct the current research. This chapter presents the research design, data collection, sampling methods, research instruments, construct measurements, data processing, data analysis and the details of how the methodology is used. The philosophical position of chosen topic of research shows the distinct paradigm of inquiries (Pearson *et al.*, 2015). Therefore, the study explains the rationales behind the development of research design, selection of research method, sample selection and data collection procedure.

6.1 Research Paradigm of Inquiry

In social science research methodologies, the paradigm is a crucial point due to real-world phenomena that depend on real experience. This research also explores the real-world situation in the Bangladeshi garment industry. The methodology for inquiry within a real worldview perspective needs to be able to draw on the extensive epistemology in ways that are critical to subjectivity and may be enhanced by intersubjectivity that is crucial (Bell *et al.*, 2018). However, it often presents a meaning that is different from this whenever it is used in science topics of study (Morgan, 2007). On the other hand, sustainable supply chain study could be achieved by several paradigms in determining the purposes of research.

Usually, it comprises of five paradigms of research, for example, positivism, critical theory, post-positivism, constructivism and participatory ((Meredith, 1993; Saunders *et al.*, 2009). In addition, paradigms inquiry can be considered of the main beliefs of the reality of nature and how it can be determined and these beliefs may be thrown into relief by three interrelated and fundamental questions (Lincoln and Guba, 1994). Paradigms embraced renowned epistemological stances such as constructivism and realism as a unique system of belief which focuses on determining the way of asking study questions and how they can be answered. Furthermore, it takes an approach that is narrower by putting its consideration on a person's view of the world about problems within the knowledge of philosophy (Morgan, 2007). Inquiry paradigm focuses on the identification of a specific approach to methodology as well as perspectives of theories and defines the way research is done (Howell, 2013).

6.2 Philosophical Perspective

To state research claims of a specific knowledge aspect, this study is based on the way knowledge can be learned and what exactly it brings to the learning table throughout the inquiry (Gill and Johnson, 2010). Earlier researchers' approaches are considered philosophical requirements to be applied to the process of research with relevance (Friesen *et al.*, 2012). Thus, theoretical frameworks have to combine with elements, methods and strategies (Creswel, 2003). The philosophical position is one of the prospective assumptions about methodological, epistemological, ontological problems that may be uncertain and blocks actual

study (Morgan, 2007). Consequently, a qualitative approach focuses on an assessment that is subjective of behaviours, opinions and attitudes (Kothari, 2004). In this type of research, the inquiry relates to the possibilities of this study, considering knowledge as the main building block of the objective reality as a subjective reality experience (Saunders *et al.*, 2015). Therefore, the study shows how knowledge is uncovered while epistemology focuses on the nature and ways of getting education (Friesen *et al.*, 2012). The aspect of the epistemology of the paradigm puts into consideration the findings of theoretical perspectives, how they are unearthed and the characters being studied are linked intrinsically through values of history that ideally affect the inquiry (Howell, 2013).

Table 9: The key aspects of research philosophy in this thesis

	Ontology	Epistemology	Axiology	Methodology
Positivism	√	√	√	√
Post-positivism	√	√	√	√
Interpretivism				
Constructivism	√	√	√	√
Pragmatism	√	√	√	√

6.3 The approach to Qualitative Research

Approaches to qualitative research focus on the exploration of the meanings that individuals put on both social and human problems (Gill and Johnson, 2010). Qualitative research involves data in forms such as descriptions, words, diagrams and pictures. The data then can be analysed through sorting and categorisation (Runeson and Host, 2009). There are several comparative or non-comparative

case studies that have been recognised in qualitative research (Pagell and Wu, 2009; Huq *et al.*, 2016). Creswell (2012) discussed five approaches such as narrative research, grounded theory, phenomenology, case study and ethnography. It is a requirement that a study undertakes as the main steps of establishing a systematic track in finding solutions to the questions of the research (Friesen *et al.*, 2012). The study should be able to create the ontological and epistemological view of the subject of research. The study question is expected to cover the knowledge of sustainable supply chain, sustainability implementation, practices and ethical aspects of organisations. This research is guided by Figure 7, proposed by Hay (2002).

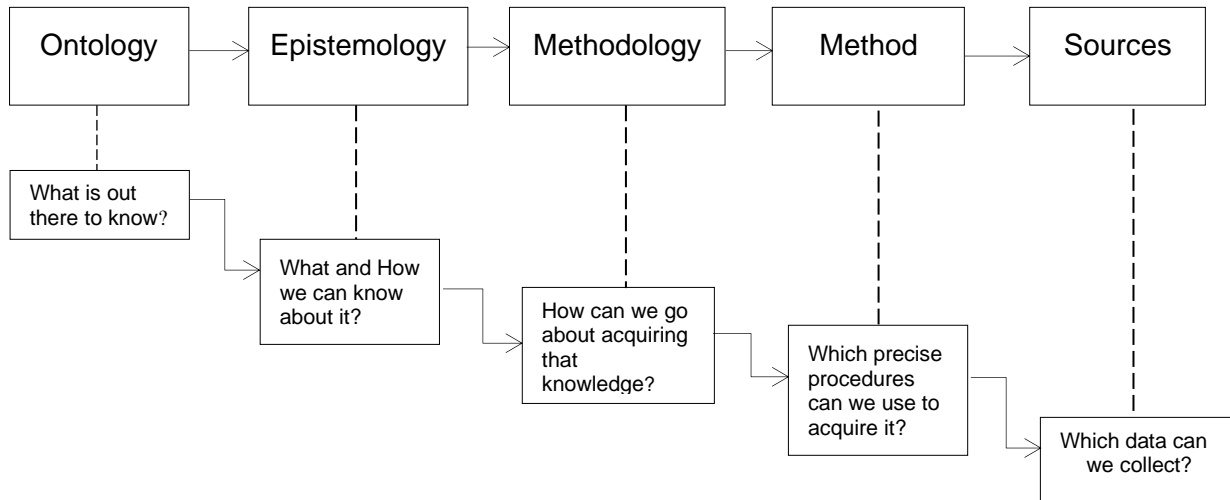


Figure 7: The approach to qualitative research (adapted from Hay, 2002)

While developing the study from the ontological and epistemological point of view, it should consider the perspective and certain level of restrictions to the procedures that will be explored in creating the research methodology. It is necessary to

question the most common paradigm of research based on fundamental assumptions rather than just putting the focus on the empirical anomalies that may enhance the research legitimacy. This can be achieved through a reinterpretation of fundamental issues of methodology in human or social sciences (Morgan, 2007).

6.3.1 Ontology

Based on the ontology domain, the supply chain has been assumed as inter-organisational types that have identities independent of the practices, relations and entities through which they are produced (Adamides *et al.*, 2012; Edwards *et al.*, 2014). An ontology through which the constructed and ambiguous nature of material empirically allows the scope for a bolder and free way to interact with the material (Borgström, 2012). Ontology can be expressed as "what is out there to know?" (Gill and Johnson, 2010). An ontology that is critical requires the employment of a multi-method or multi-subject process of research that could be for various facets of sustainable supply chain and captures how specific and conflicting objectives of organisations are accommodated at the level of the supply chain (Adamides *et al.*, 2012). Reich (1994) defines the question of central ontology as, "*How do we describe the real world and is our knowledge a reflection in the real world?*" The concept of the flat ontology and interrelatedness assumption makes meso, macro and microanalysis and categorisations constant, for instance, linear explanations that are not consistent with the practice of epistemology (Borgström, 2012).

6.3.1.1 Objectivism

Objectivism mainly concerns itself with the real world with entities that can be grouped based on their relations and properties. Surrounded by sociologists and philosophers of science that have announced the end of objectivism and embracing the extent to which people permeate the materialistic world (Hornborg, 2006). Reality is explicitly and fully structured in a shared manner by the group perceiving it, making these current results in the modelling of reality and sharing it with other people (Cronje, 2006). Indeed, objectivism can be considered as being independent of human or social issues, but constructivism explores more dependencies. The historical track is powerful depending on peculiar technology, cartesian epistemology, social embeddedness between both socio-technological power structures and the existence of individuality (Hornborg, 2006).

6.3.1.2 Constructivists

Constructivists' perspectives are the lack of acknowledgements in the experience of knowledge, things, acquaintance, participation in the presence of the happenings (Heron and Reason, 1997). In modern times, constructivists have put the focus on the stability of the structural quality of norms as well as behaviour within a given community (Edwards *et al.*, 2014). Constructive issue is a creation of a larger database that focuses on the flexibility of the quality of norms (Wiener and Puetter, 2009). It is essential to consider the fact that a group of constructivists has disagreed with the intensity they address a variety of socio-political and educational concerns (Phillips, 1995). The paradigms of participatory and

constructivist agree with each other that, in phonology. It is not possible for conceptual terms to offer complete facts (Heron and Reason, 1997). A qualitative approach concerns itself with behaviour observation, the design of ethnography and constructivist knowledge claims (Creswell, 2003). Howell (2013) argue that the subjective perspective is a social phenomenon that results from both actions and perceptions of social players. The formal factors and informal factors of the organisation play an essential role in the analysis of the quality of the constitution (Wiener and Puetter, 2009). Constructions in a society can be made legitimately based on their acceptance of educational abstractions that are geared towards studying specific issues. The ideas can be adapted by parties that have similar interests to promote them as real (Adamides et al., 2012). Constructivism characteristics offer a research paradigm on the implementation of a sustainable supply chain and its practical use in qualitative studies. Thus, constructivism can be regarded as a role model of a chosen paradigm for this study.

6.3.2 Epistemology

One of the issues with a sustainable supply chain in a complex environment is the possible need to come up with an integration of various entities into a complex system, for instance, a sub-system into another system (Breite and Koskinen, 2014). Epistemology concerns itself with knowledge, particularly about the world empirically (Edwards *et al.*, 2014). Epistemology is about what and how we can know about it (Gill and Johnson, 2010). This fact makes points of epistemology in different sophistication degrees that present essential social and educational

concerns that have a percentage of credibility and is free from the fate arising from these epistemologies (Phillips, 1995). Autopoietic, a new approach, suggests that evolution from outdated cognitivist epistemology into the theory of studying as a matter of creation and this sheds new light on the essence of knowledge creation as an aspect of the sustainable supply chain (Breite and Koskinen, 2014). Although some constructivists possess enemies as far as epistemology is concerned and they are constantly anxious to defeat, most of them have political and social concerns that are crucially acting as a motivation for their work (Phillips, 1995).

6.3.2.1 Positivism

The perspective of positivism, consequently, has played a crucial role in the research on the sustainability supply chain (Golicic and Davis, 2012). This can be attributed to the nature of this field that comprises a variety of disciplines; for instance, engineering, economics and business studies of the sustainable supply chain are difficult to quantify and have no clear signs of clarity. The reason behind the sustainable supply chain is constructed socially based on the reality context (Sekaran and Bougie, 2016). A positivist' basis has widely been accepted by logistics management and supply chain management since adopting it facilitates the production requirements for designs or configurations that are optimised and for interventions of improvement that can be commoditised easily and made applicable for the contextual garment industry (Adamides *et al.*, 2012). In respect to positivism, relationships such as elements of production, demand-price schedule are technically unobservable. It can be determined directly with no

requirement of complex new designs (Di Giacomo and Patrizi, 2010; Gill and Johnson, 2010).

6.3.2.2 Post Positivism

Post positivism generally refers to thoughts that come after positivism. For instance, the challenges put on the truth and the recognition that it is not possible to be positive about knowledge claims when researching people's actions and behaviour. The post-positivism knowledge makes a result of keen measurement and observation of the reality existing in the real world (Creswell, 2003). The difference between post-positivism and positivism paradigms is that the latter perceives the world in a more critical and less naive way. Post-positivism shows a rather deterministic theory that probably results in determinist outcomes or effects (Breite and Koskinen, 2014). Research shows that combined methods may effectively interpret the findings of a study with an approach that is quantitative for knowledge claims. Post-positivism, post and pre-test measures are experimental for investigation about attitudes (Creswell, 2003). The study was not able to justify the possibility of the hypothesis being false or true. It has laid focus on understanding the meaning of facts about the topic of sustainability implementation and practices.

6.4 Methodology

A research methodology is a process used to systematically answer research questions (Kothari, 2004; Edwards *et al.*, 2014). However, it provides tools to

examine some basic aspects of the research objectively. If sustainable supply chains were well developed in research and conceptual methodological terms, it would be reasonable to expect a "clear line of sight" from definitions to research methods and theories (Burgess *et al.*, 2006). Indeed, the methodology is the link with the logic, perspective and restrictions of research methods. However, this term is often used interchangeably and confused with the research methods themselves (Grix, 2002). The methodology helps the researchers to evaluate the research results and enables them to take rational decisions (Kothari, 2004). Howell (2013) indicates that methodology affects a method and it has considerable influence on what knowledge is and the consequent outcomes of the investigation.

Qualitative research relates to a qualitative social phenomenon, which involves quality. It relates to understanding the meaning of the reflection on the philosophical view (Braun *et al.*, 2019). Consequently, quantitative research is related to the measurement of amount, analyses of numerical data and quantification (Sekaran and Bougie, 2016). For a methodology that is appropriate to the positivism paradigm, scientific experiments on hypotheses are usually quantitative and confound conditions are manipulated (Howell, 2013). Qualitative content analysis is used to placate the inductive assumptions of most qualitative researchers (Abbasi and Nilsson, 2012). The constructivist methodological approach explains the various techniques used in capturing beliefs through historical and ethnographic analysis and allows the researcher to observe the several processes thereafter (Howell, 2015). The methodology is associated with

the logic of scientific inquiry, which involves the investigation of limitations and potentialities of a particular procedure or technique (Grix, 2002).

The most suitable methodology for this research is a qualitative method due to the interpretive, exploratory style of said research. Qualitative methodology is useful when confronted with undetermined issues as well as being valuable when understanding the lived experiences of pertinent actors (Saunders *et al.*, 2015). Furthermore, it has been noted that qualitative methods prioritise interpretivist approaches and so the researcher can gain a thorough, comprehensive insight into a complicated problem by interpreting opinions from a range of participants (Denzin and Lincoln, 2011). Similarly, the main benefit that comes with using qualitative data is that complicated problems dealing with temporal dynamics, tensions and multiple levels of analysis can be made sense of better in a detailed and advanced way (Graebner *et al.*, 2012). When it comes to researching multi-tier supply chains and their sustainability practices, one is confronted with a complicated situation because of the multiple actors who are involved, not to mention its multi-tiered and geographically dispersed nature (Quarshie *et al.*, 2016; Wilhelm *et al.*, 2016). Therefore, given its priority to interpretivist approaches, a qualitative research methodology is the most suitable in order to comprehend the complicated issues involved with this research fully.

The aim of my research approach is to enable professionals who have little or no previous experience of the various research methodologies in social science fields and who could be easily swept away thinking a methodological research tool is way above the other, they can also gain a basic understanding of quantitative and

qualitative research (Yin, 2009). However, this research study will adopt qualitative methods to inquiry about sustainability supply chain implementation and practices (Braun *et al.*, 2019).

6.5 Research Method

A research method outlines the guidelines for data collection and is used explicitly in a certain process (Bryman, 2004; Edwards *et al.*, 2014). Most researchers claim that specific methods are bound up intimately with specific epistemological and ontological assumptions (Grix, 2002). As a result, research position has been shown to influence the form and shape of the results from (Burgess *et al.*, 2006).

The diversification is narrowed concerning perspectives theoretically and reduced more when it comes to research methods (Voss *et al.*, 2002) although a lot of research focuses on mathematical modelling and statistical survey analysis (Burgess *et al.*, 2006). Indeed, the current research will data analyse by interview and observation basis. It also focuses on investigating the implementation challenge and practice in the sustainable supply chains in the garment industry. Open-ended questions are prepared in the form of a questionnaire and more complex ways, such as transcriptions of interviews that are in-depth and complete documents of policies (Bryman, 2004). The study assumed the differences between social institutions and people from the natural world (Saunders *et al.*, 2009) not being dependent on the inflexible limits. It is expected to have high validities, with practitioners being the ultimate users of the research (Voss *et al.*, 2002). In social science, qualitative researchers regard the ability to repeat as a

crucial element of their activities (Bryman, 2004). All of these will be used to get an understanding of the idea or the technique and in assessing its appropriateness or suitability of the future study (Barratt *et al.*, 2011).

6.5.1 Sampling Technique

In this case study research, the research data was based on the organisations operating in the Bangladeshi garment industry (Carter and Jennings, 2002). To be specific, these are companies that involve themselves with garment product manufacturing and accessories production. Indeed, the sampling technique is also based on several criteria. The question arises on how many cases should be selected. According to Saunders *et al.* (2009) a small number of cases make a greater opportunity for depth observation. The current research has been chosen 1st tier, 2nd tier, or subcontractor suppliers. The main objective of this study is understanding sustainability implementation and practices challenge context. Thus, the supply chain entities, such as the garment industry's internal situation, employees' facilities, stakeholder position, government legislation and suppliers, may be considered the population being targeted for the research study. Multinational, national and subcontract organisations were put into consideration while collecting data.

The broad-based questionnaire interview data was collected by interviewing higher management and a few workers and supervisors' are situated at Chittagong and Dhaka in Bangladesh. The contact details, names and addresses of these manufacturers and producers are available in the BGMEA directory. The type of

sampling that was used for the selection of the sample is called purposive sampling, mainly because the study wanted to consider the type, size and location of the organisations (Bell *et al.*, 2018).

6.5.2 Data Collection Method

Data collection techniques allow the systematic collection of information about the objects of study (objects, people, or phenomena) as well as the settings in which they occur (Barratt *et al.*, 2011). If data are collected randomly, it will be difficult for the responders to answer some research questions in a conclusive way (Wadud *et al.*, 2014). Further, the study explains data collection in two different ways, such as interview and observation (Appelbaum and Donia, 2001). Observation is defined as a technique that involves systematically selecting, inspecting and documenting the characteristics and behaviour of objects, people, or phenomena (Barratt *et al.*, 2011). Moreover, it involves the systematic observation, documentation, analysis, description and interpretation of people's behaviour (Appelbaum and Donia, 2001). Interviews are the most common method of data collection associated with case study research (Yin, 2009). However, an interview is referred to as a data-collection technique that involves verbal questioning of respondents, either as a group or individually. Interviews are not regarded as being synonymous with case study research because sometimes, case studies may involve many other data collection methods (Ellram, 1996).

The research was carried out in three phases. A literature review was carried out in the first phase to find the current knowledge and gap analysis. In the second

phase, questionnaire analysis was carried out of sustainable supply chain implementing practice challenges in the Bangladeshi garment industry. In the final phase, database generation was carried out for case study analysis. Just like other various interviews, qualitative techniques are not only concerned together with length but also the awareness and gathering of a wide range of data (Walker, 1985). The wide range of data collection through interviews is particularly important when considering case studies from a critical realist perspective, as it helps to increase understanding of causal powers (Aastrup and Halldórsson, 2008).

One of the key factors to note in data collection concerns the question of "When to stop data collection and the number of interviews." According to the general literature consent, the capacity level has to be attained. There is no understanding or new topic and the engaged new idea has begun repeating itself (Denzin and Lincoln, 2000; Bryman and Bell, 2015). However, in order to ensure complete saturation, there is no limit, awareness, or deep exploration. The researcher adopted the idea of infiltration and decided to move on with interviewing the respondents until all the inconsistencies in the data were fixed, leaving no new idea.

The primary data are the types of information or data in this research study. Questionnaires and observations were used for the primary data collection (Braun *et al.*, 2019). Internet and printed materials were used for secondary data to support the research study (Bell *et al.*, 2018). However, the researcher would have contact with a specific person who had responded to research questionnaires and follow-up telephone conversations. The second phase of the research contains a

systematic framework (Barratt *et al.*, 2011). The first page will be a cover letter; questions start from the second page and include demographic questions about the institute, personal data and the remaining pages include principal research questions. The cover letter would be briefly explained in the research and ensured privacy. It also included a short note on the meaning of "sustainability and supply chains" so that interview respondents in this research could realise the nature of the questions that follow. This segment will split into five parts. To ensure face validity, the questionnaire will examine through a pilot trial in two garment industry from one industrial zone. Based on the feedback, the amendment will incorporate. The consistency tests of each idea will accompany it individually. Therefore, the reliability of data will also be increased if multiple sources of data on the same phenomenon are used (Voss *et al.*, 2002). Figure 8 shows the forms of research objective, method and analysis which are created by the researcher's viewpoint.

In this research, non-standard interviews were conducted individually. Due to the geographical locations of the responders, the majority of whom are actively conducting top-level management in the garment industry around the export processing zone (EPZ) area, first interviews were conducted face-to-face, but follow up interviews were conducted by telephone and others were completed with the use of online technology (Yin, 2009). It was not feasible to conduct the interviews using the same method of communication on every occasion. For example, the actual interview was prefaced with a short oral introduction of the study and a small briefing to build understanding with the responders (Bryman, 2012). With the consent of the responders, recordings were made for every

interview and subsequently transcribed to form the basis of qualitative data analysis.

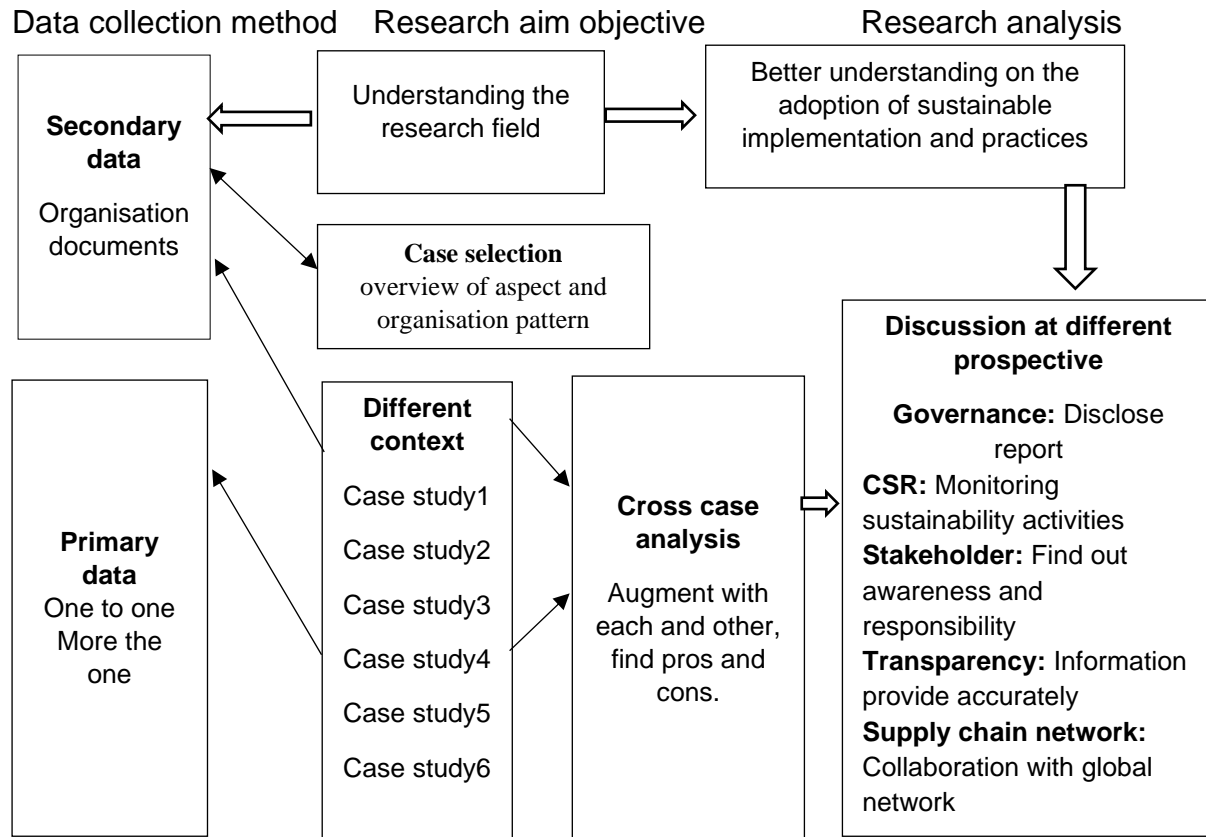


Figure 8: Research objective, method and analysis

Qualitative approaches for creating and generating profound meaning include interpretation, text and document interpretation, interviews, documentation and reproduction (Andreassen and Christensen, 2018). The tools used for collecting data include documented interviews with key informants and findings during site visits (primary data) and organisation records analysis (secondary information). Interviews are a suitable way of collecting data about complicated phenomena where answers may need further investigation or explanation (Knight *et al.*, 2002).

Interviews allow the researchers to explore in detail novel concepts, open up new facets of an issue and protect vivid, credible and personally confidential accounts (Carter and Jennings, 2002). In an analysis conducted by six case studies, organisations and 27 senior managers, Mamic (2005) used qualitative interviews to establish comprehensive explanations on day-to-day operating procedures, structures and problems in applying codes of ethics in the global garment industry.

The interview schedule helps the interviewer to examine exciting areas. Simultaneously, the subject gets more time to share their own story and actively influence the interview process. In sustainability constructionist epistemology, a tendency is made possible through questioning researchers to try to penetrate the participant's social world. As part of an interview with Larson (1992) questions were used to reference discussions and factual evidence gathering. Questions on general knowledge about the organisation. A detailed understanding of sustainability theoretical structures in supply chains was produced in the second set of questions.

Glaser and Strauss (1967) argued that the several case-study research used was based on the leakage principle. Also, to include statistical consolidation for purposes, Eisenhardt (1989) suggested 7 case studies. It should, however, be recognised that research in qualitative case studies does not rely upon the number and validity of cases and interviews of each case study, as an increasing academic opinion is criticising the use of positive parameters as part of an assessment of research in phenomenology (Dubois and Araujo, 2007).

Regarding the number of qualitative study interviews achieved, Perry (1998) recommended provided a Ph.D. thesis of 35-50 interviews, but this was accepted as clearly a rule. It may be difficult to obtain more than one interview in small or developing countries' organisations. In the case study on logistics social responsibility of Carter and Jennings (2002) the researchers, instead of settling on several interviews in advanced studies, carried out a total of 27 interviews by continued interviewing informants until each of the logistics functional areas covered was saturated. Andreassen and Christensen (2018) have accepted these considerations to restrict the number of interviews a Ph.D. thesis would otherwise anticipate. A number of 27 interviewers with managerial contacts in 6 garment industry have been conducted in Bangladesh in this study. Interviewees were chosen to include information and insights within each organisation from 4-5 senior management levels. Nevertheless, it was only conceivable to talk to management in the two-subcontract garment industry, but they did not know much about sustainability.

However, the analytical literature has not discussed experimental observation (Adler et al., 1998). Observational approaches of market and management science remain unexploited (Carter and Jennings, 2002; Gummesson, 2007). Qualitative findings are primarily critical of their potentially invalid and accurate existence (Adler *et al.*, 1998; Angrosino, 2007): observers subjectively view observations by their nature themselves. There is no data to prove the words are 'true' and not just chance effects. Adler *et al.* (1998) point out that the power of observation, in conjunction with other strategies such as interviews, is "its great rigour," thus

defining its position in improving accuracy and validity across a variety of qualifying results. The credibility of formal findings can be enhanced and an evaluation record preserved. Gummesson (2007) encouraged Ph.D. students to be "bolder in choosing the subject and approach" by bringing observatory techniques to heart and using non-verbal contact and first-hand personal phenomenon encounters. In corporate social responsibility, senior managers could well wish to present a screened or official version of the events and it is justified to triangulate analytical strategies with interview results.

6.5.2.1 Editing of the Data

To increase the correction and accuracy of the study, the process of editing data was implemented (De Waal and Quere, 2003). Poorly recorded questionnaires, unanswered questions, or questions that had incomplete answers were reviewed for consistency checking (Blewitt, 1990). Incomplete answers were allocated to the category of being answered unsatisfactorily or, in some cases, were discarded.

6.5.2.2 Data Cleaning

One of the parts of the main research area is known as data quality, which is called data cleaning. This is a huge field that includes many types of research in databases. The methods used to perform data cleaning address problems to do with data quality (Dasu and Johnson, 2003). The method of data cleaning was used to perform checks for consistency and deal with responses that were missing. According to Miyagawa et al. (2008) structures are the main components of this set of data in the form of modelled phylogenetic trees in several ways. For a

standard database of keywords, the issue of quality of data and cleaning of data has been performed well (Gummesson, 2007). Researchers also had checked the consistency of the data range. Some were accurate and some were inconsistent logically. Missing responses can be considered unknown due to confusing answers to the queries that appear in the process of cleaning the data.

6.5.2.3 Checking of the Questionnaire

After designing the questionnaire for the research, it was prudent to have it checked. The researcher had focused on whether the questionnaire was appropriate for the study. Checking the completeness of questionnaires involves problem detection as early as possible to take corrective actions before the findings are completed. However, researchers took the initiative. When researchers found any missing or incomplete answers, there were corrected in the questionnaire through the process of checking.

6.6 Data Analysis

The methodology suggests how to use data for analysis and also conduct a detailed analysis of the research. The researcher maintained to analyse data during the data collection process to guide further data collection. The researcher adopted four consecutive components of data analysis – data reduction, data display, conclusion drawing and verification to qualitative data analysis (Miles and Huberman, 1994). Data reduction is a "process of selecting, focusing, simplifying,

abstracting and transforming the data that appear in written-up filed notes or transcriptions" (Miles and Huberman, 1994).

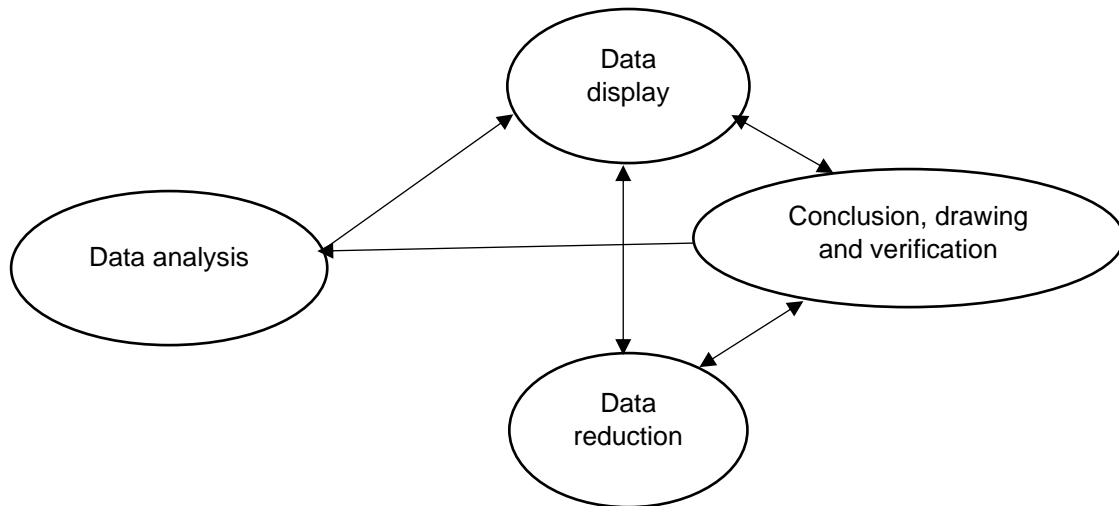
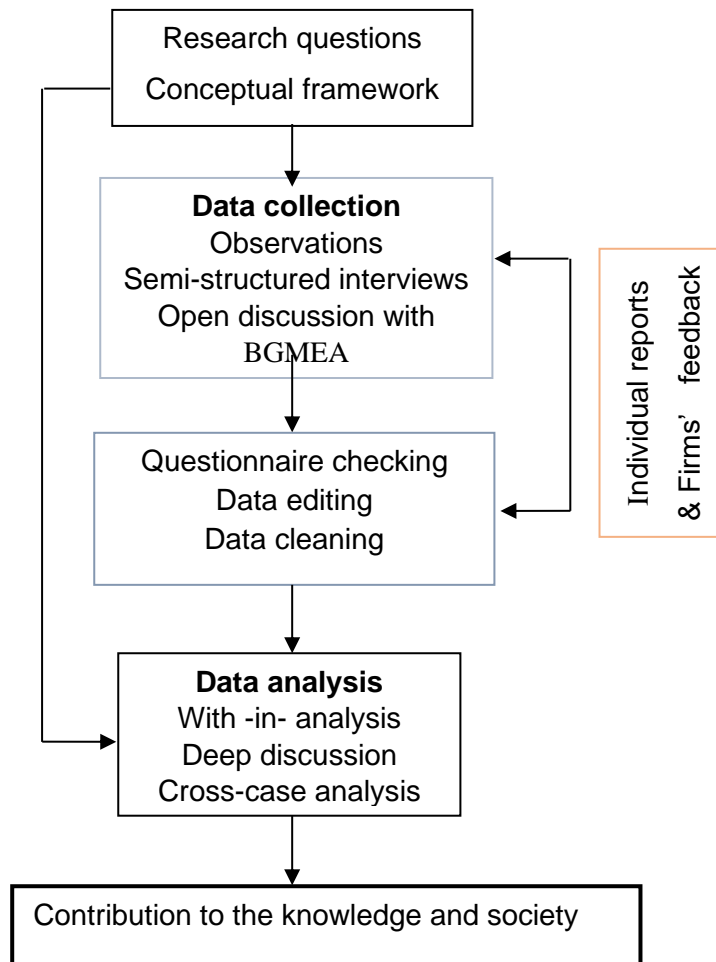


Figure 9: Data analysis components (Miles and Huberman, 1994)

Data display means "an organised, compressed assembly of information that permits conclusion drawing and action" consisting of various forms such as charts, graphs and networks (Blewitt, 1990). To draw a conclusion and verify assumptions through the displayed data, the researcher applied the iterative process of explanation building (Yin, 2009). In this approach, the initial case study is analysed to compare with the preliminary assumptions and the explanation is then refined with an analysis of subsequent cases.

According to Grix (2002) researchers should take note that learning schemes are not just because of an outlined method; rather, the result will show how the researcher goes through, analyses and collates information. Most qualitative research makes open-end questions to express the real-life experience to the point

of view (Bell *et al.*, 2018; Creswell, 2003). Figure 10 shows the data analysis process in the current research.



Finger 10: Data analysis process

6.6.1 Human Bias

Human biases occur at some phases, such as the study design, data collection, sample selection and data analysis (Kruglanski and Ajzen, 1983). It arises primarily when the interviewer involves the respondent's choice of response (Gonçalves-

Sá, 2020). The interviewer must therefore be independent to avoid bias. For this analysis, the thesis was validated with three more important significances. These three terms are the case study selection bias, interviewer preference bias and language bias.

6.6.1.1 Selection Bias

Selection bias primarily happens when a sample group is identified (Kruglanski and Ajzen, 1983). The selection bias takes place if the desired conditions are not used when select interviewers. For the sample population, the normative rules are well established and must be confident (Touboulic and Walker, 2015). However, this research was explicitly described and justified in the first segment called 'sample selection and research site' by the interviewees' choice. The researcher also knows the industry and the field of research and is therefore elected to participate in an interview, i.e., to provide more detailed images of the topic. In six cases, participants in this sample have chosen to participate in garment industry and events depending on their organisation's participation.

6.6.1.2 Interviewer Bias

Interviewer bias is linked to the data collected in the interview (Salazar, 1990). It may reduce the number of interviewer data collected from meetings and analysed without affecting the possible results (Salazar, 1990). Therefore, researcher has attempted to make remarks that could influence respondents' replies as neutral as possible and very cautious in this study. Researcher often clarified the issue

carefully at the beginning of the interviews to feel involved in it. That allowed them a clearer view of the matter to answer the questions in greater detail (Griffin and Wilson, 2010).

6.6.1.3 Language Bias

During the interview, researcher gave oral English to Bengali translations to help participants understand the subject's questions. However, it was impossible, in some circumstances, to clarify the technical conditions of the queries (Egger *et al.*, 1997). Researcher considered the understanding of the participants. In several other examples, researcher described the technical terms in-depth without using prejudiced words and thus helped participants grasp the meaning (Harzing *et al.*, 2009). The next segment addresses the different ethical steps that have been taken to perform this study.

6.7 Case Study Approach

There were six case study organisations of different sizes, such as multinational, local and subcontracting companies and each case study has a certain number of respondents and most of the respondents have been selected from senior management. The validation purpose researcher had chosen the senior management and made the decision and execution where supervisors and workers have no direct engagement due to lack of their knowledge. However, a valid improvement can be made to expand the responders' viewpoint, attitude, response, coordination and actions.

The strategy of using case study research refers to an empirical inquiry that is used in investigating a phenomenon that is contemporary within the real-world context (Sekaran and Bougie, 2016). The definition 'case' is a current social phenomenon and investigators have to identify whether meaningful role play in real life (Pearson *et al.*, 2015). The borders among the context and phenomenon are not defined evidently and with which there are various foundations of active information (Robson, 2002; Yin, 2009). It naturally occurs despite not prioritising data quantification and controlling variables (Thomas, 2011). The case study uses several methods and sources of data with a considerable number of features that focus on processes and relationships (Saunders *et al.*, 2012).

Indeed, the case study approach has to consider exploratory analysis, which is often used in order to seek clarification of a given idea (Sekaran and Bougie, 2016). The case study provides the idea on the basis of interviews and observation. The interview findings support the idea and thus resolve the research objective in empirically validating links between the observation-based views. Moreover, the logic of multiple case studies provides more validation for the findings (Pearson *et al.*, 2015). The case study interviews reinforce the existence of implementation and practices challenge, which is verifying collaborations with corresponding sustainable supply chain strategies (Yin, 2009) adding further strength to the implications for developing capabilities from case study interviews, which support the feasibility of explaining observation and interview-based view capabilities from the discussion analysis (Sekaran and Bougie, 2016).

Promote diversified case settings can be considering the time and resource constraints. Secondary data was collected to develop several scenarios that can supplement effectively in the in-depth cases based on primary data. Also, multiple methods of data collection are used, for instance, verbal data (Focus groups/interviews), data from observation (visits to the sites) as well as written documents that are used as primary data for examination of case study (Yin, 2014). The use of various methods of collecting data is essential due to the inductive nature of case study. The theory generation depends on the first approach of inductive use of data (Yin, 2013). This research is active in developing typologies used to classify the critical strategies and forms for a sustainable supply chain.

Specific cases mainly emphasise investigations that are in-depth with the primary purpose of giving detailed descriptions of the concept being studied (Mastos *et al.*, 2021). At the same time, a variety of cases support themselves with the principle of theoretical replication and comparisons of cross-cases (Darke *et al.*, 1998). Indeed, key issues of the case study have to face validity that is essential in the judgment of the quality and also a set of logical statements which appear from the study. Yin (2013) argues that there are four tests of validity, for instance, methodological, axiological, epistemology and ontology, that can be used in case study research. It can be noted from the above discussion that considerations of philosophies influence various choices of methodologies. It is underlying and focused on setting the context of the research.

It is worth noting that the case study of various sustainable supply chain topics involves complex technical, human and organisational systems as well as their

lively interrelationships that wish the research has been done from different angles. The research uses verbal data to have a reflection on personal experiences and views as well as having on-site visits to carry out an observation of the real operations in practice (Babbie, 2012). For the same reason, using data collection will potentially limit the study that could be compared in the induction. Hence, this will restrict the theory that is developed and the resulting full applications of the same. However, Figure 11 showed that the case study design was hierarchy flow in cast study development to cross-case analysis.

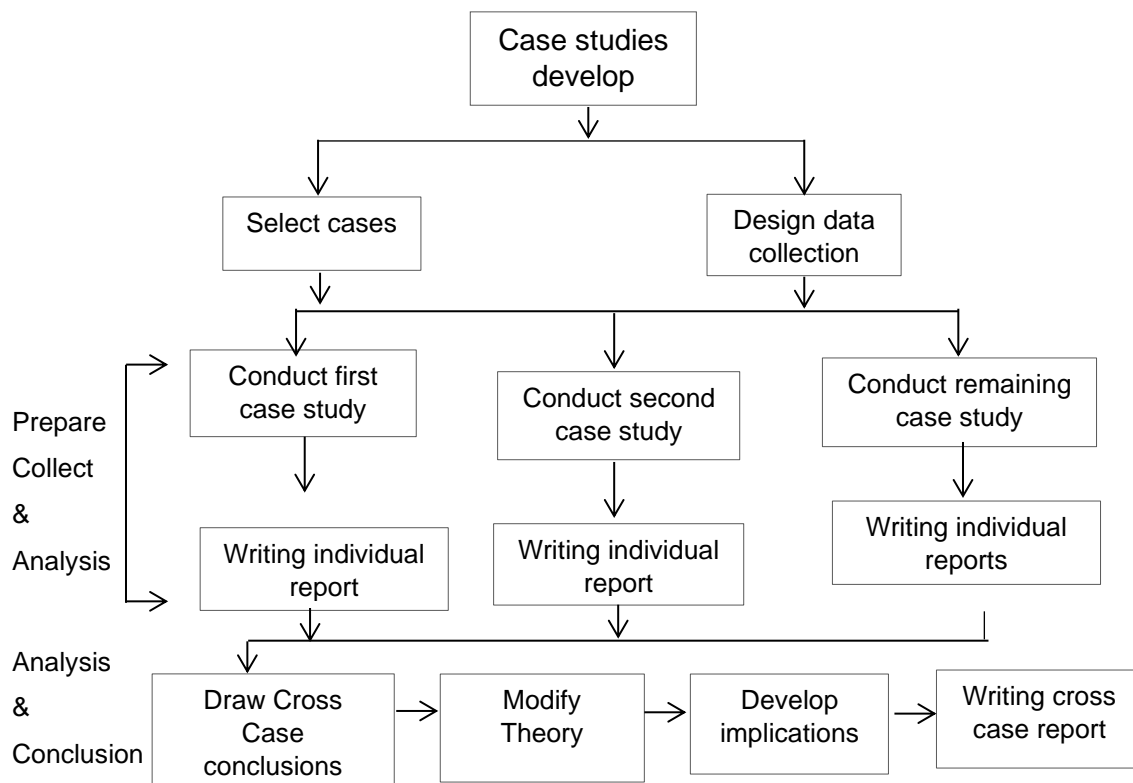


Figure 11: Case study design (Yin, 1983)

The case study approach is used in addressing the first questions of research, which aims to understand the main elements relevant to the development of

implementation and practices of supply chains. It is classified concerning these critical elements. The method of case study is crucial when researchers are focused on exploring a phenomenon or situation in depth (Clark and Creswell, 2007). The technique allows researchers to have a meaningful and holistic characteristic of events in real life. It is especially suitable for exploring "why" and "how" questions in research (Yin, 2009; Pearson *et al.*, 2015).

The current research case study is concerned with descriptive methods. According to Yin (2014) the conditions of dependability, confirmability, reliability and trustworthiness can be applicable in descriptive case analysis. The descriptive analysis focuses on four main assessments that are well established, such as reliability, external validity, internal validity and construct validity (Pearson *et al.*, 2015). However, validity and reliability are widely used in establishing the quality of every empirical social research.

According to Bryman and Bell (2015) every study could not be possible to want all the four norms for the quality of validity and the fact that methods of research differ in the aspect. Most of them are strong in one validity dimension, while they are weaker in others. For instance, qualitative research consisting of case studies is found to be strong in the internal and weaker in the exterior. The scholars suggest the use of various perspectives and methods in one study to reduce the limitations of validity. A similar suggestion is in investigating a topic of study in the discipline of the supply chain (Mentzer and Flint, 1997; Grant *et al.*, 2010).

Table 10: Case study tactics for four design tests

Criteria	Case Study	Application	Application in this study
Construct validity	Multiple sources of evidence	Data collection	Management level interview, Company annual report.
	Establish chain of evidence	Data collection	
	Have key information review draft case study report	Report writing	
Internal validity	Pattern matching	Data analysis	Cross case analysis
	Explanation building	Data analysis	
	Address rival explanations	Data analysis	
	Logic models	Data analysis	
External validity	Theory in single-case studies	Research design	Choice of multiple case study over single case, comparison to literature
	Replication in logic multiple-case studies	Research design	
Reliability	Case study protocol	Data collection	Tested interview protocol
	Develop case study database	Data collection	

Source: Adapted from Saunders *et al.*, (2012) and Yin (2014)

The Table 10 tactics of instance study for the four tests above was proposed by Yin (2014). The tests do not include generalisability and face validities. These two are, however, discussed referring to other researchers.

6.7.1 Selection of Cases

Any of the interviewees did not have a good understanding of sustainability to extend the interview. The interviewees refused to hold their appointments even due to a lack of knowledge. As I have had other commitments for interviews, researcher find it impossible to reorganise these interviews. However, owing to unexpected conditions, some of the participants could not maintain their appointments (Mastos *et al.*, 2021). It is impossible to prevent distortions in a study

like this when vocabulary difficulties occur. Questions are transferred from one language to another, participants are time-limited and they lack familiarity with words relevant to sustainability. Also, this analysis is related to a qualitative data collection process and therefore it is almost challenging to reduce partiality. researcher has also followed the ideas, the experience and the familiarity of other researchers with the research field. researcher has sought to minimise the research bias by gathering accurate information about the subject.

Multiple rather than individual research designs (Yin, 2003; Eisenhardt, 1989) are preferred because the results obtained in multiple case designs appear to be more rigorous and convincing than in single-case designs (Yin, 2003). However, Yu (2008) argued with the concept of growing the case study explanatory forces by themselves. He concluded as a pragmatist that single sampling date is sufficient to take a broad view: not to make thousand sampling data more generalised, but a real-world disclosed. Likewise, Easton, (2000) used a single case study approach to analyse ethics codes in footwear supply chain labour practices. It concluded that, while based on a single case by the Chinese athletic footwear retailer Reebok, the results successfully illuminated the primary determinants that obstruct corporate social responsibility policies' efficacy in enforcing labour standards. However, Perry (1998) recommended that many case studies be used in post-graduate study "since cross-case analysis is available for the development of rich theory." Cross-case trend searching lets researchers prevent premature and incorrect results based on early impressions from minimal evidence or information processing mistakes (Eisenhardt, 1989). The chance of capturing new

results that appear in data is also increased by cross-case analysis (Heikkila, 2002). Several cases "reflect duplication" for Ellram (1996, p.102) which makes it possible to create a rich theoretical context. Dubois and Araujo (2007) find in the area of the textile and supply chain that recently, the field journals focused on case studies and had moved from one in-depth analysis to several comparative case studies. Perry (1998) suggested a recommendation for post-graduate case study research in at least 2-4 but only 10-15 scenarios, recognising that multiple case studies by their nature demand greater time and energy that post-graduate research is restricted by minimal time and finance. This was based on his case design literature analysis. Although the optimal number of sampling units in each case is not directed, previous literature has recommended that homogenous samples need 6 to 8 units for sampling, whereas heterogeneous samples frequently need 12 to 20 units of sampling (Lincoln and Guba, 1985; Eisenhardt, 1989). Eisenhardt (1989) proposed that seven theory-building cases would suffice for generalisation without undue pressure on researchers to transcribe and analyse results. The number of cases participating is not determined until entry to 146 in the researcher's field while using purposive sampling (Maykut and Morehouse, 1994). Instead, the number of participating cases will be determined by the degree to which the compilation of data from an additional case leads in this interpretation as science advances, inductive data analysis discovers similar trends and patterns with the ability to explain the research issue. The sampling is motivated not by the need for general knowledge about individuals but rather by defining subjects that can produce a solid understanding in qualitative analysis.

Thompson (1999) explained that it is formal but doubtful. Therefore, case studies should not start with samples from previously constituted populations. The case study can be chosen because they are full of knowledge (Patton, 1990) and provide literal reproduction or theoretical replication opportunities. Theoretical sampling is carried out to define groups and their properties and imply an interrelation into a hypothesis (Davahli et al., 2020). Glaser and Strauss (1967) briefly clarified the distinction between theoretical and statistical sampling. Statistical sampling is carried out to reliably prove the distribution of people between groups for classification or verification purposes. By Eisenhardt's (1989) suggestion, theoretical sampling is used in qualitative research to pick cases from this research. The goal was to widen the existing theory of corporate social responsibility in the supply chain and investigate the effect of specific problems; thus, cases were chosen based on characteristics, which allowed the phenomena to be investigated and 147 theoretically derived variations discerned in the data to be fully established and validated (Sandelowski, 1995). In the area of organisational control, Voss et al., (2002) have also justified this approach. They recommended using several case studies that can better be adapted for the advancement of theory based on (Handfield et al., 2005).

Similarly, in her doctoral study in small business networks, Shaw (1999) used purposeful rather than random sampling in selected case companies rich in research-related data. The report involved firms of various sizes and business styles, including an internationally renowned best-in-class organisation for the ethical garment industry. The insight capacity is a higher criterion than

representativeness in case collection. Therefore, cases were not chosen as a representative sample for the Bangladesh textile industry since they were "especially appropriate for lighting-ups, extension of connections and reasoning between constructions" under the inclusive understanding of CSR in supply chains (Eisenhardt and Graebner, 2007). Stake (1998) claimed that case selection should be based on "a chance of learning," which he felt was more valuable than equilibrium and variation. In terms of persuasive capacity, Mitchell (1983) also recommended the selection of instances. An atypical case also offers more possibilities than a very normal case because the case being examined is close to other cases of the same kind of related features (Mitchell, 1983; Stake, 1998).

However, selection in practice should also be opportunistic since case studies are often based on established contacts between researchers in the industry (Yin, 2003; Seuring, 2005). However, Schofield (2000) cautioned against choosing a case to prevent limiting research's possible generalisability by comfort or ease of access. Instead, it has chosen instances based on their typicality to maximise future generalisation. It has thick descriptions so that readers can assess the degree of fit between the case tested and the chance to which the reader would like to generalise. However, the value of analytical generalisation, rather than the typicality or representativeness of the situation, is assumed to be based on the consistency of scientific reasoning or 'the plausibility of the logic of analysis' (Worsley, 1970; Mitchell, 1983). It would also seem as long as the theoretical rationale is rigorous and rational that opportunistic selection does not compromise the analysis's legitimacy. After Shaw (1999) which reached the data-saturated

point after five cases had been analysed, the number of cases is decided based on saturation. Considering that this number is adequate for generalisation, Eisenhardt (1989) suggested seven cases in theory constructing applications; it was deemed sufficient to investigate six case studies of Bangladesh's garment industry, mainly because it was a homogenous sample of organisations of the same industry. No new results appeared after data was gathered from six cases and the data saturation point was achieved.

6.7.2 Pilot Case Study

Since the topic has appeared, it was essential to assess the modern regional industry practice in Bangladesh to define the relevant questions for addressing the real issues. The principal objective of this pilot study has to authenticate and come up with patterns of the interview concerning both wording, content, layout and format of the statements (Mason, 2004). Furthermore, the study enables researchers to perform the feasibility study by data collection to justify the findings of the main objectives of the study (Pearson *et al.*, 2015). The primary outcome of the initial concept may be supported under real situations or active in modification of future approaches in the research. Yusof and Aspinwall (2009) emphasised the impact of the pilot study by arguing that reviewing, conducting and analysing the study advances the judgment of the main study that will follow. Saunders *et al.* (2012) defined a pilot study as, "*A small-scale study used to test a questionnaire, direct observation schedule or interview checklist, to reduce the likelihood of respondents having issues in answering the questions as well as that of data*

recording problems. This allows some assessment of the questions' reliability and the validity of the data that will be collected".

Table 11: The five-stage research process model (adopted from Stuart *et al.*, 2002; Zander *et al.*, (2016)

Stage	Activities	Description
1.Research question set	Defining the research question.	Case study approach will be linkage with research question.
2.Site selection	Which department will be chosen such as HR, supply chain etc.	Factory in garment industry and overview of factor pattern.
3.Data gathering	Data gathering method.	Interview method such as questioner, semi structural.
4.Data analysis	Case analysis.	Explanation writing.
5.Dissemination	Case study report preparation.	Report would be writing as per thesis guideline.

According to Oppenheim (2000), experiment is the main goal of research, but sometimes it does not just focus on seeking to come up with findings; it also ensures that the procedure and questions are appropriate and adequate. The organisation for the pilot study was picked particularly for their focus on sustainability for enabling a clear understanding of the different environmental and ethical practices being considered in the entire study. Therefore, it serves as an instrument to provide honest feedback that is helpful to the study to be able to fine-tune the real questions of the interview (Gill and Johnson, 2010). Interviews of the pilot study were conducted to make sure that there was an understanding and comprehension by the study to impress the final research interview and give a sense of the entire timeline and observe the interviewee's reaction. The outcomes of this pilot study helped modify the protocol of the main interview. The pilot study's purpose should focus on being relevant to the case study selected to be studied.

Table 12: Summary of preliminary case study at the early stage (March 2017)

From	Discuss with	Objective	Primary findings
Case study 1	Senior management team	Collect general information	Initial meeting with management and gathers company policy about sustainability.
Case study 2	Compliance department	Compliance activities	Understanding about third party inspection and audit policy.
Case study 3	Human resource management Department	Health and safety issues	Participation and arrange in training for Health and safety issues.
Case study 4	Compliance department	Environment issues	The company are more conscious about carbon emission.
Case study 5	Deputy general manager	Initial meeting for data collection (main suppliers and subcontracting work)	The company works as a tier 1 supplier but some time work as a subcontract system due to insufficient order.
Case study 6	Human resource Department	Subcontracting system	The company work purely subcontracting and sometime shutdown factory for few days, when they did not receive any order and does not pay any wages.
BGMEA	Director (International Affair Department)	How does international buyer communication with local garment factory?	The company communicate by herself, but we arrange seminar for guideline and policy, how the communicate?

6.7.3 Case Studies Based on Primary Data

The primary data for this research had been collected by visiting the Bangladeshi garment industry. Data was also collected through observation in the compliance system and questionnaire with top-level management. The researcher has visited six garment factories in Chittagong and Dhaka. The researcher distributed questionnaires to top-level management from the 16th of February 2016 to the 30th of March 2016. The researcher continued follow-up and telephone conversation up to December 2018 about questionnaires with relevant case study factory top-level management. The questionnaire had been prepared relevant to the research. The use of the fixed responding questions (with answers in multiple choices) reduces variability in the findings that may be different from responders and enhances the reliability of the finding. It also simplifies the analysis and interpretation of the data collected.

Table 13: The case study data collection process

Case No.	Company Name	Interview Group	Observation	Company Document
Case .1	A	√	√	√
Case. 2	B	√	√	√
Case. 3	C	√	√	√
Case.4	D	√	√	√
Case.5	E	√	√	√
Case.6	F	√	√	√

6.7.4 Validity

Generally, validity is mainly concerned with the question of accurate representation of findings of what exactly happens in the real circumstances

(Collis and Hussey, 2009). According to Saunders et al. (2012) the main fear is the logic of the answer in the findings, which emphasises what they seem in real situations. It is variables that reflect and measure what they are focused on. Most people have outlined various validity measures. The case study has described different types of validity. The following are the most widely discussed types of validity in the literature. In the current research context, it was found necessary to ensure relevance and internal validity. In the case study, internal validity depends on the responder's answer and function (Babbie, 2012). On the other hand, some of the qualitative nature of the study may be impossible to ensure full external validity. Thus, the findings were made valid to only selected organisations for the case study.

6.7.5 Reliability

In general, reliability focuses on the question of whether the research study, if performed with a different person in the same setting, the outcomes of the study would be the same (Babbie, 2012). Thus, reliability interviews would have the consistency of the procedure in the research (Pearson *et al.*, 2015). The study shows that participant and observers errors and biases contribute to reducing the research reliability; therefore, to minimise these, researchers are expected to ask the question and make sure that people are retaining the same definitions and categories in their response (Healy and Perry, 2000; Riege, 2003). Based on this research, respondents may define sustainability in various ways and in a similar case, they manage it differently (Bryman and Bell, 2015). However, the study is expected to make sure that answers or responses from people are reliably comparable (Saunders *et al.*, 2012). To achieve this, two

ways were used; ensuring that respondents clearly understand the questions and by the use of similar questions in the same language for every respondent (Bryman, 2004). The researcher had detailed the protocol of the case study to make sure consistency is achieved by following the steps. Also, the contents of the case study encompassed identifying the source of data, presenting credibility to field contacts and the various logical reminders in establishing the evidence (Touboullic and Walker, 2015). The researcher personally collected all the required data to ensure the consistency of the research. Later, transcriptions of the audio recorded were completed to ensure the study is reliable.

Table 14: Relevant situations for different research methods

Method	Form of Research Question	Requires control of behavioural events?	Focuses on contemporary events?
Experiment	How, Why?	Yes	Yes
Survey	Who, what, where, How, Many, How Much?	No	Yes
Archival	Who, what, where, How, Many, How Much?	No	Yes/No
History	How, Why?	No	Yes
Case Study	How, Why?	No	Yes

Source: Yin, (2014)

6.8 Conclusion

The conclusion describes how the study has been done in terms of the design of the research, qualitative research design based on garment industry visit, methods of collection of data, the data sampling process, the construction of case study, scales for measurement and the processes of analysis of the data. In a clear way, the introductory overview of the methodology used contributes to the data analysis inputs. The next chapter analyses the case study.

Chapter 7. Case Studies

The chapter outlines a clear overview briefly for the organisations. Researcher has selected to keep a balance between abstraction and details. The study has chosen six different factories which were not related to each other due to comparison in several levels of standard. For example, case study 1 and 2 for multinational organisations, case study 3 and 4 for reputed local companies, case study 5 for local companies (1st tier and subcontractor) and case study 6 for only subcontracting. These were chosen and compiled based on the findings that were found from interviews. Furthermore, all case study findings will be justified on the basis of cross-case analysis. The case has formally and strategically recognised the importance of a sustainability supply chain due to competitive, regulatory and community pressures (Mangla *et al.*, 2018a). A clear overview of case study companies was made of an outline of the corporate views of sustainability and related moves within the supply chain. The case study designed with the following flow chart,

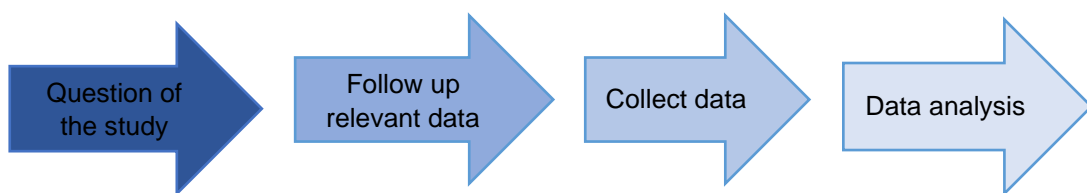


Figure 12: Case analysis flow chart

The interviews were recorded on audiotapes and transcribed for analysis. Furthermore, discussed the results on various occasions with the intermediary for sourcing but also made efforts to contact experts through follow-up emails for validation of the results. Also, by visiting all the case study factories, researcher took notes and pictures in person to help me make a careful

analysis. The researcher collected supplemented data with various sources of secondary data in the form of sensitive documents from companies, for instance, detailed profiles of companies, current status to social compliance, upcoming, actual and historical reports and audit documents, corrective plans of action, company's own economic, environment and social checklists for compliance, among others. Before the commencement of the interview, the details of the project were briefly introduced and an opportunity was accorded to responders to explain and describe her or his role in the company.

7.1 Case Study 1 Background

Case study 1 focuses on manufacturing jackets and sportswear. It is based in Sweden. The company has since expanded to be the premier manufacturer of men, women and kids garment products. Case study 1 boasts of owning and operating various production facilities in El Salvador, Vietnam, Bangladesh and China. The growth of case study 1 can be attributed to the efforts made by over 70,000 employees and the support it has given to their families for the past 41 years.

7.1.1 Flowchart of Company Production Position

Case study 1 manufactures its products to export in UK and EU market. The company imports more than 80% of raw materials from India, Hong Kong and China. It also maintains a direct contract with global buyers. According to this study flowchart, case study 1's supply chain system which denotes how the company is sourcing their raw materials for garment products. There are two parts; first source is nominated by buyers' materials which means buyers would

choose which raw materials will be used for the finished products such as fabric will come from India, but hanger will come from China and also materials will be selected by buyers. The other part is source by suppliers. There is no recommendation for specific materials by the buyers. While discussing the packaging materials, the sustainable supply chain officer said that our pre-production materials like zipper, tape, elastic are nominated by buyers and those elements are also sustainably put into consideration. He explained the recycling activities,

“All the waste carton box sold out into the recycled marketplace for reusing. Our aim not to burn or throw away something ... It's all reused, and any other bundling that's thrown away from ... the distribution centre is additionally bundled and evacuated.”

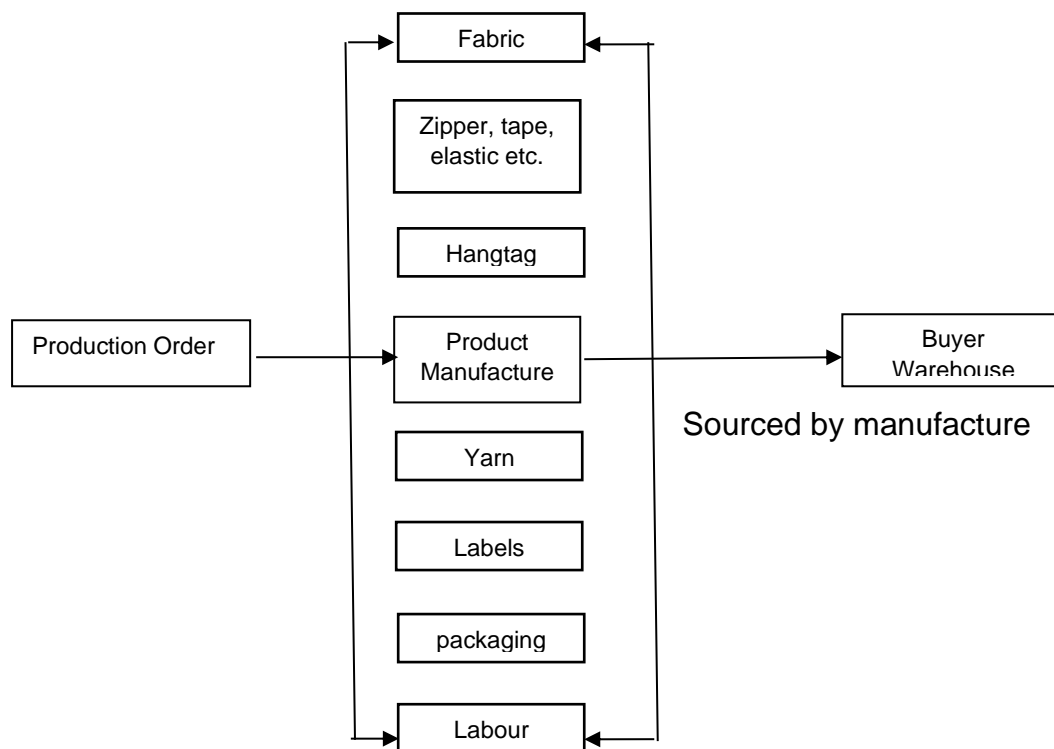


Figure 13: Supply chain diagram of case study 1

7.1.2 Addressing Three Sustainability Dimension

The integrated support system has a significant role played in the sustainable development of the garment industry that are concerned. Besides, the company boasts of a comprehensive product portfolio that is highly dependent on its continued investment in individuals contributing to the company's diversification. Most of the case study 1 interviewer respondents regarded the term of sustainability as a combination of environmental, economic and social dimensions meant to maintain social wellness. Supply chain manager explained the overall system,

“Do we speak about the sustainability of society, human resource or cultures? Yes.... There are a lot of components like any garment products chain... in general, I think in the company, we can see sustainability defined in many ways, but world is concern only for environmental.”

The company contributes to the worker's welfare in an effective way which is containing standard living wages. Besides, employees get enough benefit to afford the basic needs and younger family members would not be involved in family contribution. Therefore, younger family members go to school. The company facility would benefit other young family members who would contribute to the local community in this area. Age identification is difficult to control in developing countries due to higher level of poverty and illiterate parents. Sometimes, young age employees provide a false birth certificate. Sustainable supply chain officer also summaries the way in which the recruitment process,

“We recruit our employees at a minimum standard age ... It is not under ... 18 and this is our buyer’s requirement and company policy. Bangladesh Labour Law are strict for child labour ... And I say also that child labour creates a problem for company branding.”

Also, the topic of sustainability was discussed as an issue relating to society and the environment. Therefore, it should be addressed from the point of materials and the impacts on the social and environment. The company's position on sustainability against elements was supposed to take steps intended to reduce their harmful effects on the environment. Bhatia *et al.* (2020) argued that government regulation makes increases environmental protection. As a result, case study 1 decided to use waste management compliance. Sustainable supply chain officer explained the contribution of waste management,

"Our point of view is really too positive for the waste management, even though ... it does not have certification from any audit inspection ... But we are maintaining our waste management standard ... ultimately our goal is to reuse waste products (garment products)."

The case study 1 supply chain manager also explained,

“The need for economic efficiency is related with the necessity of the sales ... volume and also agreed that their continued operation was highly ... dependent on sales.”

Another expose was that the profits and sales of suppliers of accessories were highly reliant on volumes sold by manufacturers of accessories. Case study 1 sustainable supply chain officer introduces positive sensations,

“Day by day ... our product demand is going to increase in global garment product market. Besides, it could be making a good profit after ... settle company costs. This is economic sustainability to build up our ... new market in the global business.”

7.1.3 Implementation of Sustainable Supply Chain Indicator

All the buyers of case study 1 are then assessed based on the requirements for sustainability, for instance, work-force standards and policy, waste management as well as pollution reduction. This is done by the 3rd party audit team. The business, based on the assessment, can be allowed to proceed or if found not to be similar or the consistency is below the performance standards, is required to be changed before the formal deal is made. The human resource department is mandated to coordinate this formalisation with the suppliers that are selected after the assessment. It further gives the mandate to renew contracts of previous suppliers.

Furthermore, sustainability in the qualification phase also can mean various other factors such as quality and cost. The aim of the sustainability implementation has to be accountability for standard products which are needed for inspection by external auditors. The third-party audit considers the various requirements for sustainability as well as the adoption of contracts. However, all these are achieved by cross checking with the supplier's rules and regulations. The importance of this to allow the organisation to easily trace the materials as well as the recycled ones used in packaging.

Case study 1 has capacity and quality criteria in the selection for a nominated as a new supplier. Furthermore, the company presents its policies for buyers' engagement. The policy covers safety, human rights, cost reduction and protection aspects of the environment. This policy was designed to put into consideration the standards set aside for brands. In the overall view, these requirements agree with the plan of engagement of case study 1. However, there is no monitor nor evaluate its suppliers against these requirements.

7.1.3.1 Implementation Challenge of Sustainable Supply Chain

The company focuses on the implementation of the sustainability vision of 2030 that provides the guidelines for attaining sustainability by the year 2030. The government provided the guideline plans to target and commitments that are required to be achieved by a certain period. On the other hand, the government legislation department worked very slowly to achieve certification. The company is a registered member of ACCORD, an industry association that focuses on promoting sustainability in the Bangladeshi garment industry. Case study 1 takes initiatives so that no workers need to fear collapses of buildings, fires or any other accidents since they are prevented by reasonable safety and health measures. ACCORD refers to a legal agreement that binds retailers with trade unions that covers over 1700 suppliers helping them build safer manufacturing facilities for the industry all over Bangladesh. Also, since the year 2005, case study 1 has involved itself in better corporate social responsibility.

When the researcher asked the human resource manager about their code of conduct and how case study 1 human resource manager works in terms of

ethical trading, the manager said it was challenging to maintain the code of conduct. However, he added that this is essential for every company and towards its established goals,

“Our company has the code of conduct ... that covers all aspects of our organisation, however currently our code of conduct is ... ethical based like as human rights, safe workplace. It is supported the moral mercantilism ... initiative base code.”

He also added that they are currently focusing on the ethical side of sustainability. Case study 1 is a multinational company but there are limited resources the company possesses now. Materials that are considered sustainable like fair-trade and organic products. The sustainability compliance managers describe the stronger conditions,

“We are trying to use organic cotton, but it is expensive, sometime is difficult to use organic cotton. Our whole collaboration operates with third-party inspection teams and buyers. Therefore, we have to more careful about quality products.”

The case study 1 makes brands position itself globally as ethical trade and environment friendly.

The corporate social responsibility consultants established goals,

“ Bangladesh government provides specific social and environmental standard guideline for different place ... such as export process zone (EPZ) area maintains high ... standard rather than outside of EPZ. Therefore ... it is difficult to implement and practice certain framework for whole country.”

It is interesting that the use of such agreements is very critical to the sustainability implementation.

7.1.3.2 Mitigation of the Implementation Challenge

Employee's training programme design of the case study 1 has made a strategic initiative that solved some challenges of the supply chain department. However, quality products had to stand on their own merits of aesthetics. The compliance manager explains,

"Eco product ... is our main advantage and it is sustainable. We have our global network to collaborate each other... Because eco products are more expensive rather than traditional products. Therefore ... we received a quick response from our buyers."

In this case study, the focus has drawn to succeed in their counter to the mitigate for implementation challenges with its processes and products with respect to workers, eco-friend products, collaboration culture as well as its partners in the supply chain.

Case study 1's corporate social responsibility consultant made it clear,

"Buyers are the primary determinants of standards of corporate responsibility and played a significant role in making sure that corporate responsibility was given the priority."

The company further recognised that *"It is vital issues to ensure proper conditions of working for its employees especially for developing a business that is sustainable."*

The sustainable compliance officer also acknowledged,

“The benefits of maintaining sustainable processes.”

Moreover, the reliability of employees is significant in managing the entire organisation. Also, it eases to take the decision to achieve the quality levels that are required and within the due dates of delivery.

In addition, case study 1 has a sensitive approach to buyers and governance. For example, when buyers have not seen ready to conduct a full inspection of production, they carry out part inspection. Sustainability compliance manager also informs the buyers and states clearly,

“If they have not had proper an audit experience before ... they might send third party experience audit team on behave of their own ... then we could provide an overview of the product information, general conversations ... And code of conduct to make them feel a more comfortable about full inspection.”

7.1.4 Implementation Finding

The management has to familiar with sustainability implementation keywords and meaning, which is important for a good workplace. According to case study 1 responders, most of the keywords are familiar with management level. But sustainability policy and perceived sustainability of the production system in economic aspects did not understand by management. Moreover, the equal significance of sustainability in the assessment is not familiar in economic and environmental aspect.

Table 15: Main finding of case study 1's implementation of sustainable supply chain

Factors	Social	Environment	Economic
Meaning of sustainability	√	√	√
Sustainability adoption	√	√	√
Sustainability certification	√	√	√
Sustainability policy	√	√	x
Sustainability management	√	√	√
Top-level management training on issues of sustainability	√	√	√
Stakeholders' engagements	√	√	√
Implementation scope of requirements of sustainability	√	√	√
Advocacy & awareness campaigns	√	√	√
Cross-functional integration	√	√	√
Potential changes to make this production system more sustainable	√	√	√
Code of conduct reflect in organisation	√	√	√
A clear understanding of the capability of buyers	√	√	√
Approaches that are collaborative with buyers	√	√	√
Perceived sustainability of the production system	√	√	x
The equal significance of sustainability in the assessment	√	x	x

7.1.5 Sustainable Supply Chain Practice

Internally there are not so many barriers as discussed that there is support at all levels of the company. Also, the study provides information and support to help case study 1 employees and implement the required sustainable practices. There is no resistance to incorporate such standards, as it is an ongoing process.

Case study 1 has incorporated the measurement of additional environmental indicators, such as: carbon footprint, water footprint, biogenic waste, anthropogenic waste and plastic recycling. Regarding the measurement of additional social and economic indicators, case study 1 representative argued that the industry has surveyed to assess the main socio-economic needs of the communities located near garment industry area. In this sense, the company is apparently exploring possible improving mechanisms, such as improving the infrastructure of buildings and schools in neighbouring communities. Also, case study 1 is reportedly providing educational information in schools located near the factory area. In order to promote a culture of environmental conservation and water preservation. Sustainable compliance officer complying with buyer's demand,

“We are trying to reduce ... the incidence of accidents and encourage employees ... to work more. For this reason, we are implementing so many audits ... to assess all these aspects.”

To provide context for the sustainable initiatives of case study 1. It was inevitable to understand how this sustainability concept was understood by participants. The responders say that the meaning of sustainability described in the environmental part that case study 1 role plays as far as socio-economic responsibility as well. They explained that environmental issues are linked to economic and social problems, all of them falling under social consciousness.

The history of case study 1 in practices focusing on human rights than those focusing on the environment is long. However, all of them have been regarded

as essential in the company's role in economic and social responsibility. When comparing the two, the human resource manager responded,

“I would like to say that our human resource department closely works ... with international labour organisation, long time we have been involved with ... employees’ facilities and employees working hours. Human rights and social conditions are our supplier’s main priority ... And the environmental condition is our serious issues since the early 2006’s.”

In general, the fire and safety policy, the guideline manuals, the supplier code of conduct and the social practices must be implemented by suppliers. Also, it describes how the concept of sustainability is considered by case study 1 and its ability to measure the compliance of suppliers. These are aligned with the sustainability vision of 2030. The design of the guidelines manual and the codes were hinged on top management support and the integration of their primary functions of interactions with suppliers, for example, pay, sustainability, operations and quality. The social and environmental practices that were internally implemented were influential in designing the requirements, for instance, social cooperate and environmental management systems.

The core practices for sustainability involved in the vision include the use of recycled materials, the use of building codes and the sustainable implementation element. Among the critical areas of sustainability that have been prioritised include good workplace conditions and waste management through the entire supply chain. The improvement of human rights and quality assurance is mandatory for case study 1 in the supply chain and also

implementation of a standard salary scheme for each employee in the organisation.

Table 16: Finding case study 1, which uses sustainability implementation drivers

Indicators	Finding
Governance	<p>The company published disclose report to the global community about sustainability performance.</p> <p>Top management is committed to following the international labour Law and UN sustainable development goals.</p>
Corporate social responsibility	<p>The company provides priority to recruit in the local community and train up employees as a world-class standard.</p> <p>Environmental issues are the main priority as a population density country like Bangladesh; the company uses an ETP plan for water treatment.</p>
Stakeholder	<p>The company is aware of all local communities.</p> <p>The company is conscious of producing guilt-free products for global consumers.</p>
Transparency	<p>The company has to make sure the customers know the product's country of origin.</p>
Supply chain network	<p>The company creates a good network and sign of collaboration.</p> <p>The company made a commercial agreement with third-party and international NGOs for workers' rights.</p>

Concerning case study 1 sustainability practices indicators, the organisation considers the requisites contained in the sustainability standards demanded by its buyers, in conjunction with accompanying environmental and socio-economic indicators and standards. Articulately, the company mainly monitors its sustainable practices through the implementation of third-party inspection and certification concerning sustainability, the mandatory as well as supplementary sustainability standards, which are subsequently reported to its buyers as a sign of collaboration and make a supply chain network. The organisation's strategy behind implementing sustainable practices is related to ensuring commercial agreements with clients from the international market, as

well as fostering adequate management practices concerning employees and the environment. The organisation is looking forward to producing sustainable products and reduce the water footprint of the packing plant, as well as to reduce the emission.

7.1.6 Main Finding

Table 17: Case study 1 main findings of three sustainability dimensions

Indicators	Main finding
Social	Working Conditions <ul style="list-style-type: none"> • Safety and health, for instance, emergency, training, air ventilation systems PPE and sanitary facilities. • Salaries, for instance, prevailing wages or minimum wages in the industry. • Business operations law compliance. • Sustainable procurement practices. Human Rights <ul style="list-style-type: none"> • Prohibiting child labour. • Prohibiting abuse and harassment. • Prohibiting forced labour. • Monitoring job satisfaction.
Environment	<ul style="list-style-type: none"> • Reduction of emissions and use of hazardous materials. • Minimisation of pollution and reduction of waste. • Monitoring of environmental performance. • Control in waste management. • Temperature control and adequate lighting.
Economic	<ul style="list-style-type: none"> • Productivity • Cost reduction • Trickle down • Quality assurance • Competitive pressure • Trust

In the three dimensions of sustainable supply chain practices, they show the diversity in social and environmental sustainability practices. The main reason

could be a close relationship with stakeholders and have transparency in global communities after several fire incident and building collapse. There is another reason to maintain the reputation in the world; the case study 1, as a multinational company, also maintains proper sustainable supply chain practices. It is found that the social sustainability practices implement the workers' jobs security, welfare facilities, health and safety and good workplace. The company emphasis for waste management and reduction in emission, the economic sustainability adopted by quality assurance, cost reduction etc.

7.2 Case Study 2 Background

Case study 2 discusses about one of the multinational company in Bangladesh. The company started business in Bangladesh in 1991. It is operating in thirteen factories in different countries in the world with a total of 28,000 employees. It now boasts of being one of the leading companies that manufacture ladies' swimwear and fashion lingerie all over the world. Case study 2 works in collaboration with global buyers to be able to create lingerie that is custom made and programmes for swimwear.

Case study 2 is in accordance with the Sustainable Development Goals (SDGs) of UN, which are a new global set of goals, indicators and targets. The members of the United Nations will use these goals to measure their policies and agendas for the next 15 years. The company ensures the prosperity and protection of the environment in the factory for everyone as part of the new development agenda. "Leave no one behind" is an essential characteristic of the SDGs.

7.2.1 Flowchart of Company Production Position

Case study 2 sources its fabrics from Taiwan, China and Vietnam while local market supplied yarn, zipper, hangtag, packaging materials and labels. They mostly produce t-shirt, trouser and kids' products, which are denoted high range of products.

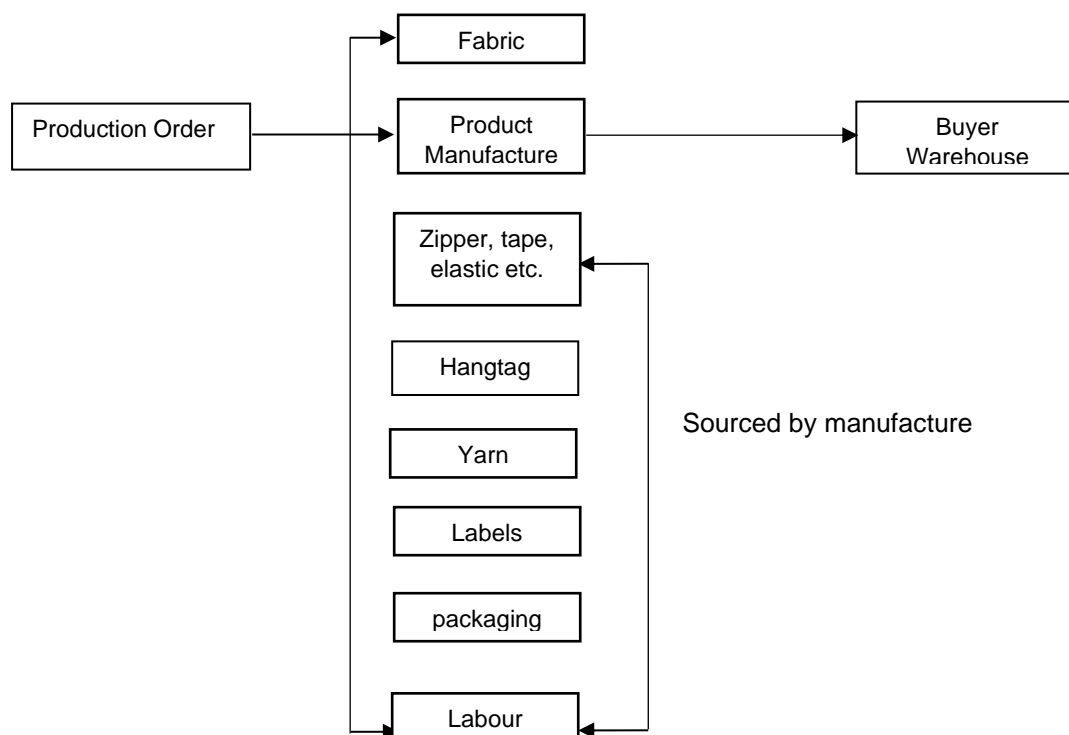


Figure14: Supply Chain diagram of Case study 2

7.2.2 Addressing Three Sustainability Dimension

Case study 2 has a major focus on the development and training of their workforce. This is possibly the key to the company's sustainable growth. In line with this, the company plans for motivational and technical training programmes that help increase performance as well as the efficiency of the management and workers in their various departments. For instance, there are professional

training conducted on a regular basis. Furthermore, managerial training programmes are given to managers and supervisors to hold and improve their capabilities. Human resource officer explained the importance of staff training,

“Time to time ... we arrange training for compliance issues and our colleagues to follow the company’s standard, code of conduct ... They also upgrade their professional behaviour for sourcing ... social compliance and factory temperature.”

Standard wages make a good living standard; subsequently, it provides the opportunity to improve their lives. Case study 2 responders agree that if workers get standard living wages, they have spare time to spend with family. Their children go to school and receive education. Standard living wages would be regard to able make up their lives with self-respect. Human resource officer explained the importance of the wages scheme,

“Our wages scheme follows by BGMEA ... and government pay scale ... And the only condition to update every year wages scheme.”

Case study 2 has a focus on improving energy efficiency and is committed to reducing carbon emissions by 2020. It has already reduced more than 40% since 2018. The company took initiatives to convert from traditional tube lights to energy-saving lights, use in LCD monitors and servo sewing motors machine and reduce emissions. Case study 2 constructed one new building with an aim to reduce carbon footprint and adopting environmentally friendly practices. The company developed factory waste heat recovery plans because it is reducing the amount of fuel used to produce heat in the steam boiler. This improvement

made 50% cost saving of its energy. Case study 2 sustainable development officer define,

"I think we can define about eco and green ... sustainable garment industry. Our factory follows the eco-friendly environment ... such as energy-saving light, carbon emission and waste management system."

Furthermore, he explained,

"Made in Bangladesh is a symbol of quality and efficiency."

7.2.3 Implementation of Sustainable Supply Chain Indicator

Case study 2 is certified by ISO 9001, SA8000 and WRAP as well as provides one-to-one service includes manufacturing, expertise for construction and development of designs. Since the year 2000, the company has been operating more new factories in Bangladesh. To make sure the company achieves a practicing approach towards the implementation policies of sustainability. There are various supportive determinants that were identified as follows, cultural beliefs resulting from collective beliefs and values lead to a cause for sustainability in an organisation (Chanlat *et al.*, 2013). These create a basis on which engagement in a sustainable supply chain is anchored as well as consideration of both environmental and social issues in the supply chain. Sustainability, therefore, is rooted in a company's culture. The supply chain general manager argues that,

"Social and environment certification provides standard level the culture of the company."

The commitment of case study 2 regarding excellent management was further identified as an enabler that is central to a sustainable supply chain. With this regard, the results indicated that being committed means being with an open mind as far as environmental and social issues are concerned as well as implementing solutions that are adequate. Case study 2 sustainability development officer summarised,

“Management has to be fully engaged for clear vision in sustainability implementation and practice.”

7.2.3.1 Implementation Challenge of Sustainable Supply Chain

There are several problems come at inspection level with different views expressed by organisation and regulators body such as government and NGOs. Corporate social responsibility officer indicates that,

“The frequency of inspections in varies factory floor, environmental emission check and other social activity make a quality of the inspections.”

However, it is notated that the factory floor is not properly inspected by the third-party compliance team and there is no complaint due to ‘unofficial’ payments for compliance inspection certifications. Consequently, third-party inspection officials do not always get adequate support from factory management. Human resource officer addressed women worker’s benefit,

“Now a days ... every buyer is asking to us what the benefits of women workers are in your company. They are not asking what the production capacity is ... or what the quality is ... Now a days most buyers are asking every time what the advantages for the women employees are.”

The success of Case study 2 is highly attributed to the highly skilled and motivated human workforce. Sustainability development officer said,

“Our workers and management team need more training to moving towards ... the certified sustainable garment industry ... But there is a big challenge to skill providers. However, the ILO provides labour inspection course ”.

However, when researcher observing the factory training logbook, there are very few staff sign-in logbook and most of the page was blank. This is so difficult to monitor the logbook.

According to the corporate social responsibility director, the company's core corporate value is "*respect and trust for individuals*," and it has successfully infused it in the organisation by not only embracing transparency and openness but also accommodating change and being appreciative of individual efforts. The philosophy has proved critical in ensuring a healthy work environment and decentralisation of the process of decision-making for over 20 years. These efforts have seen case study 2 company receive many awards for its contributions.

7.2.3.2 Mitigation of the Implementation Challenge

The Human resource manager outlined the function of the human resource department in the organisation. This nomination with the primary responsibility of regular monitoring workers' and discuss with directly related supervisor team to support them with issues that may arise to obstruct their ability to work or reduce their productivity. He expressed,

“Every factory floor has a minimum two human resource colleagues and they are always monitoring and look after workers’ needs ... Specially after lunch break, human resource colleague ... Asks about any problems and note down any issues. Sometimes, we have hot temperature issues in factory floor at summer time ... We try to solve the problem at our level best.”

He also expressed age restrict workers,

“Our human resource department monitoring our young colleague ... Who is just cross 18 years ...? Because we have a zero tolerance policy for child labour.”

The status of carbon emission is an implication that the company produces zero carbons into the environment, which is achieved through means such as carbon credits or offsetting and reduction of the actual emissions of carbon. For case study 2, becoming carbon emission is straightforward since it has no physical store. Sustainable development officer carried out a calculation on case study 2 emissions of the greenhouse gases and argued,

“Last year the company carbon emission was zero level ... and we would really like to stay away ... from carbon emission. However, our business is growing up ... and also our new emission figure is up to date what is extremely vital for us.”

The first step of becoming carbon neutral is by carrying out a measure of a company's carbon emissions into the atmosphere. This certification was awarded by the Carbon Neutral Company.

7.2.4 Implementation Finding

According to case study 2 responders, most of the implementation factors meaning understand as per researcher observation and asking questioners. There are few economic aspects that did not understand special sustainability technical terms.

Table 18: Main finding of case study 2's implementation of sustainable supply chain

Factors	Social	Environment	Economic
Meaning of sustainability	√	√	√
Sustainability adoption	√		√
Sustainability certification	√	√	√
Sustainability policy	√	√	√
Sustainability management	√	√	√
Top level management training on issues of sustainability	√	√	X
Stakeholders' engagements	√	√	X
Implementation scope of requirements of sustainability	√	√	√
Advocacy & awareness campaigns	√	√	√
Cross-functional integration	√	√	√
Potential changes to make this production system more sustainable	√	√	√
Code of conduct reflect in organisation	√	√	X
A clear understanding of the capability of buyers	√	√	√
Approaches that are collaborative with buyers	√	√	√
Perceived sustainability of the production system	√	√	X
The equal significance of sustainability in the assessment	√	√	X

7.2.5 Sustainable Supply Chain Practice

Case study 2 provided few information such as workers think the management is helpful and capable. Most of the workers are excited about the arrangement of working hours, workers are positively on their job in the company. In fact, most of them recommend case study 2 to their relatives and friends. The company has employees who are highly productive and efficient. According to the human resource officer,

“They are the hardest working individuals in the world ... and our workers provide extra mill by working long term basis.”

The sustainability compliance officer addressed sustainability practices,

“Our valuable buyer visits the factory and ensures the quality product, but they also inspect the factory internal and external condition ... Which is included in all compliance information ... such employee wages and benefit, factory building fire extinguish, health and safety issues, low carbon emissions ... And low energy consumption, etc.”

The companies are leading position in the denim industry can be attributed to this fact. The best performing employees are rewarded among this exceptional team, for instance, the monthly award of the best employee. The supply chain general manager approached the factory colleagues,

“Our objective is very clear for our hard-working colleagues, every month we declare employee of the month ... And encourage other colleagues. This connection is related ... to establish social and environmental sustainability in our company’s supply chain.”

Case study 2 reduced their advertising cost rather than increased workers' benefit like health and safety issues. This new concept makes a value-adding in the global garment industry and adopted a sustainable supply chain. Case study 2 also adopted eco-friendly practices, which makes economic benefits in the long run. Most of the responders express their attention to the eco-system and they believe that good environmental treatment policy makes a long-term value add in their organisation.

Human resource officer expressed,

“Last 30 years ... We are providing free lunch and evening biscuits and bananas ... Specially we include bananas at evening time due to clear small fabrics waste dust from throat and chest.”

Sustainability practice adopted and became standard in the garment industry in Bangladesh. The officer believes in the significance of the workforce to business continuation when they were filtered down through the organisation via practices, policies and the structure of the organisation. He regularly visits to perform checks and inspection conditions as well as speaking to the employees. Human resource department was set up in the factory to monitor worker situations and circumstances.

The function of sustainability integration is a core issue of the organisation. Supply chain general manager of case study 2 says about company loyalty,

“We use our loyalty to hold our reputation as a responsible citizen should ... behave and by so doing creating an opportunity ... for substantial development.”

She also said sustainability practices are used as substances to improve the system of the company. The company has six basic remarked strategic pillars that help to channel the efforts on sustainability and ensure steps are taken towards the commitments. The six focused areas include security, growth through innovation, product responsibility, health and safety, environment and building of social institution. From these six areas, three, which includes health and safety, responsibility and social institution building are regarded as the most important to social sustainability.

However, the company has implemented and follow up the certain international standard for the welfare committee and promote the worker's rights in the factory. These processes are monitored across the whole human resource department. The key component of contention is on the training of the employees, which has resulted in increased skills across all levels. The company also has a special career development planning scheme for workers, which creates economical sustainability. The company always monitors the abovementioned sustainability aspects and those practicing more challengeable without good governance and organisation transparency.

Table 19: Finding case study 2 which uses sustainability implementation drivers

Indicators	Finding
Governance	Certification is the main advantage to achieved good governance, case study 2 certified by ISO, SA 8000 and WRAP and also oblige for good governance
Corporate social responsibility	SA 8000 certification identification is one of the most powerful tools for social responsibility discloser. The company has SA certification
Stakeholder	The fair and decent decisions made by the ethical leaders are considered based on stakeholders' needs for the organisation
Transparency	The company is transparent in their weakness and strength, and also publish discloser report in a year for their stakeholder
Supply chain network	The company has well structural forward network and also collocate with local and international agency

The main strategic points of Case study 2 behind employing sustainable practices are related to the compliance with mandatory regulations contained inside contractual agreements with buyers and the applicable local and international legal framework. Moreover, for case study 2, the aforesaid also implies an opportunity to benefit its personnel by providing adequate work conditions.

Case study 2 mainly monitors its sustainable practices by carrying out annual internal and external audits of the required sustainability standards and collaborates with its buyers by sending them the reports of such verification process and the corresponding certificate. Also, the organisation is looking forward in contributing to sustainability by attempting to implement better waste management systems that can allow the company to protect the landfill.

7.2.6 Main Finding

Table 20: Case study 2 main finding of three sustainability dimensions

Indicators	Main finding
Social	Working Conditions <ul style="list-style-type: none"> • Health and safety, for instance, emergency, training, air ventilation systems PPE and sanitary facilities • Salaries, for instance, prevailing wages or minimum wages in the industry • Business operations law compliance • Sustainable procurement practices Human Rights <ul style="list-style-type: none"> • Prohibiting child labour • Prohibiting abuse and harassment • Prohibiting forced labour • Monitoring job satisfaction
Environment	<ul style="list-style-type: none"> • Reduction of emissions and use of hazardous materials • Minimisation of pollution and reduction of wastage • Monitoring of environmental performance • Temperature control and adequate lighting
Economic	<ul style="list-style-type: none"> • Productivity • Cost reduction • Trickle down • Quality assurance • Competitive pressure

Based on case study 2, consists of the main summary of the findings achieved from research question 1. Case study 2's social aspect consists of two conditions such as working conditions and human rights. In respect of environmental practices implementation, this is more obligatory by local government regulations. Bhatia *et al.* (2020) argued that governmental regulation minimises waste generation. Carbon emission reduction and waste

management awareness connect with environmental impact regarding cost saving in the organisation.

7.3 Case Study 3 Background

The company is regarded as one of the nation's renowned garment industry exporters. Furthermore, it is a pioneer jeans manufacturer in Bangladesh. Case study 3 is in the port city referred to as Chittagong Export Processing Zone (CEPZ) and is regarded as one of the highly prospective companies in the garment industry in Bangladesh. The company has received five consecutive awards of the national export stature by the government of Bangladesh. It boasts of being a world-class manufacturing company of casual wear, particularly from its state-of-the-art facility for production, unique development and research Centre and skilled and trained labour. The combination of these factors has transformed this small factory into an excellent company for design and manufacturing premium jeans. Individual contributions from case study 3 were also awarded; for instance, the chairman of case study 3 was awarded the businessman of the year in Bangladesh in 2006. One of the most coveted awards case study 3 took home was the prestigious HSBC Export Excellence that was awarded in 2010 and 2012.

7.3.1 Flowchart of Company Production Position

Case study 3 manufactures men, women and kids' products. The company received order details by email from buying office. They have a good range of production capacity and most of the products are exported to the USA, Canada

and the UK. However, the buyers provide fabrics for suppliers and accessories are sourced from the local market.

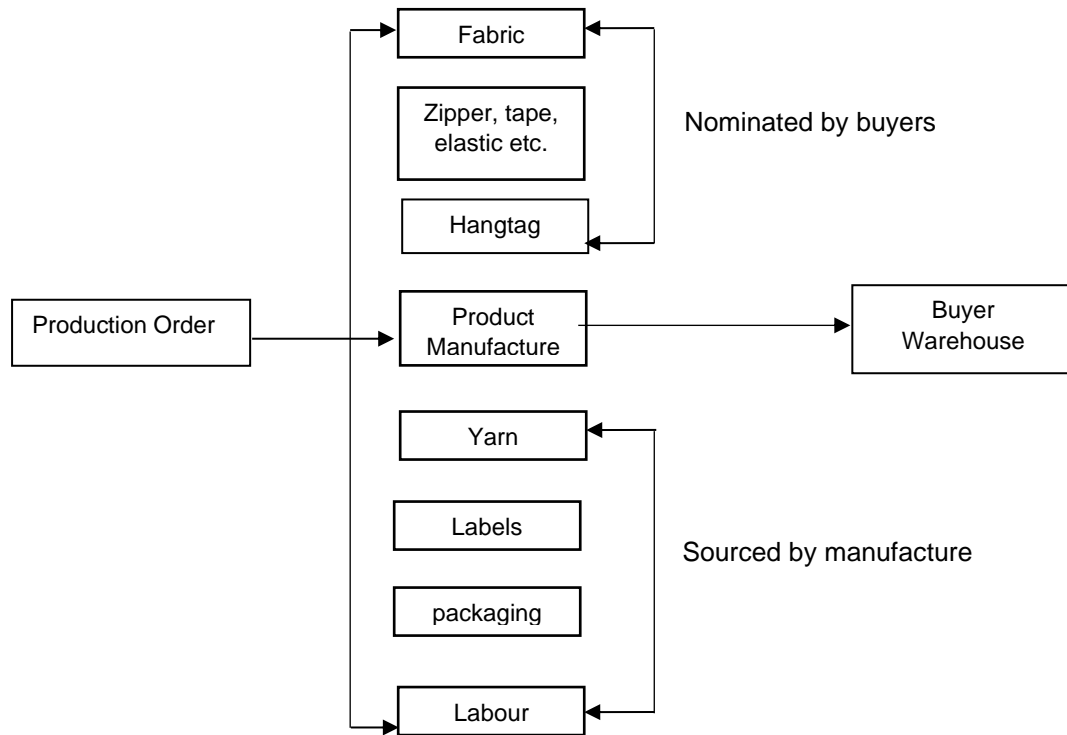


Figure 15: Supply chain diagram of case study 3

7.3.2 Addressing Three Sustainability Dimension

With the case study 3 continuous support for value addition and quality improvement, commitments to maintain a healthy and safe workplace and adoption of the best emerging technologies, the company has put itself on the lead as one of the most desirable buyers of product designs. The sustainability development officer expressed,

“Sometimes, buyers sent inspection team for products compliance check ... They are not concerned for workers facility, health and safety or environmental issues ... Buyers only process check of the products.”

It was found that besides a supportive culture and committed management, also the involvement of employees directly helps to implement sustainability of the supply chain. This group of employees comprises of the workers whose scope of work includes activities that affect the supply chain, for instance, members of development, design, purchasing and sustainability departments. An investigation carried out by case study 3 on the issue of sustainability found integration and relationship management in the overall corporate strategy. Those strategies identify that not only does good relationship management enable a sustainable supply chain but also motivates workers directly towards the mission. Sustainable development manager explained about sustainability,

“We have to understand a clear sustainability strategy rather than ...what we know as the meaning of sustainability.”

The company's foundation is based on the corporate social responsibility wing that has established two high schools and two primary schools in Bangladesh to educate the needy but bright children. Besides, the company provides medical treatment that is free of charge, scholarships and medicines to children from less fortunate families. Corporate social responsibility director approaches the internal management team,

“We attempted to form objectives that the various departments can at that point shape themselves ... Which we tend to free it right all the way down to the entire management team ... And thought of what we wish to try and do ... What is our identity, what is our sustainability mission?”

According to the corporate social responsibility director,

“Our company’s mission is through sustainable measure and improving the quality of life across the socio-economic space, thereby spreading Bangladesh across the world.”

Stakeholders believe that sustainability issues can be identified by interaction with the relevant parties. The identified issues are evaluated for social, economic and environmental impact on a yearly basis with the change in the environment kept in mind. Also, case study 3 advises that a strong global network creates value on a sustainable basis.

The company believes that as a manufacturing company, it is responsible for restoring the waste that will not affect environmental pollution. This is to make sure that existence waste could not be harmful to the local area. However, case study 3 has committed itself to produce a sustainable product and balancing a good environment for future generations. To achieve this, the company is focusing on the recycling of water that is toxic. To remain energy efficient, the company has invested in high-tech machines and uses energy-saving light that makes efficient energy systems and highly reflective floors. Also, the company is generating energy by use of waste heat. Case study 3 says that buyers do not pressure waste management, but we take responsibility for the good quality dyeing process.

7.3.3 Implementation of Sustainable Supply Chain Indicator

Effluent treatment plant (ETP) is a unique facility by the company which was established to protect the environment. It is uniquely designed to ensure

environmentally sensitive parameters are within naturally recommended levels before they are water discharged. This unit was developed by following all legal requirements from the Bangladesh government's environment department. The company received the ISO 14001:2004 compliance certificate for effluent treatment plants (ETP).

The implementation of the sustainability policies is highly dependent on private workshops, briefing sessions and training. It focuses on the establishment of an understanding of sustainability performance. With regards to this, the corporate social responsibility manager commented,

"Time to time, we gather for our company's training and workshops standard, ... so we can easily inform our buyers about company's sustainability policy regarding ... What guidelines exist. This way, we tend to inform our buyers regarding strategic guidelines and of course inform our colleagues ... who are related with this department".

7.3.3.1 Implementation Challenge of Sustainable Supply Chain

The major problem faced is the sourcing of these sustainability materials as recommended by "Under Protection." For instance, fabric sourcing is one of the challenges. The supply chain general manager explained the importance of organic cotton,

"I am exceptionally persevering towards finding ... a new fabric that can supplant all the organic cotton ... We are utilising."

Case study 3 had failed to meet its commitment to the company's code of conduct in the year 2016 at Eid festival time. Withdrawal of the order by case

study 3 had the potential to cause significant job loss and to anti-sweatshop activists, it looked very much like an opportunistic attempt to minimise negative publicity associated with the international media story. Anti-sweatshop groups urged the top-level management team to stay at factory positions and work with the factory to improve conditions. The company management team also works for factory improvement in various efficient ways that could be cost-saving initiatives with sustainable development.

Case study 3 responded by claiming that its monitoring program had few workers stick about the festival bonus at the factory and it had been on probation at the time that the international media journalists conducted their interviews. Labour rights groups have asked the company to release the factory monitoring reports. The company provided a report within a short period to back up its story and protect the company's image. Corporate social responsibility director suggesting corporate responsibility activities,

“Our company did not have enough knowledge about ‘sustainability’ concept. Our global buyers guided us social and environmental information and various corporate responsibility activities ... which has an impact on the company’s awareness level. This concept is growing for health and safety security, waste management and climate issues in the workplace.”

As a result, this company defines stakeholders as partners in success and they remain committed to the cause by maximising stakeholder values. On the other hand, workers enjoy a high level of satisfaction and buyers get quality products that improve the sustainable supply chain. However, all stakeholders inside and

outside of the company's surroundings benefit from these in various ways. The company's board is divided into seven corporate committees such as health, environment, remuneration, cost-benefit, corporate issues and safety committee. These committee helps to achieve social, environmental and economic sustainability.

7.3.3.2 Mitigation of the Implementation Challenge

It should be noted, as operational improvements are made, that every organisation must be prepared to inform its staff. Therefore, until the workers are linked to the establishment, they can relax and easily operate. Thereafter, the garment industry is regarded by its gladly delighted purchasers as a production industry where commodity quality is measured. Therefore, in order to provide its purchasers with a premium commodity, the garment industry should be prepared and educated.

Over the past years, case study 3 has had a robust curve to the garment industry manufacturing. It has had a continuous focus on value addition and efficiency while maintaining quality. However, it has never related to its effort to attain a strong drive for excellence as well as efficiency. This has especially made a huge contribution towards the company reaching a new look and representing Bangladesh as a role model in the exporting country. The brand manager of the company summarised the way of service,

“The biggest competitive advantage of our buyers ... that we provide excellent service, good quality product ...And use in just in time method. Our greatest strengths are our productivity, capacity and efficiency ...

with offering low labour costs ... This opportunity generating our company's market share within the garment sector in Bangladesh....”

Also, case study 3 boasts of an equipped development and research centre which helps in innovations with the efforts of the design department of international brands that are regarded as leaders in world-class products. The brand manager commented about the capability,

“We are capable of accommodating the needs of ... the top-tier international premium brands. Upmarket retailers are already sourcing from Bangladesh....”

7.3.4 Implementation Finding

Case study 3 management provided the overall good performance to understand the meaning of sustainability implementation. The researcher received good feedback from research questions to ask the case study 3 management. Still, they had few gaps in understanding sustainability implementation like sustainability certificates in the economic aspect.

Table 21: Main finding of case study 3's implementation of sustainable supply chain

Factors	Social	Environment	Economic
Meaning of sustainability	√	√	√
Sustainability adoption	√	√	√
Sustainability certification	√	√	x
Sustainability policy	√	√	√
Sustainability management	√	√	√
Top-level management training on issues of sustainability	√	√	√
Stakeholders' engagements	√	√	x
Implementation scope of requirements of sustainability	√	√	√
Advocacy & awareness campaigns	√	√	x
Cross-functional integration	√	√	√
Potential changes to make this production system more sustainable	√	√	X
Code of conduct reflects in the organisation	√	X	X
A clear understanding of the capability of buyers	√	√	X
Approaches that are collaborative with buyers	√	√	X
Perceived sustainability of the production system	√	X	X
The equal significance of sustainability in the assessment	√	√	X

7.3.5 Sustainable Supply Chain Practice

The company has made itself an ultimate solution for fashion gallantry to the practice of development and research. It further gives itself an advantage over others from the fact. It is practising ethical labour and social standards since compliance have proved to be crucial for survival in this industry. The company compares its product qualities, adherence to regulations and facilities for

production with Turkey and China. The corporate social responsibility director had this to comment on the hi-tech facilities,

“We use hi-tech facilities which are environment friendly and good sound for workers ... We provided proper training for human resource skilled pool ... Which generates skilled workers.”

Furthermore, she emphasised her previous views,

“We are committed to the company’s corporate governance ... So, we use energy-savings machines and purify wastewater by using hi-tech plant.”

The sustainability development officer talked about corporate social responsibility,

“Sometimes, we cannot provide a full range of information to the buyers due to company restriction ... It is true as a developing country that we cannot maintain whole corporate social responsibility ... But most of the buyer’s prescription list has to follow.”

Buyers required that the information disclosed the need not to be selective and is necessary to include all important information and that is affecting the different groups of stakeholders, including, among other things, child labour, environment, corruption, health and safety. This disclosure of information is believed to help in increasing the accountability and transparency of the firm.

The corporate social responsibility director favoured the legal compliance principle in which organisations are asked to disclose their compliance with statutory provisions that exist that relate to environmental, ethical and social performance. The sustainability development officer consented to the

arrangement of a social balance sheet that shows their social capital at the start as well as at the end of a specific period.

Table 22: Finding of case study 3 which use sustainability implementation drivers

Indicators	Finding
Governance	Every year company published a sustainability report on the company's website and also showed in a comparative statement.
Corporate social responsibility	Case study 3 is more responsible for environmental issues; they used effluent treatment plants (ETP) and received the ISO 14001:2004.
Stakeholder	Case study 3 particular preference for these powerful stakeholders has a strong influence on the content of the report.
Transparency	The company has clear transparency improvement criteria, which is necessary to develop sustainability practices.
Supply chain network	It has multi-level networking such as reuse, recycling and sourcing.

7.3.6 Main Finding

Table 23: Case study 3 main finding of three sustainability dimensions

Indicators	Main finding
Social	<p>Working Conditions</p> <ul style="list-style-type: none"> • Health and safety, for instance, emergency, training, air ventilation systems PPE and sanitary facilities. • Salaries, for instance, prevailing wages or minimum wages in the industry. • Business operations law compliance • Sustainable procurement practices <p>Human Rights</p> <ul style="list-style-type: none"> • Prohibiting child labour • Prohibiting abuse and harassment • Prohibiting forced labour. • Monitoring job satisfaction
Environment	<ul style="list-style-type: none"> • Reduction of emissions and use of hazardous materials. • Minimisation of pollution and reduction of wastage • Monitoring of environmental performance. • Temperature control and adequate lighting.
Economic	<ul style="list-style-type: none"> • Productivity • Quality assurance • Competitive pressure

Based on case study 3, the section contains a findings summary from the top-level management comments and analysis. Case study 3 main findings indicate a strategic viewpoint, which is an increase in sustainability implementation and practices. Such finding has, in turn, also practices the support from top

management. At the same time, adopted implementation is not only the allocation of structure inside the organisation's management system but also the development of a practising system that apparently flows throughout the top management. This support explained the allocation of structures to implement consistent, sustainable practices. Also, the development of the implementation process among workers was enlisted as an enabler since it has allowed the organisation to expand the awareness concerning the relevance of sustainable practices as well as its proper implementation and monitoring.

7.4 Case Study 4 Background

In 1983, the chairman of case study 4 established the garment industry; 300 women and men worked under one roof at that time. The company has rapidly been growing up and it has gone through some hurdles and struggles to take shape into its current structure and size. Now, it can comfortably declare \$500 million in its total annual revenue. Currently, it has more than 25,000 workers, staff and other employees.

7.4.1 Flowchart of Company Production Position

For case study 4, the design of the products is provided by buyers, but fabric and accessories are depending on suppliers and buyer's agreement. In case study 4, the fabric is sourced from China and Sri Lanka nominated by the buyers and most of the accessories are resourced from the local market.

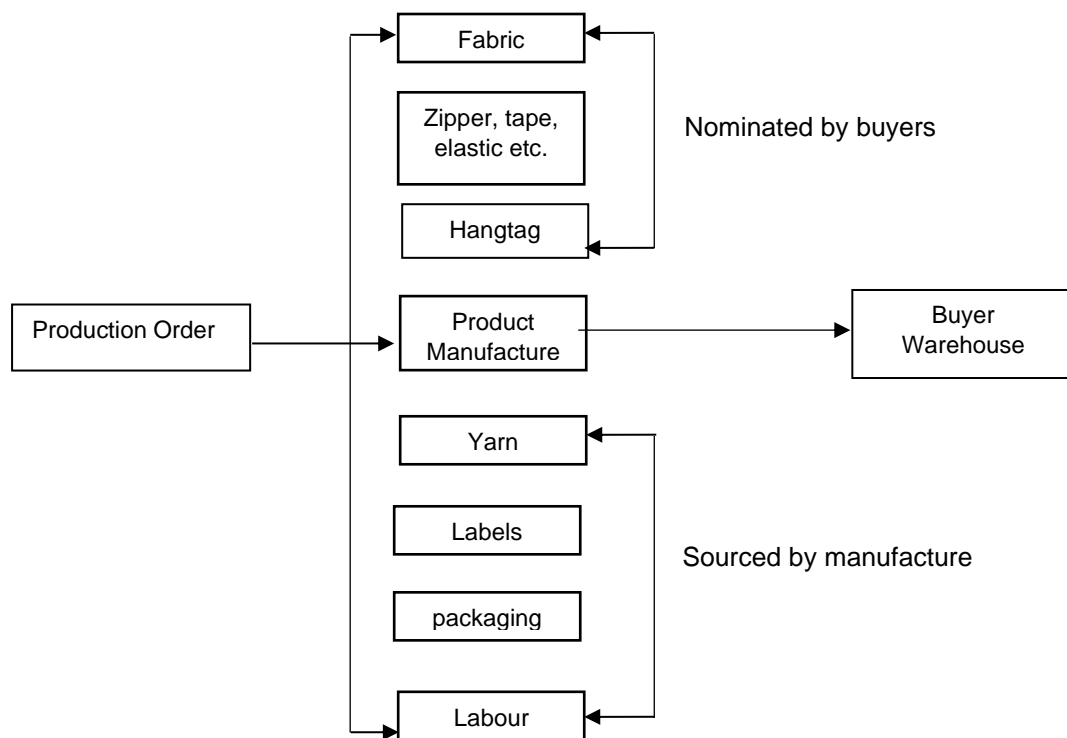


Figure 16: Supply chain diagram of case study 4

By the year 1990, case study 4 had grown to have eight floors of manufacturing where more than 7000 people worked to export woven and knit items into the USA. The difficulty was that their raw materials were 100% imported. The company has set up various manufacturing units and a packaging industry limited to provide support to the mother industry. Apart from these, the company has also established its embroidery, quilting and washing plants to meet the ever-growing needs of the market internationally. Besides the USA, which is the principal market, case study 4 has identified and explored various other markets over the world. For instance, it has exported its products such as jackets to Europe. The company has also received many awards, both internationally and locally, for example, the national export trophy of the year in 1985.

7.4.2 Addressing Three Sustainability Dimension

Case study 4 is itself a symbol of advancement and progress in the field of export. The focus behind this position is the combined efforts of owners and employees. The company believes in the timeliness and quality of the products. The company has different sub-departments, for example, washing, woven, jackets and knit, among others. As if they are not enough, the company still has its facilities and by the year 2009, case study 4 had become the leading manufacturer in south Asia as far as the knit sector.

The company attaches a lot of value to human capital and is continuously committed to developing, training and attracting more talents in the industry. There are invested in its potential employees by both global and local trainers. To keep itself on the global market with ease, case study 4 holds to set international compliance requirements. Also, case study 4 has taken a variety of social initiatives for the improvement of the workforce by making sure it goes beyond common requirements.

The human resource manager explained about age certificate,

“We do not recruit any under 18 and make sure by age certificate ... Our philosophy is children have to go to school ... it is not the age to enter the job markets ... It is better for them to develop themselves.”

Case study 4 works with one of the third-party inspection teams that emphasise sustainability and collaboration with global buyers. Some remarks were made as regards this development by the sustainability development officer. He also summarises the policy,

“There are outstanding policies which we set and we have an environmental policy... which sets the ambition of our company around all the productions ... Hence, we have been studying our production for approximately three years.”

Case study 4 also aids in the reduction of the carbon footprint that is required in the transportation of these materials all over the world. This, therefore, offers an essential value to both buyers and suppliers. The supply chain general manager's approach for the environment,

“We have also balanced all our productions so that we can be maximally carbon-neutral... But because we have not been certified ... it cannot be announced.”

7.4.3 Implementation of Sustainable Supply Chain Indicator

Case study 4 believes in transparency and understands stakeholder behaviour. It breeds an independent and corporate culture of governance for professionals. With such a team of professionals in the enthusiastic and control board, case study 4 is still focused on accepting further challenges of diversity and growth to enhance itself. Case study 4 has to increase revenue generation as well as increasing the overall value for associates, employees, government and global network.

The human resource manager said, ‘make sure workers are taken good care of.’ This is mainly achieved by letting them be a part of the decision-making process. This especially helps them in developing a sense of being appropriate

and inclusive instead of engaging a business model that focuses on producing a variety of products. In the words of the supply chain general manager,

“I prefer a different strategy, which is to specialise in one single product ... And to keep climbing up the value chain.”

7.4.3.1 Implementation Challenge of Sustainable Supply Chain

Case study 4 takes new actions and challenges keenly coupled with the economic craving it is enjoying in Bangladesh. The company involves itself with a number of activities for workers and stakeholders in society. It sincerely believes in the development of the communities they are operating in and thus has taken an extra mile for the establishment of non-profit institutions to offer education. The company had the interest to make sure the institutes maintain high-quality education. That implementation target needs extra finance for the company.

Case study 4 garment products waste recycling is one of the top priorities in the sustainable supply chain. Storage is a good way of handling waste as well as saving operation costs. Sustainable development officer agreed about waste management,

“Most of the time we follow the waste management practice ... But this is not any systematic way such as reuse or recycle system ... Still it is inside the garbage bin, just that we manage.”

Furthermore, case study 4 makes donations for charity on a regular basis. It provides funds to the government when natural calamities hit. Also, the company makes many contributions towards rehabilitation and reliefs all over

Bangladesh. The company's management is comprised of a highly competent board with more than 30 years of experience in managing a wide variety of operations and initiatives, including international.

7.4.3.2 Mitigation of the Implementation Challenge

Case study 4 has taken few steps to develop and implement in the strategic areas to mitigate the implementation challenges like waste management, security job facility, eco-friendly facility in the factory area and climate change adaptation measures. Although, the waste management and climate change strategy were limited in case study 4. On the other hand, job security is essential and adapted a new strategy for secured jobs like job insurance, provident fund, etc. Those steps will have fundamental issues for moral and ethical. Good governance measures will have been integrated based on the particular belief system of the case study 4. Earlier researchers (Chanlat *et al.*, 2013) discussed that the integrated activity shows the industrial view of vast opportunity as an adaptation option, which is a strict measure beyond social and cultural solutions to sustainable supply chain impacts. The outcome of the integration of such a component is to mitigate the implementation challenge, but this attachment is symbolic of the potential activities to promote certain values or beliefs in defining the acceptable or desirable adaptation options for communities.

7.4.4 Implementation Finding

Case study 4 responders criticise that buyer's pressure to adopt sustainability implementation, but they also mention shipment time limit. Respondents further mentioned that our management team implements the highest level of

sustainability aspect, especially social and environmental aspect, rather than economic aspect.

Table 24: Main finding of case study 4's implementation of sustainable supply chain

Factors	Social	Environment	Economic
Meaning of sustainability	√	√	√
Sustainability adoption	√	√	X
Sustainability certification	√	X	X
Sustainability policy	√	X	X
Sustainability management	√	√	X
Top-level management training on issues of sustainability	√	√	X
Stakeholders' engagements	√	√	X
Implementation scope of requirements of sustainability	√	√	X
Advocacy & awareness campaigns	√	√	X
Cross-functional integration	√	X	X
Potential changes to make this production system more sustainable	√	√	X
Code of conduct reflects in the organisation	√	√	X
A clear understanding of the capability of buyers	√	√	√
Approaches that are collaborative with buyers	√	√	X
Perceived sustainability of the production system	√	√	X
The equal significance of sustainability in the assessment	√	X	X

7.4.5 Sustainable Supply Chain Practice

Good governance is very important to ensure sustainability practices.

Government must provide support to the garment industry to go through

sustainable friendly operations. Case study 4 argued that basic practices are performed in the sustainable supply chain. Those practices are related to waste management, using eco-friendly chemicals and energy saving. Case study 4 started with the slightly sustainable practices in their factory. It could be reducing the operation impacts on the environment. Only the basic practices such as waste rubbish management (e.g., waste products) and the chemicals use reduction in the environmentally friendly factory. The supply chain general manager for case study 4 said that we could practice at this moment in saving electricity. The factory's temperature is more than 32⁰ C in the afternoon, but the factory does not use any air condition or fan but opens most of the windows. All utilities will be shut down at the end of the shifts.

The sustainability development officer believed that implementing sustainable practices was one way to protect the environment and ensure that environmental practices were among the factory's top three priorities. To substantiate his assertion, the overwhelming majority of garment industry executives agreed to create an environmental management system (EMS) in their industry. Additionally, the sustainability planning officer accepted unequivocally that ecological protection is critical to their lives and the textile industry.

The human resources manager decided that environmental responsibility should be incorporated into their preparation and promote employee participation in the EMS's establishment. Rewarding workers for their contributions and suggestions for improving practices and incorporating environmental knowledge into training programs. Surprisingly, senior

procurement officers were adamant about linking or providing EMS training to employees, encouraging and rewarding their efforts to improve practices.

Sustainability is a current concern in the garment industry. As a result, others, especially stakeholders and competitors, will notice any innovation or modification of existing practices. The benefits, utility and anticipated benefits of practising would persuade other operators to embrace them to remain competitive in the industry.

The case 4 supply chain general manager describes implementation strategy,

“We understand terms of sustainability and have a clear goal.”

She also points out for company strategy,

“We are implementing sustainability strategy to the whole management team ... And encourage our colleagues to understand, what the meaning of sustainability is ... Why we need and our mission.”

The sustainability model described management as a significant factor affecting the intention of the garment industry to implement sustainable practices. The management is concerned about the effect of industry operations on the local environment and ecosystem. Additionally, they promote creative techniques in their outputs, such as introducing new practices when they are confident in their effectiveness. The garment industry, according to this report, should take the lead and start adopting sustainable practices. Indeed, management's decision to follow sustainable practices will undoubtedly affect the garment industry's overall performance.

Table 25: Finding of case study 4 which use sustainability implementation drivers

Indicators	Finding
Governance	The company established social governance, but environmental and economic governance has been missed.
Corporate social responsibility	The company is trying to improve its social and environmental responsibility.
Stakeholder	The company's stakeholders are more concerned about the company's performance and reputation.
Transparency	The company is more transparent about young employees; without an age certificate, it does not recruit any employees.
Supply chain network	It is making a good supply chain network with Europe.

7.4.6 Main Finding

Table 26: Case study 4 main finding of three sustainability dimensions

Indicators	Main finding
Social	Working Conditions <ul style="list-style-type: none"> • Health and safety, air ventilation systems PPE and sanitary facilities. • Salaries, for instance, prevailing wages or minimum wages in the industry. Human Rights <ul style="list-style-type: none"> • Prohibiting child labour. • Prohibiting force works. • Prohibiting abuse and harassment.
Environment	<ul style="list-style-type: none"> • Reduction of hazardous materials. • Reduction of wastage.
Economic	<ul style="list-style-type: none"> • Productivity. • Cost reduction. • Quality assurance.

Case study 4 has allowed the organisation to allocate physical and human resources in order to implement sustainable practices throughout the company. Additionally, the company is related to reduce environmental emissions, cost reduction and buyer's satisfaction. These sustainable practices are considered for factories, employees and the local area. On the other hand, the improvement of available transparency and governance concerning sustainable practices for the garment industry has become external support for case study 4 since the company has been able to utilise tools and inputs that are less harmful to the environment and at the same time do not indicate a huge investment.

7.5 Case Study 5 Background

Since its establishment in 1984, case study 5 has achieved specific experience in both manufacturing and designing a variety of apparel items. The company produces high-quality products and it has grown to be one of the leading exporters in Bangladesh. The company manufactures Polo knit, shirt, bottom, sportswear and sweater compliance based on several requirements. The major buyers of products from case study 5 include H&M, JCPenny, Wal-mart, GAP, PVH, C&A and Sears. Paired with the production, the company has developed backward facility linkage as its textile with facilities for dying. The exports of the garment product are increasing year to year. However, there are many problems like power shortages, political instability and labour unrest, among others. Even though the company has 30 years of experience in dealing with these situations, a flexible approach that is formal in mitigating the weaknesses should be developed.

7.5.1 Flowchart of Company Production Position

The company has its own strategy due to backward linkage to its textile industry. Case study 5 offers sourcing their fabric to buyers from their own company. If buyers accept their proposal, case study 5 offers a lower price for production. However, in some cases, buyers import fabric from Indonesia, Korea and China. Case study 5 source accessories from outside Bangladesh, but packaging material is sourced from Bangladesh.

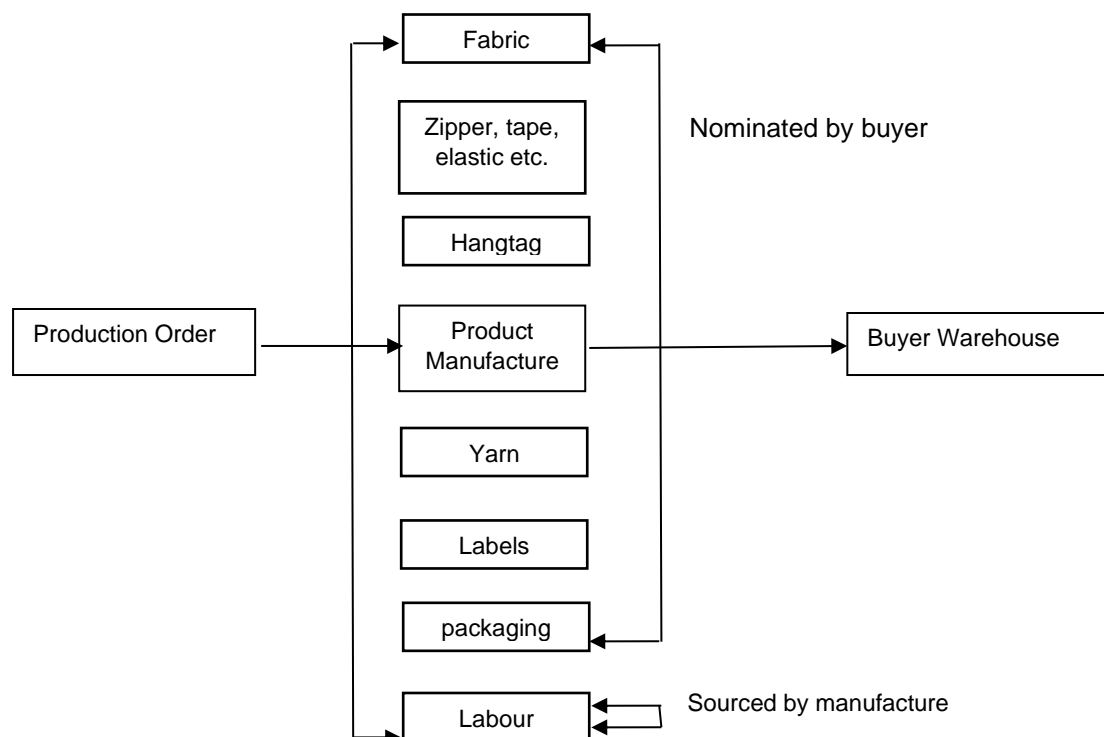


Figure 17: Supply chain diagram of case study 5

7.5.2 Addressing Three Sustainability Dimension

The sustainable issues were ranked in terms of awareness. However, case study 5 was aware to some degree of the exploitation of garment industry workers, “slave labour,” “child labour,” “unsafe conditions.” Three sustainability

dimensions issues are mentioned in case study 5 and the researcher tries to find out the existing sustainability aspect. However, case study 5's human resource manager acknowledged the history of the garment industry and the historic low pay and poor conditions of garment factories. The human resource manager said,

“When our buyers ask about ethical awareness, we have to produce different inspection reports and certification ... Sometimes, buyers pay for improvement cost rather than compensation after any incidents and they say ... could be making earlier prevention.”

The sustainability development officer also attended the human resource function. He endorsed the same opinions in a separate view,

“We are taking care of our workers as the biggest asset is our workforce ... which means we have to look after the workforce ... We have to give them priority over others.”

During the early period, the chairman recognised the fact that employees from rural areas were living in poverty borderline. They did not afford breakfast before reporting to work. They got tired quickly and therefore were not able to exploit their potential. This made him get breakfast prepared for them before their shift started daily as well as offering them snacks before overtime in the evening.

While trying to interview some respondents in the supply chain department, several issues appeared (e.g., late payment, extra work without pay). It was difficult to access sustainability criteria analysis. Case study 5 did not disclose the working condition (e.g., building infrastructure) where a lot of informal

subcontracting was involved. Sometimes, 1st tier suppliers inspect the working condition of case study 5.

There was little awareness of the waste issue within case study 5. The supply chain manager said that sometimes our company does not care about waste and does not have any idea about unwanted products and unsold products. She also explained,

“Increase in compliance with social and environmental requirements may be as a result of financial increase ... for example, compensation of realisations costs through increased prices for products ... Such an incentive mechanism is difficult to realise ... because price pressure is prevalent in suppliers and buyers’ relationships.”

7.5.3 Implementation of Sustainable Supply Chain Indicator

A sustainable supply chain concerned about implementation approach on supply chain activities enables an organisation to gain a competitive advantage among competitors and create a brand reputation in front of society and customers. The brand manager added that,

“The international buyers imposed to suppliers to certain quality product requirements which are related ... with social and environmental awareness and they follow up our responsibility.”

Generally, the company’s sustainability activities help to answer the issues relating to health and safety, ethics, employee education, justice, community education, child labour, labour rights as well as gender discrimination. Moreover, case study 5 sustainability development officer mentioned that,

“When we work in the subcontracting system, we do not do any compliance check or monitoring by ourselves. However, if we work as a first-tier supplier ... We have to inspect by a specialised third-party audit team ... And buyers monitoring pre-assessments ... And factory visits are important to gain buyers’ impression and maintain an effective coordinating function.

Workers are determined by various factors such as skills, ability and the type of work. The wage rate is fixed by the agreement between the Labour Unions and employers. Moreover, the human resources manager expressed that,

“Every garment industry has their ... own wage policy for their workers ... And their wage rate depends on the experience and what they are doing.”

7.5.3.1 Implementation Challenge of Sustainable Supply Chain

Case study 5 supply chain manager argues that sometimes we work in under pressure and we notice that few workers complain about extra pressure, we could not handle this situation due to on-time shipment, especially in subcontracting work, it is true that,

“Before buyers’ visit, we work more than ... 16 hours, but during buyers visiting time, we have to work standard shift (8 hours shift) ... In busy times, the supervisors hurled verbal abuses at the workers to make them work faster ... And that the abuses increased before buyers visit.”

The Supply chain manager argues that,

“Buyers are inspected for assurance in compliance with environmental and social requirements. Even if suppliers build up their own management systems ... conduct their own corporate social responsibility measures and join domestic or international corporate social responsibility initiatives, Chinese suppliers still have to pass audits ... Self-monitoring efforts such as CSR reports ... are not accepted by buyers. Often suppliers have to pay for inspection fees by themselves.”

7.5.3.2 Mitigation of the Implementation Challenge

Sustainability implementation brings potential conflicts between case study 5's sustainability practices and current policy. Therefore, the implementation challenge does not support the current policy. However, case study 5 offers the workers' priority rights, corporate social responsibility and waste management to mitigate implementation challenges with their aim to minimising carbon production to address the production incentives. The human resource manager argued that we have an implemented environmental management system; we already have a designed process that allows us to accompany our buyers' orders during their internal and external inspection processes. We also gather all the right and the necessary documentation that is needed for the certifications.

The implementation of a sustainable supply chain helped case study 5 to mitigate potential risks related to the conduct of its employees. The local garment industry mitigates the implementation challenge by contractual

agreements with the local authority. The study focuses on the poor adherence to laws, inadequate monitoring from the government agency and the underuse of ETPs by firms. These treatment plants for wastewater are necessary facilities for treating effluents at the factory before being discharged into the environment. The plants help in the reduction of the Biological Oxygen Demand (BOD) as well as maintaining healthy water.

Garment industry waste has already polluted most of the rivers around Dhaka city. While the production is on the increase daily, ETPs performance has not been increasing. For instance, buyers struggle to bring down the prices, but factory owners are continually looking for ways of reducing costs.

7.5.4 Implementation Finding

Case study 5 responders mentioned that shortage of skill management team is one the major's problem to sustainability implementation. However, most of the management team understood the social aspect, but few environmental terms were understood. Moreover, the economic aspect is completely skipped in the management team.

Table 27: Main finding of case study 5's implementation of sustainable supply chain

Factors	Social	Environment	Economic
Meaning of sustainability	√	√	√
Sustainability adoption	√	√	X
Sustainability certification	X	X	X
Sustainability policy	√	√	X
Sustainability management	√	X	X
Top-level management training on issues of sustainability	√	X	X
Stakeholders' engagements	√	X	X
Implementation scope of requirements of sustainability	√	X	X
Advocacy & awareness campaigns	√	X	X
Cross-functional integration	X	X	X
Potential changes to make this production system more sustainable	X	X	X
Code of conduct reflects in the organisation	√	X	X
A clear understanding of the capability of buyers	√	√	X
Approaches that are collaborative with buyers	√	X	X
Perceived sustainability of the production system	X	X	X
The equal significance of sustainability in the assessment	X	X	X

7.5.5 Sustainable Supply Chain Practice

The corporate social responsibility consultant agreed on certain conditions, reliability and transparency,

“Still, workers’ rights are not much implemented in our factory... therefore those workers are disappointed to make complaints and management do not disclose this information ... This activity encourages poor transparency and governance. Good news, this year we set up

workers helpline ... they can complain about any discrimination and disclose it in management and employees meeting.”

The workplaces and factories that are subcontracted are not formally part of the buyer's supply chain and therefore, compliance with social and environmental audits does not take place there. Case study 5 factory workplaces may be informal and unregistered organisations. There is no government labour inspections team at all. Therefore, the risk of incorporating into a retailer's supply chain or a brand with workplaces with a substandard condition.

Furthermore, the officer went ahead to describe the contents of such a disclosure. Although he gave no explicit elaborations on the point, he gave a hint on the broad issues that he expects them to be disclosed,

“We are more concerned about the social and environmental issues and both issues are related... We are very concerned about the implementation challenges because of lack of staff training, lack sustainability knowledge ... If we mitigate this problem, it will be more sufficient.”

According to a human resource manager, the factor workers' rights and voices are the main issues,

“The open culture where allocation does not become a problem to ... explain one's discontentment gives a sense of respect and belonging.”

It also provides room for decision-making and is also responsible for the morale that drives work effectively. The human resource manager agrees that during the reporting procedure of social aspect, various principles need to be followed, like as worker's right, relevance and full disclosure. Nowadays, buyers need full

disclosure and it requires that the process of disclosure be inclusive of all relevant information and material relating to the performance of social and environmental sustainability.

In analysing the opinions of case study 5, the brand manager said that it is credible to note that our aims to develop a sustainable society and coordinate to organise an employee's children's fund to encourage their children to go to school and provide free schoolbooks. In addition, by opening and expanding the office building, where the company used for child-care, created around ten new positions for baby care people. This company also provides free meals and gifts once a year to all workers.

Table 28: Main finding case study 5 which uses sustainability implementation drivers

Indicators	Main finding
Governance	Some of the aspects, the company fails to follow good governance due to work in 1 st tier and subcontracting system at the same time.
Corporate social responsibility	The company adopted social and environmental responsibility when they work as 1 st tier supplier, but subcontract work does not follow any responsibility.
Stakeholder	The company's stakeholders could be engaging with only social sustainability; they are absent in environmental and economic issues.
Transparency	Due to increased demand for social and environmental accountability, case study 5 required more transparency, following their six basic annotated strategic pillars.
Supply chain network	The company does not have a good supply chain connection as the company depends on other 1 st tier suppliers' orders.

7.5.6 Main Finding

Table 29: Case study 5 main finding of three sustainability dimensions

Indicators	Main finding
Social	Working Conditions <ul style="list-style-type: none"> • Health and safety, for instance, training and sanitary facilities. • Salaries, for instance, prevailing wages or minimum wages in the industry. • Sustainable procurement practices Human Rights <ul style="list-style-type: none"> • Prohibiting child labour. • Prohibiting abuse and harassment. • Prohibiting forced labour.
Environment	<ul style="list-style-type: none"> • Reduction of hazardous materials. • Reduction of wastage. • Monitoring of environmental performance.
Economic	<ul style="list-style-type: none"> • Cost reduction • Quality assurance

Sustainability-related governance does not work in case study 5 since the company solely handles the production obtained from its garment factory, which has a management system that oversees sustainable practices. There was also a report on the high costs that entail the implementation of sustainable practices and the certification of sustainability standards, as well as too much market competition in the global market that does not allow to pay compensation. This unfavourable price condition is apparently related to the buyers' lack of awareness of how the demand for cheap products affects the purchase price

set in the market and consequently the access to financial resources for garment manufacturers.

7.6 Case Study 6 Background

Case study 6 is regarded as the only subcontracting factory in this study. This garment has been chosen to differentiate between multinational, local and subcontracting ready-made garment industry in Bangladesh. This factory started in 1994. In the USA, Canada and Europe, it is a big deal and reputation to offer a new subcontracting order. Case study 6 makes ready-made garments for renowned buyers such as Target, Vanity fair, K-Mart, Wal-Mart and Old Navy, among others. The company works in collaboration with famous local 1st tier suppliers that have functional garments such as Men's T-shirts, Knit dresses, sleepwear, intimate products, among others, at a fair price. This company has several departments, especially subcontracting works that look after the whole business. Therefore, all departments are an integral part of the smooth running of the organisation.

7.6.1 Flowchart of Company Production Position

The company is small with a few specialised activities and does not usually do core activities but only focuses on support activities. The organisation, therefore, works behind the 1st tier suppliers in progressing the final goal of manufacturing. Consequently, several sewing factories depend entirely on subcontracted orders since they do not have enough marketing and managerial capacity that corresponds and finishes an order directly. Such factories, in the common picture, are managed poorly in the sense that workers are frequently

paid late or unpaid. In some cases, workers are paid on an hourly or unit basis as deemed suitable to the company.

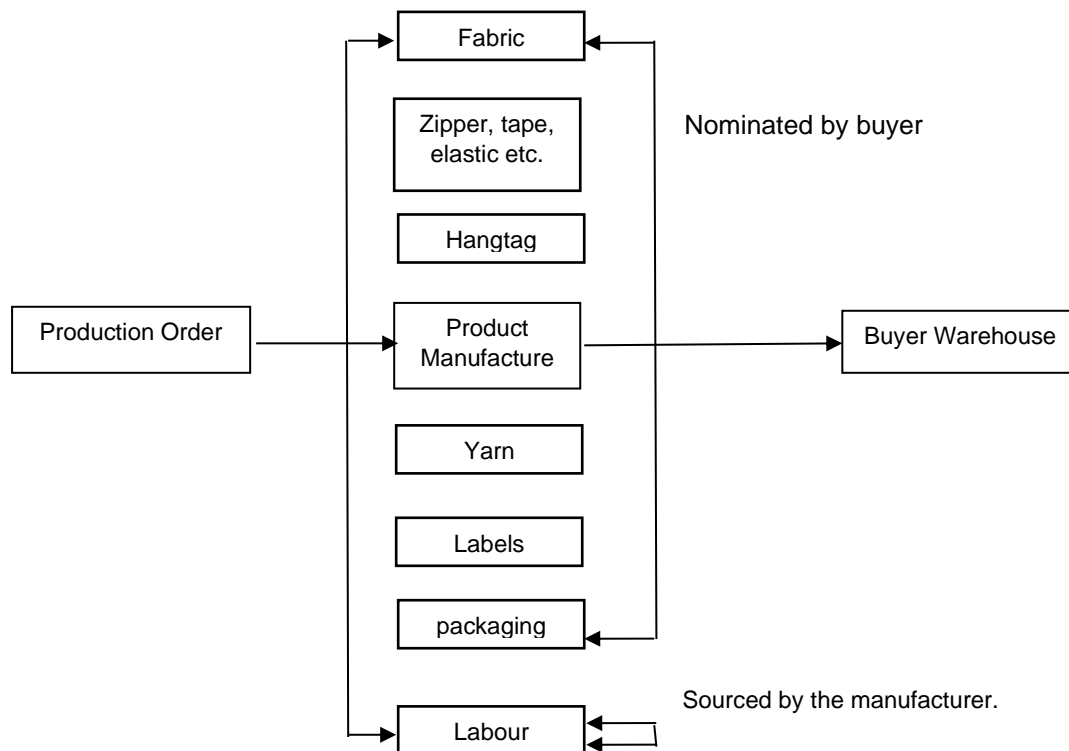


Figure 18: Supply chain diagram of case study 6

Usually, such organisations lack environmental and social compliances. Subcontract company only produces garment products. The diagram above shows that workers are only sourced by the manufacturer and the remaining materials are nominated by buyers.

7.6.2 Addressing Three Sustainability Dimension

Possessing an optimal production strategy shows that a company is aware of increased pressure on 1st tier suppliers, which they are responsible for, especially when they prioritise fast turnaround and low cost over the likelihood

of workers. The management team has low awareness about sustainability and most of the respondents avoided sustainability questions and were unwilling to provide structured responses. The starting point of discussion with the supply chain manager about social sustainability was that he understood the meaning of the question like paid work for society. Another question of waste management also was misunderstood. This concept was adapted for reuse or recycling. In addition, waste management is defined as final products to make an additional material that could be sold at a low price in the local market or recycled for new products.

Management is subjected to stress while at work. Most of them think their salaries are not motivating or fair enough. Improvement should be made to make workers understand how their salaries are calculated. For instance, one of the respondents agreed that he does not know how salaries are arrived at. Also, the human resource manager agreed to workers payment,

“He has no full awareness about how their wages are calculated due to avoiding overtime payment ... Leave and break arrangements is one of the things supervisors and other employees expect to see changes ... They especially said they had encountered difficulties while requesting for leaves and breaks....”

Case study 6 is rented a six-floor old building and working without a fire building safety inspection report. It was also overpopulated. Further, the researcher has asked about individual social sustainability aspects such as child labour, workforce discrimination, organic production, corporate social responsibility, code of workers ethics, etc. Case study 6 respondents said that we are working

for 1st tier suppliers. Therefore, we are not responsible for sustainability issues. On the other hand, case study 6 is introducing trainees and apprenticeships limited reviewing sustainable supply chain knowledge, but they agreed to collaborate information sharing with 1st tier suppliers to enhancing efficiency and maintaining a high standard for global buyers' attraction.

7.6.3 Implementation of Sustainable Supply Chain Indicator

The evolution of a complicated global subcontracting relationship makes a lack of control and visibility of issues regarding ethics considering the product in a sustainable supply chain. Irrespective of the development of an ethical code of conduct and audit processes, the implementation of social aspects is still questioning the effectiveness of the company as much as complexity still exists in the sustainable supply chain. As a result, competitive challenges rise to buyers and reduce the cost as well as the purchase risk. Although the cost reduction makes an increase in the frequent shipment, there is a need to establish a connection between corporate social responsibility implementation and the concern for ethical problems. The information provided by case study 6 regarding the facilities and workers' demographics explains these factors by emphasising transparency and accountability. This progression allows more buyers' support and serves as a means of awareness as regards production.

7.6.3.1 Implementation Challenge of Sustainable Supply Chain

As far as workers' personal lives are considered, building safety and workers' rights are the main challenges in case study 6. The human resource officer agreed,

“Productivity improved, but they are sometimes needed to perform their work once again ... She also comments that their team sometimes needs to duplicate their work. This was especially noticed in the sewing department ... And for female workers.”

Case study 6 has been approved by Process Safety Management (PSM) and adopted the safety and management schemes. Still, they could not implement it in the factory. The sustainable development manager said that they had some implementation problems and she pointed out,

“When our buyers come in for factory visit, we provide gloves, marks and ID cards to our workers, and after visiting, we take off those materials from our workers.”

Some concerns related to gender-based violence at the workplace and supervisors are the immediate people that workers relay their feedback to. Supervisors communicate with workers about the problems and mitigate them within a short period. Although workers are willing to say their opinions, sometimes workers fear the consequences of doing it and whether their feedback will be addressed. The human resources manager explained,

“Our buyers are always aware of factory-related matters.”

According to the research and development manager about factory standard,

“It is not news that most western buyers have standards... If we wish to adopt all the standards, we might as well stay at home ... Because production will not take place. Implementing production with a code of conduct is not feasible; hence it becomes impossible sometimes.”

7.6.3.2 Mitigation of the Implementation Challenge

According to the sustainable development manager, we communicated with one of our 1st tier suppliers regarding health and safety issues and compliance certification without factory owner consent. 1st tier supplier promised us,

“We assured that there is no need for compliance certification for buyers... We advanced in fulfilling the contract ... When the buyers noticed this situation, they cancelled their orders without any settlement.”

However, case study 6 introduced a new code of conduct about human rights and adheres strictly to leading international processes that dictate freedom of involvement, protection of fundamental human rights, freedom of union, prohibition of child labour, or forced labour. The company also possesses rigid and well-explained protocols and processes that ensure the progress of sustainability. But it is not continuous at all times. The human resource manager said,

“Sometimes, we instruct our employees regarding not ... to say anything negative expression in the front of buyers ... Which does not affect our factory.”

Adopting this approach in manufacturing its products is mostly under a commission basis and 1st tier suppliers to terminate the business's ability without third-party certification. Case study 6 is regarded that our company has adopted an encouraging structural scheme which allows for a stable production strategy by being responsible for buyers'. Case study 6 pays the average and minimum wage rate for the company's workers and ensures that the labour

meets the living wage when analysing its costing formula. The supply chain manager explained the control process,

“For us, as a small company ... we would be misguided when we produce in garment products ... because we cannot control the supply chain in Bangladesh....”

The company monitors for all possible improvements in the operations in the supply chain. Way of the implementation responsibility monitoring by management. Long-term obligations to production strategies of case study 6 were duly explained in the book “The Responsible Company,” written by the owner and founder of Case study 6. This book explains the 20 years of experience of the company and how it has managed the supply chain.

7.6.4 Implementation Finding

Case study 6 responders acknowledged that their factory does not follow the full range of sustainability implementation processes. There is a lack of understating sustainability terms of technical skills. However, responders also discussed with the researcher about sustainability implementation terms. They said that first-tier suppliers make sure to follow the minimum standard of social aspects.

Table 30: Main finding of case study 6's implementation of sustainable supply chain

Factors	Social	Environment	Economic
Meaning of sustainability	√	√	√
Sustainability adoption	√	X	X
Sustainability certification	X	X	X
Sustainability policy	X	X	X
Sustainability management	X	X	X
Top-level management training on issues of sustainability	√	X	X
Stakeholders' engagements	√	X	X
Implementation scope of requirements of sustainability	√	X	X
Advocacy & awareness campaigns	√	X	X
Cross-functional integration	√	X	X
Potential changes to make this production system more sustainable	X	X	X
Code of conduct reflects in the organisation	√	X	X
A clear understanding of the capability of buyers	√	X	X
Approaches that are collaborative with buyers	√	X	X
Perceived sustainability of the production system	√	X	X
The equal significance of sustainability in the assessment	X	X	X

7.6.5 Sustainable Supply Chain Practice

Case study 6 can demonstrate their commitment to being accountable to the rights of workers in their supply chain by publishing buyers' lists. The human resource manager noted the importance of human resources in such an industry that is labour intensive for purposes of continuation of their business. This was to influence the structure of the organisation. The human resource

manager followed the function as the head, rather than production, quality and marketing departments. He said, as a human resource manager,

“I understand that the most suitable thing is human and their resources ... Being the head of this department, in running a successful operation ... All I have to do is to give precedence to people because without them ... There are no such things as quality... production capacity or factory.”

According to the supply chain manager,

“First-tier suppliers expert team run ... the workshops for sustainability course while our senior team gathers knowledge and collaboration to motivate our colleagues ... Those collaborations and experience are needed in regard to sustainability practices as a subcontractor.”

The research and development manager said that,

“First-tier suppliers’ initiate training and awareness-raising workshops for our factory ... This training utilises previous general findings of our factory assessments ... And focuses on the international management systems. The training workshops further illustrate the underlying business case for sustainability.”

One way to overcome this barrier is by collaborating with other brands that have a bigger organisational size. Through this means, a company obtains more capabilities to enforce planned sustainability activities. The Supply chain manager says,

“Without collaboration ... sustainability implementation would be quite impossible as a small company ... It is very important to collaborate with other branding companies....” .

Table 31: Finding of case study 6 which uses sustainability implementation drivers

Indicators	Finding
Governance	The company does not care about governance due to work for 1 st tier suppliers. They said it is 1 st tier supplier's responsibility.
Corporate social responsibility	Apart from worker wages, they do not care about any social or environmental responsibility.
Stakeholder	Case study 6 is not interested in discharging accountability through the report to a broad range of stakeholder groups.
Transparency	The company concealed legislation, did not disclose buyers' monitoring and pay gap between men and women.
Supply chain network	This company has only a domestic supply chain network.

7.6.6 Main Finding

Table 32: Case study 6 main finding of three sustainability dimensions

Indicators	Main finding
Social	Working Conditions <ul style="list-style-type: none"> • Health and safety, for instance and sanitary facilities • Try to follow the minimum wages in the industry. Human Rights <ul style="list-style-type: none"> • Prohibiting child labour • Prohibiting abuse and harassment
Environment	<ul style="list-style-type: none"> • Reduction of emissions and use of hazardous materials. • Minimisation of pollution and reduction of waste
Economic	<ul style="list-style-type: none"> • Quality assurance

The company's sustainability-related governance does not involve working with garment factories. Since the company only manages the production obtained from a subcontracting system, which has a management system that manages sustainable practices based on the figures set by the buyers, it is important to

mention that only 1st tier suppliers are part of a direct request from the company's clients.

On the other side, lack of government and international agency incentives and support concerning the understanding of the applicable local laws and regulations have also hindered the adoption of sustainable practices for case study 6. Also, the existence of suppliers who fail to comply with sustainable practices also negatively affects the sustainable performance of case study 6 throughout its corresponding supply chain.

Chapter 8. Cross-Case Study

Cross-case study will help to identify the differences and similarities among the case study. It shows the relationship between the implementation and practice. Six case studies have been justifying the integration of sustainability in their policy and corporate strategy. Therefore, it is important to explore challenges and gaps analysis so that recommendations can be made to them and also how they could counter these challenges (Barratt *et al.*, 2011). However, good facilitates (e.g., canteen) and compliance elements (e.g., environmental policy notes) are absent in the implementation and practice in the sustainable supply chain within some case studies.

8.1 Cross Case Analysis

Cross-case analysis involves the interpretation of the findings of each case analysis using the conceptual frameworks (Barratt *et al.*, 2011). This means that almost all the six case studies consider the implementation and practices significantly for a sustainable supply chain. Most of the case studies discuss social and environmental aspects rather than economic aspects. Another important analysis of this study is about the level of implementation of economic sustainability practices. The social sustainability implementation is the highest practice such as health and safety, minimum wages, child labour, abuse, and harassment. On the other hand, environmental sustainability implementation is in the second position to practicing such as mitigation of waste disposal and reducing the consumption of hazard and toxic materials.

The case study 1 responders provide the answer in reflecting the influence of social sustainability practices. The study provides the highest priority in factory temperature at environment aspect, but case study 6 ignores temperature control in the factory. This measurement is followed by the questionnaire and observation of quality work and management efficiency. On the other hand, case study 4 is less concerned about its corporate social responsibility.

However, case studies 1 and 2 have introduced inspiring proposals for sustainability in their processes, while case studies 3 and 4 started this process a few years ago. All of them have developed a structure for implementation and planning of the activities for sustainability as well as monitoring them on a daily basis. The researcher refers to the mechanism behind finding out sustainability modification in the supply chain. On the other hand, case study 6 does not consider taking feedback, workers' training and timely payments as part of strategies for sustainable supply chain concept. Moreover, case studies 1 and 2 had defined their code of conduct and implemented the inspection system at factory compliance. Most of the issues have been clearly addressed in case study 1 and case study 2. These two cases address issues including ethics, gender discrimination, equity bonded, child labour, health and safety, education, wages, and social problems. Case studies 3 and 4 are also concerned with gender discrimination, bonded and child labour, diversity of the workforce, health, safety and ethical issues to some extent. However, case studies 5 and 6 focus on different activities measured on the needs of 1st tier suppliers or respective buyers. Particularly, case study 5 focuses on addressing issues such as working conditions as well as bargaining collectively in a limited number of plants due to the differences in their social challenges and many

limitations from factory owners. Case study 4 stays on the social issues that arise at places of work and also outside the factory.

Case studies 1 and 2 confirm that the international community includes the European Union that has played a crucial role in putting pressure on the global brands to be socially responsible as well as highlighting their influential roles. Thus, global buyers focus on avoiding any spotlight that is negative and harsh criticism from the media since this threatens their image. Hence, they require building code certifications as a matter of safeguarding their organisation (Islam and Islam, 2011). Consequently, global buyers will exert these pressures on the sourcing intermediary and hence to their supplier base. The case 1 and 2 responders said that there is more pressure from global media due to comparison with other country's quality products (e.g., China, Taiwan). On the other hand, case studies 5 and 6 work as subcontractor bases and their responders said most of the time that they did not care for the brand image because 1st tier suppliers are responsible for sustainability issues. They also said 1st tier supply provides production order and material, so their responsibility only completed their work.

Some of the responders said that the measure and reporting of the organisation are available for stakeholders. It also provides more guidance when it is publicly available in case studies 1 and 2. On the other hand, responders of case study 5 and case study 6 said that the organisation does not have proper guidelines for implementation and practising policy to identify the supplier assessment criteria and that is still a challenge for the organisation. This provides one possible explanation for why the case study has chosen to develop a separate

sustainable supplier selection model rather than integrating the sustainable supply chain criteria directly into the existing social, environmental and economic supplier selection criteria. Furthermore, the consultations with the internal experts in the case study pointed to the need to align the case study's strategic priorities and capabilities. However, the scarcity of social indicators posed major challenges to such alignment. Table 33 shows the cross-case study analysis for sustainability practices.

Table 33: Cross case study analysis sustainability practice

Factors	Case Study 1			Case Study 2			Case Study 3			Case Study 4			Case Study 5			Case Study 6		
	Social	Environment	Economic	Social	Environment	Economic	Social	Environment	Economic	Social	Environment	Economic	Social	Environment	Economic	Social	Environment	Economic
Meaning of sustainability	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Sustainability adoption	√	√	√	√	√	√	√	√	√	√	x	x	√	√	x	√	x	x
Sustainability certification	√	√	√	√	√	√	√	√	X	√	x	x	x	X	x	x	x	x
Sustainability Policy	√	√	√	√	√	√	√	√	√	√	√	x	√	√	x	x	x	x
Sustainability management	√	√	√	√	√	√	√	√	√	√	√	x	√	X	x	x	x	x
Top level management training on issues of sustainability	√	√	√	√	√	x	√	√	√	√	√	x	√	X	x	√	x	x
Stakeholders' engagements	√	√	√	√	√	x	√	√	X	√	√	x	√	x	x	√	x	x
Implementation scope of requirements of sustainability	√	√	√	√	√	√	√	√	√	√	√	x	√	x	x	√	x	x
Advocacy & Awareness Campaigns	√	√	√	√	√	√	√	√	X	√	√	x	√	x	x	√	x	x
Cross-functional integration	√	√	√	√	√	√	√	√	√	√	X	x	x	x	x	x	x	x
Potential changes to make this production system more sustainable	√	√	√	√	√	√	√	√	X	√	√	x	x	x	x	√	x	x
Code of conduct reflect in organisation	√	√	√	√	√	x	√	√	X	√	√	x	√	x	x	√	x	x
A clear understanding of the capability of buyers	√	√	√	√	√	√	√	√	X	√	√	√	√	√	x	√	x	x
Approaches that are collaborative with buyers	√	√	√	√	√	√	√	√	X	√	√	x	√	x	x	√	x	x
Perceived sustainability of the production system	√	√	√	√	√	x	√	X	X	√	√	x	x	x	x	√	x	x
The equal significance of sustainability in the assessment	√	√	√	√	√	x	√	√	X	√	x	x	x	x	x	x	x	x

8.2 Cross Analysis for Social Compliance

Considering social compliance, the buyers are more concerned with some factors, for instance, child labour, workers' wages and benefits, health and safety issues, hazard, sanitation and other factors related to human rights. The compliance manager of case study 1 argued that *"buyers show zero tolerance to child labour."* Claims exist that the workers are once paid very poorly in the world. Case study 1 responde,

"Buyers are expected to ensure fair wages and benefits, working environments that are free from hazards and other social factors, also improving lives within the sphere of case study 1 and our neighbourhoods."

Case study 1 ensures the standard level of wages and benefits, pay on time, medical facility and childcare for female workers. Buyers are also strictly considering the compliance to social factors and issues for avoiding the risks of the image's crisis from the media's negative exposure. On the other hand, case study 1 explains,

"Networking and collaboration are related to each other, our company is collaborating with stakeholders and has a good connection with buyers, and we are also responsible for ensuring factory compliance."

The human resource manager of case study 2 mentioned that most of the issues come from social compliance. From this context, for the management to ensure corporate social responsibility, they must perform in the supply chain. On the other hand, buyers are conscious of those matters such as monitoring

and evaluating their suppliers and sanitation and health issues. According to case study 2's supply chain general manager, *"Third-party certification is required for the buyers, like the ACCORD."* This certification provides the maximum level of opportunity to ensure the factory's overall condition.

Consequently, case study 3 critically outlines that,

"We have to specially train our employees for our technical department; if we lost any experienced employees and recruit new employees, this is an extra cost for the company. Therefore, we motivate our colleagues to stay for a long time in the company."

However, minimum wages are required by local laws, but it is not enough for quality living standards. Case study 1 said the quality of life has to go an extra mile with more pay for their workers and to give bonuses to retain them. This can be confirmed from case study 3 corporate social sustainability director who outlined that,

"Our employment law refers that we have to pay a minimum wage of \$ 70.00 per month for normal hours. If anybody works more than 8 hours, we need to pay overtime and also keep it in the register for the third-party inspection team."

The corporate social responsibility director in case study 3 outlined that,

"Building inspection is a vital issue for Bangladesh government, they have taken very strict steps for suppliers due to several fire accidents in the garment factory. Buyers representative ACCORD also monitors the initiatives that have been taken for building safety. Nowadays, if

suppliers provide any fake document, buyers cancel the order, as well as Bangladesh BGMEA also cancels the suppliers' license."

Case study 4 responded that ethical and social standards are one of the pressures from buyers, which is not overlooked in the compliance audits. Case study 4 said,

"Compliance inspection is as a ticking box-like 'yes' or 'no,' if you tick yes, maybe it is a positive indication for the time being, but government alliance does not recommend the ticking system."

Case study 4 responders said we need to provide documents to government alliance for our organisation sustainable supply chain. In particular, social factors are ensured for visibility that is easily attracted to buyers' orders, which makes the company gain reliability and legitimacy for their organisational activities. Most of the time, this is mentioned as an essential factor and it turns out as the cancellation of the order before delivery. Economic factors and the quality of the products are shared, as discussed in case 4. Case study 4 is also aware of taking social responsibility with economic factors.

Case study 1 responders said top-level management of our organisation follows up the labour law, which is required for social compliance. They also responded that their workers get sufficient wages on average according to the local laws. Furthermore, they confirmed that all of them were engaged in activities to encourage corporate social responsibility to keep their skilled and trained workers. Case study 4 human resource manager indicated about health and safety issues,

“Our workers’ health and safety are the main priority for a good working environment. We have a good medical and nutrition team to look after our workers, especially healthy food.”

Case studies 1,2,3 and 4 responders mentioned that suppliers have to follow the buyer’s requirement such as social compliance. After the Rana Plaza incident, when buyers place orders, they required the entire sustainable supply chain report. Mostly, they appoint particular suppliers for procurements of materials. Case studies 1, 2 and 3 responders said the suppliers are appointed to comply with the buyers’ environmental and social requirements. The suppliers must be certified by the third-party inspection team. Sometimes, buyers do not specify their suppliers. In such a situation, the large and renowned producers ensure that the compliance issues are quickly addressed in the factory to curb the risks of losing their reputation. Senior procurement manager in case study 5 reported in a statement on their concern on evaluation of the supply chains,

“Most of our products are inspected by buyers. they also inspect our factory condition and collect previous inspection documents.”

Moreover, case study 5 supply chain manager argued that,

“The regulations, as strict as they are, attributed to the current situation politically between China and the United States that opens opportunities for accelerating Bangladesh’s exports as well as the significance of the global market for market sourcing.”

Case study 6 confirmed that they fear for the activities of their workers’ rights. Consequently, in case study 6, the human resource manager explained,

“We hate unsafe workplace; sometimes we get complaints from workers that they have been obstructed going to toilet or drinking water during the working hours. However, we have solved this issue.”

Employee turnover leads to losses of a company’s investment in terms of training and development. Skilled employees are essential in complying with quality and the lead times required by buyers.

Responders did not discuss the improvement of social problems on a large scale, nor did they discuss entrance into or interest in emerging markets and associated opportunities for innovation. Table 34 shows the cross-case analysis summaries for social aspects.

Table 34: Cross case analysis for social aspects

Particulars	Case 1	Case 2	Case 3	Case 4	Case 5	Case 6
Document inspection for child labour	√	√	√	√	√	√
Worker abuse and harassment compliance check	√	√	√	√	√	√
Zero tolerance for forced labour.	√	√	√	×	×	×
Minimum wages	√	√	√	√	√	×
Health and safety	√	√	√	√	×	√
Training	√	√	√	×	×	×
Sanitary facilities	√	√	√	×	×	√
Monitoring job satisfaction	√	√	√	×	×	×
Corporate social responsibility	√	√	√	×	×	×

All case study top-level management agreed that they need ACCORD certification for their potential orders and long-term relationship. Without this certification, they are in constant fear for future business. ACCORD makes

them not only eligible but also a prominent view in social compliance as a significant investment and long-term partnership driver, but not as a financial risk to them. For example, case study 4 sustainability development officer argued that,

“Compliance is one kind of brand loyalty. Initially, we had to spend money for loyalty purposes until receiving buyers’ orders.”

The sustainability development officer of case study 4 indicated that the Bangladesh government is strict to local laws which are operating within its borders. All the case studies, except case studies 1 and 2, argue that the government has a strict role play for social issues and set certain legislation (e.g., trade licence cancels) for the garment industry. Often, the government is keen on role play and will pressure the organisations and penalise them if they do not fulfil requirements.

8.3 Cross Analysis for Environmental Compliance

This study shows that the impacts on the environment are too high and could be attributed to the drying, finishing and dyeing processes that intensively use natural resources and chemical products. Thus, environmental compliance could be considered as an essential factor for the sustainable supply chain. Furthermore, this is reflected in the content analysis, while many of the respondents outlined the concerns of environmental issues to do with waste management. Case study 1 aimed at the use of a holistic approach in curbing the waste management that results from their processes, materials and

products that are selling to facilities and processes used in storage. Case study 1's corporate social responsibility consultant commented that.

"The company is working towards a recycling method by using the shortest path whenever possible through reuse, remanufacturing and recycling activities. This approach can be further applied to its sustainability development along the company's sustainable supply chain, which requires a full integration amongst its suppliers, buyers and other partner organisations working on related environmental issues".

The case study 2 Sustainability Development Officer summarised that,

"The changes in environmental legislation, for example, landfill and CO₂ emission, are still significant driving forces for the company to focus on environmentally sustainable issues. Due to these legislative changes, wastes are much more costly to the company as most types of company waste have no residual value and thus must be reduced where possible.

Case study 3's corporate social responsibility director says all wastes need to be handled by the company; this can be a third party that specialises in waste management. Over the past years, the company dealing with a sustainable supply chain had total control over their streams of waste that resulted in the various approaches and carried out all over the performance. The organisation now concerns itself with single waste management that makes it more efficient, and the results are comparable. The initiatives of the garment industry supply chain members about environmental factors can be seen from the opinion of case study 3,

“We have the ETP in our entire factory to reduce chemical and water pollution.”

He addresses that,

“We have two types of garment industry wastes. Big waste is sold to the small local garment item producers and small garment industry wastes are sold to the recyclers”.

In compliance with environmental issues, case study 4’s supply chain general manager outlined his company’s approaches,

“We are focused on controlling water pollution and air pollution. Also, we are trying to control soil pollution, recycling and selling of wastes.”

From the interviews, the study finds that the garment industry used ETP to treat pollutants and complied with the legislation about the environment that was developed by Bangladesh’s Ministry of Environment. Case study 4 mentioned the initiatives for environmental compliance,

“We are ISO 14001 certified. The inspectors measure noise level, dust, and emission. They also check our factory cleanliness of water tank, sewage system.”

Case study 5 works as a 1st tier supplier and subcontract basis, but the company human resource manager made a comment:

“The key thing in the current climate is getting on the list; it increases the chance of getting the work.”

Code of the contract will motivate and secure future subcontract systems and increase strong production strategy. Environmental supply chain technologies

featured prominently throughout interviews. For example, case studies 2 and 3 discussed growing opportunities surrounding industrial wastage in the local area, with the former discussing factory owners' points of view. It created value from waste and air pollution, supporting the result of CO₂ emission. Similarly, case study 6 claimed to invest heavily in employee's food waste, allowing them to become a self-sufficient, independent company that puts us in a unique position, actually overshadowing CO₂ emissions. In addition, case study 1 mentioned electricity technologies such as sensor-controlled lights, describing them as 'best practice innovations,' whilst case study 5 claimed that it has 'invested \$15,000 in drying systems because traditional ways chew up so much electricity. Case study 3 also mentioned energy recovery from refrigeration technologies, whilst case study 4 notified 'energy efficiency, heat recovery and optimisation of refrigeration processes. Communication technologies also featured in interviews, with case study 2 referencing collaborative communication technologies such as online forums in which they can 'see what is demanded of us, see new technologies that might be interesting and share best practices to find innovations' throughout the supply chain.

As per discussions of pollution prevention, it implies four new capabilities: a zero-waste philosophy; corporate responsibility principles in decision making; farming and land qualifications; and financial capacity to invest in environmental practices. Regarding zero waste, case studies 1, 3, and 4 claimed an internal zero-waste philosophy, drove the prevention of waste and rendered benefits for the organisation via improved efficiency and reduced costs. Corporate responsibility principles emerged as a pollution prevention capability in case study 4's claim that 'organisation is often different to other businesses. The

organisation has a long-term perspective, or values added that encourage them to do the right thing and case study 6 claims that their 'focus is on environmental responsibility. Finally, case study 6 stressed the need for financial capacity to invest in environmental practices and claimed sustainability could only come from a successful business. Table 35 shows the cross-case study environmental aspect.

Table 35: Cross case analysis for environment aspects

Particulars	Case 1	Case 2	Case 3	Case 4	Case 5	Case 6
Reduction of emissions and use of hazardous materials.	√	√	√	x	x	x
Minimisation of pollution and reduction of waste.	√	√	√	√	x	x
Monitoring of environmental performance.	√	x	√	√	√	x
Corporate environmental responsibility	√	√	x	x	x	x
Control in waste management.	√	x	√	√	√	x
Ensuring the standard factory temperature	√	√	x	√	x	x

8.4 Cross Analysis for Economic Compliance

In case study 5, the development officer said that economic compliance gave a summary of good management for the company supply chain and the entire organisation to subsist in economic sustainability. If a company fails to show economic compliance, it may fail to participate in the market change. Case study 1 responder said that the company's financial analysis is a subject matter within economic sustainability aspects such as the volume of sales, growth of

sales, profit and costs. Based on the respondents' view, the supply chain requires enough orders for sales to make profits and be able to compensate its employees well.

Case study 3 responder said that poor sales make an unsustainable situation for the supply chain due to higher production costs. Moreover, most of the responders indicated that the industry profit is very competitive and the costs are essential. Some of them said that their organisations faced both international and local competition. From case study 2, it was also found that the garment industry fails to mention competitive cost-efficiency. It is true that production costs are increasing day by day due to rising labour costs, utility, raw materials and related costs. One of the responders in case study 4 outlined that,

“We calculate the cost of product in advance. When we take an order, we calculate the cost and profit.”

Table 36: Cross case analysis for economic aspects

Particulars	Case 1	Case 2	Case 3	Case 4	Case 5	Case 6
Productivity	√	√	×	×	×	×
Cost reduction	√	√	√	√	×	×
Trickle down	×	√	×	×	×	×
Quality assurance	√	√	√	√	×	×
Competitive pressure	√	√	×	×	×	×
Trust	×	×	×	×	×	×

However, some challenges were specific to case study 5 about technical skills. For example, case study 6 has a subcontractor factory in Chittagong and mostly depends on 1st tier suppliers' technical training. Therefore, the availability of a technically skilled workforce in those factories impacts quality, capacity, cost,

lead times and disruptions. Case study 4's core business is T-shirt production, which mostly relies upon 100% cotton products. The pure cotton products are costlier than polyester products. On the other hand, existing and changing legislation is stricter in this particular business area, creating more challenges in managing sustainable supply chains.

8.5 Conclusion

Most of the case studies demonstrated that the decision-makers are key role players for sustainability implementation and practices, e.g., environmental, human resources, health and safety, legal and economic, thereby creating limitations to evaluating suppliers' point of view in the supply chain. Additionally, the case study identified the limited number of economic-related indicators as a major barrier to a balanced supply chain construct. For example, the policy, practices and proportion of spending on productivity, quality assurance, cost reduction-based production were the most prevalent purchasing-related economic indicator. In fact, the case study found very limited use of this economic indicator in case studies 4, 5 and 6. Furthermore, the decision is not including this particular economic indicator considering the fact that each case study had a vast number of suppliers that significantly varied in size.

The identification of supply chain criteria is the major point of sustainable supplier selection. The literature review discussed the significance of sustainability performance indicators for supplier selection had been widely recognised. Most of the case studies demonstrated that the garment industry is increasingly seeking guidance on identifying the weakness of sustainability, implementation challenges and practices. However, the findings showed that

all the case studies 1, 2 and 3 do have a high awareness of social and environmental sustainability. On the other hand, case study 6 is not aware of sustainability issues.

Chapter 9. Discussion of the Findings

This chapter discusses the findings of the case study with concern in the literature review and primary data from the sustainable supply chain. The research was undertaken to identify the current sustainability implementation and practices using interviews from top management and direct observations in the garment industry to understand the real situation on the ground. The discussion of the findings gives a critical analysis of its implementation challenge and sustainability practices. It would address three research questions of this thesis and findings in the case study while gathering relevant literature reviews to support the study, as evident from the case study. Parallely theory is also adopted in this thesis for justification of real scenarios. These results are summarised between the intermediaries and non-government organisations. There are various activities required for the implementation of sustainability, opening windows for the implementation of further sustainable supply chain theories that have been neglected before.

9.1 Application of Theoretical Framework

A literature review was conducted prior to debating and then deciding on which theoretical framework was the most suitable for this research, with the aim of reducing possible limitations on comprehending sustainable supply chain, an evolving research field (Paul and Criado, 2020). By considering literature surrounding sustainability and supply chains, one's attention was drawn to a significant gap in the research sustainable supply chain in the garment industry context (Weber and Mayer, 2014). By then considering literature specific to

garment industry, the good decision was made to take the theoretical frameworks of stakeholder theory, transaction cost economics (TCE) and instructional theory. These interlinked frameworks were chosen because the comprehensive sustainability in the supply chain may not have been understood if just one theoretical framework had been adopted. Furthermore, using three theoretical framework allows one to discover a wider range of viewpoints and understandings of such a phenomenon. Whilst the theoretical framework of stakeholder theory, transaction cost economics (TCE) and instructional theory are three separate phenomena, they share very clear-cut links. For example, the instructional theory concentrates on all strategic plan within an organisation and places much importance on more implicit which enable competitive, sustainable benefits such as those which can not be easily copied and are unique to that particular organisation. These assets are restricted to socially complicated interactions, knowledge and skills, as well as embeddedness (Ciliberti *et al.*, 2020). The relational aspects of stakeholder theory and instructional theory alike represent said socially complicated and implicit assets; these are involved with common meanings, belief and strength of relationships. The total cost economics theory aspect of embeddedness. On the other hand, resonates with stakeholder theory, where the main implicit assets of belief as well as principles are depicted in the community composition of connections.

9.1.1 Stakeholder Theory to Contribute to Sustainability Supply Chain

The research described both internal and external drivers as critical, including increased garment industry sustainability, decrease production cost, increase

social values, mitigate environmental challenges as well as external loan and tax incentive opportunities. These findings support earlier research that enhanced huge productivity, cost savings, effective resource management, risk management and government incentives all perform critical roles in organisations adopting with stakeholder on sustainable supply chain practices (Pagell and Shevchenko, 2014). However, participants in this research from various senior management voiced widely contradictory views and motivating factors for implementing sustainable supply chain practices. For instance, while first-tier senior managers cited increased factory productivity as the primary internal catalyst for implementing sustainable supply chain activities, sub-contracting participants mentioned risk and resource management (Morali and Searcy, 2013). Thus, the findings of this research strongly support the stakeholder theory, suggesting that the majority of senior managers regard stakeholders' sustainable supply chain interests when it comes to achieving corporate objectives (Sarkis *et al.*, 2010).

Additionally, as stated earlier research illustrates that the essential element to identifying the stakeholder theory issues by determining how organisations identify specific stakeholders to print out specific problem about sustainability issues (Freeman, 1984). Another previous research (Huq *et al.*, 2014) finding shows that most senior managers integrated sustainability operations into their supply chains to meet the needs of their buyers and other external stakeholders. According to this research respondents, external drivers of sustainable supply chain include the requirements and priorities of external stakeholders such as the government, the media, non-governmental organizations, buyers and consumers. For instance, Jones *et al.* (2018) found

case study base research as a potential source of the sustainable supply chain context to fulfils the requirements of the stakeholder theory. Further, this research finding confirm that the organisation received external pressures, demands to implement sustainable practices from various external stakeholders, including buyers, society, the media and non governmental organisations (Fraser *et al.*, 2020).

Interestingly, and in line with previous research, these findings imply a relationship between institutional theory and stakeholder theory. Likely, Chien and Shih (2007) finding that the world capacity to supply such natural resources is dwindling at the same time as a wide range of stakeholders is calling for action on issues ranging from climate change to working conditions in supplier factories in developing countries. However, the study's findings showed that sub contracting faced more minor requirements and demands from external stakeholders. This finding confirms Jones *et al.* (2018) finding that external stakeholders such as government and non governmental organisations are less effective at encouraging developing world sustainable supply chain practices.

9.1.2 Transaction Cost Economics (TCE) Theory to Contribute to Sustainability Supply Chain

Earlier research proposed that the greater the specificity of an asset, the higher the transaction costs (Grover and Malhotra, 2003). It is an example of human capital investment. This tends to be a good background for social implementation. But if buyers invest in human capital, those resources cannot be quickly withdrawn (Morali and Searcy, 2013). This may be why buyers tend to follow standards rather than being audited. However, the research finding

supports earlier research that proponents of this view believe to be a short-term tactic, resulting in potential buyer costs dropping (Sarkis *et al.*, 2011). It necessitates financial and resource expenses, such as increased lanes for machine operators and fire safety equipment. Investing in equipment and workplace will result in increased sales, increased productivity and less absenteeism. Buyer ethical codes of conduct do not typically call for highly skilled capital. This may be one reason why buyers would be reluctant to share the costs of these initiatives. Overwhelmingly, the research finding endorse Grover and Malhotra's (2003) proposition, human capital investment generally represents asset class-specific investments. On the other hand, greater asset-liability certainty may raise transaction costs in the short term and contribute to lower prices in a long time.

Earlier research by Grover and Malhotra (2003) mention in their second hypothesis that more significant transaction costs arise from bounded rationality and opportunism under uncertainty. Inability to define the characteristics of a supplier beforehand, environmental uncertainty stems from social in the implementation of renewable energy. From finding of this research the buyers incur the initial technology and social auditing costs, the precision of the decision becomes less specific, but the risk for losses increases if the incorrect supplier is chosen. Additionally, the export costs related to assessing a supplier's social performance and responding to deviations from expectation often count as behavioural instability. This would hurt a supplier's reputation if it were leaked to the media. What the research found was, however, is that buyers care more for their immediate suppliers than on-time deliveries by tier two suppliers.

Meanwhile, suppliers may fail to let buyers know of any potential problems with their subcontracting work or have specific details about their suppliers. As far previous research suggests that supplier's information is concerned, significant buyers -such as, Wal-Mart and GAP have insisted that their goods were not produced in the workshops (Cuypers *et al.*, 2021). They declared that producers and intermediaries were entirely responsible for using cheaper non-compliant suppliers were to blame (Yadlapalli *et al.*, 2018). To summarise, Grover and Malhotra (2003) claim that there is challenging to execute socially, given the fluctuating environmental and pragmatic motives of buyers, as well as the practical tactics of suppliers. Monitoring and support costs and reputational damage often go up, resulting in higher transaction fees.

Furthermore, transaction cost economic results in rare but specific examples of the cases in which a supplier chooses to supply a particular buyer on purpose. Walker and Weber (1984) argues that offering products with market size, changing loyalties, and numerous suppliers' control advantages are potent tools. Also, different suppliers preserve the individuality of buyers and suppliers (Tsang, 2006). The research finding shows that independent suppliers can reach this conclusion about meeting a particular buyer's sustainability requirements. As fer earlier research find that transaction has been unprofitable, if the business will not extend the relationship (Richman and Macher, 2008). Even if the variable costs can be subsidized to cover the fixed, the company would find more profitable or expanding opportunities. However, prior research on small and medium-sized organisations (Verbeke and Greidanus, 2009) has found that consumers who demand environmental responsibility from manufacturers expect them to reciprocate in other ways. If

people become more conscious of the climate and international environmental regulations, it is predicted that products will be more versatile rather than unique. There will be several users who use the multipurpose assets. Moreover, supplier does not have to own property to meet environmental requirements, it is more likely to implement the ones set by the buyer (Yadlapalli *et al.*, 2018). When it comes to uncertainty and transaction volume, the emphasis is on the expense of handling as opposed to having it.

9.1.3 Institutional Theory to Contribute to Sustainability Supply Chain

This research has implications for three theoretical viewpoints when it comes to sustainable practices. Jones *et al.* (2018) found that institutional theory provided the primary impetus for everything else. Though interviews showed the need for buyers' pressure, government incentives and direct economic incentives all played a significant role, buyers came to prominence as well as an even more important influence, buyers' pressure and governmental activities and regulation made an additional yet noticeable contribution. However, the research finding shows that effective sustainability practices require change in government regulation. On the other hand, top contributors have so far been dismissed as obsolete for the use of sustainable supply chain practices (Govindan 2018).

Additionally, it is essential to consider extricate motives when executing sustainable supply chain strategies. The case has also been made that organisation see intrinsic drivers as playing a significant role in sustainable supply chain use. Previous researcher Rentizelas *et al.* (2020) found that morale and commitment are critical to an organisation's overall performance.

They recently studied intrinsically guided programs and supply chain engagement, which saw a link with structural collaboration. Since the results of this study suggest an essential correlation between sustainable supply chain adoption and practices is the theoretical engine in the study. According to Saeed *et al.* (2018) capabilities and motivational qualities are those that enable a sustainable design and manufacturing approach to be adopted. This significant result supports the argument that these techniques are profitable because of their inherent ability to yield short- and long-term gains in financial status (Hofmann *et al.*, 2018). This correlation finds the research that intrinsically motivated employees good working facilities adopting strategies that result in competitive advantage and profits.

Furthermore, the overall supply chain sustainability goals, garment industry is encouraged and supported to interact personally and stakeholders. Therefore, market advantages and fiscal incentives rule the adoption of reverse logistics, regulatory drivers exert an equally important influence in sustainable supply chain (Glover *et al.*, 2014).

9.2 Sustainable Disclosure and Accountability

According to previous research, the sustainable report is the act of measurements, disclosure and accountability to external and internal stakeholders for group performance towards achieving their goal (Baskaran *et al.*, 2012). While dealing with supply chain risk, the literature has based its research on criteria rules on what should be done (Schaltegger and Burrit, 2010). Sustainability is considered well during the product design and manufacturing phase though only in the supply chain (Caniato *et al.*, 2012; Ding

et al., 2018). Currently, the fact that developing a sustainable system of consumption and production (PCS) is needed to improve progress towards sustainability is widely empowered (Touboullic and Walker, 2015). It should be promoted into the supply chain and should not be taken as a concept of the theory of its own (Abbasi and Nilsson, 2012). As mentioned in chapter 5, several researchers in the literature review found the upgrading and the pace of technology growth have been lagging as compared to competitors and this, in turn, affects the ability of organisations to achieve and maintain a competitive advantage that is sustainable enough (Amankwah-Amoah, 2015; Majumdar *et al.*, 2020). Some developing countries are of the view that inadequate technological and financial resources, as well as trade terms that are not fair enough, have plagued their sustainable development implementation (Drexhage and Murphy, 2010). Individual brands have been keen on taking various steps aimed at deepening their sustainable development (Kozlowski *et al.*, 2015).

9.2.1 Social Compliance

The recent study Kumar *et al.* (2020); Huq and Stevenson (2020) shows that not only an organisation's top-level management commitment and a supportive culture but also workers' involvement is responsible for sustainability implementation in the supply chain. The finding (chapter 7 section 7.2.6, 7.3.3, 7.5.3) of the current research also found that some of the workers involved in the training programme about workplace safety and disciplinary procedures rarely received workers' rights. In addition, the research shows few case studies made clear mission strategy for their workers' rights and responsibility, such as

case study 1 and case study 2. Dempsey *et al.* (2011) explained that the workers' rights and responsibility are not only helping for a sustainable supply chain but also further acts as a motivation to workers to focus on the missions that are shared and promote the objective of sustainability.

Case study 5 respondents agree that the factory standard is not subjected to an unexpected inspection conducted by staff or officials from a specialised factory. Sometimes buyers do not know what happens in the supplier's position because 1st tier suppliers distribute their orders by subcontracting in the earlier studies by (Anner 2020); thereby, the subcontractor has little or no relationship with the main factory. However, the observations surrounding the small scale of suppliers do not carry out the safety inspection independently; they recruit the third party for good quality products. It demonstrates the code of conduct that has been used continuously to check the working conditions for suppliers in earlier studies by (Kalkanci *et al.*, 2019). It has narrowly focused on building infrastructure with a bias to things that can be safety inspected (Kabir *et al.*, 2019). These codes have been implemented poorly, caused building collapses and hazardous fires. Furthermore, they ignore several things which threaten the workers' health and their well-being.

The current research finds about the new understanding of the ACCORD. Nowadays Bangladeshi garment industry considers building infrastructure and fire safety issues as the main problem entering the supply chain. However, there are several important issues left in the supply that affect employees and damage their reputation on a long-term basis. Caleca (2014) provides several individual examples for employee discrimination such as long working hours,

physical exhaustion, lack of meaningful representations and harassment. Researchers argued that these problems are invisible (Salminen, 2018). The current research finds that the Bangladeshi garment industry needs to realise that health issues mean a lot more than the absence of injury. All these are threatened by the humiliation and stress extending beyond the factory into the lives of workers even after retiring.

Furthermore, it identified that implementing policy for sustainability can be achieved through third party's engagement by briefing, workshops as well as training (Dubey *et al.*, 2017). This research is not the first time argued about social issues, but there are few issues not identified in other research, such as local area contribution. Without local area involvement, it is difficult to industry development and sustainability performance measurement (Marshall *et al.*, 2019). Case studies 1 and 2 have more time expended in building infrastructure and various social issues for workers. According to Kumar *et al.* (2020) the assessments of performance, firms reward outstanding and performing as well as arrange programmes to train employees in improving their performance. This policy is also applied to suppliers (Wahl and Bull, 2014).

Earlier research by Guarneri and Trojan (2019) discusses the buyer's emphasis on the sustainable supply chain and their sustainability features included in quality products such as organic cotton. Consequently, buyers can set up purchase orders involved in organic cotton for certain types of products. The challenge could be that cotton may be an organic product and certified by a third-party inspection team, but the product grown style did not sustainable. Therefore, buyers have to trust in stakeholders.

9.2.2 Environmental Compliance

The literature review for this research highlighted that production process causes water pollution. The polluted water impacts the river (Belal et al., 2015). Earlier researchers found that drying process systems make warmer water and then return the warmer water back to the river (Belal and Cooper, 2011; Kalkanci *et al.*, 2019; Islam *et al.*, 2020). From the findings of the current research (chapter 7 section 7.1.3, 7.4.3), the changed water profile can alter the species that live at that point. Any production facility will have a level of emissions to some degree. In most cases, the aim is to identify and control the emissions in earlier findings by (Shams *et al.*, 2017).

The research findings show that certifications by ISO 14001 and ISO 9001 facilitate case study 1, which meets the sustainability facility to the requirements by buyers. This finding also is endorsed by previous study by Bhatia *et al.* (2020) in environmental regulatory requirements and minimise the negative environmental impacts arising from them. This current research findings are also supported by Klassen and Verrecke (2012) they suggested environment new regulation and policy is one of the main drivers for the sustainability supply chain. They also found that the global buyers put pressure on improving the quality of products in order to meet the global market requirements. In case study 4, environmental issues are the main concerns during the design of the product, manufacturing as well as its development. To address the above concerns, case study 1 has engaged a cleaner practice in its production achieved by cooperating closely with BGMEA institutes of research. It mainly focused on product design, prevention of wastes and reduction of sources.

Apart from case study 5, the remaining case studies showed fairness, transparency and responsiveness and acted responsibly as the major aspects of governance. One of the group does not aim to establish transparency and governance; rather they make their prosperity within a short time and destroy the sustainable framework. Diabet *et al.* (2014) also suggested that a poor level of environmental practice happens in Bangladesh due to ignorance in manufacturing hazards, pollution and lack of government enforcement. According to the law, those who pollute the environment via the discharge of poorly treated or untreated waste from the ETP must be punished. Global buyers and suppliers must oblige under cover of existing laws and work independently (Wall-Tweedie and Nguyen, 2018). In the observation, the government legislation body has to show and provide support to the garment industry and civil society also put pressure on the government to implement the Environmental Act in Bangladesh. This type of research was carried out by other researchers (Haq *et al.*, 2016; Guo *et al.*, 2020)

Some of the organisations hide sanitations and through them, they dispose of waste that is untreated. However, there are a lot of rules and regulations that protect water from harmful wastes. But at some point, factory institutions' capacities are low and enforcement actions worked negligibly. As a result, waste does not prevent it from discharging untreated pollutants. Moreover, existing rules, regulations and enforcement programmes do not associate knowledge, skills of the garment industry. In addition, constructive measures do not improve the implementation process for weak political willingness to punish violations (Wall-Tweedie and Nguyen, 2018). Due to this, violators who

are active politically can impose intense pressure on bodies that are charged with the mandate of regulating.

Civil society, international agencies and NGOs are working towards achieving better organic resources, pollution control and protecting the environment. It is needed to support their involvement to ensure that the workers are not affected by health issues for the environment. The protection of environmental resources and the factory environment remains one of the greatest challenges. In a wide theoretical context, the research analysis contributes to under testing of the sustainability commitment, institutional capacity and skilled human resources are all required to confirm the proper implementation of rules and regulations for environment protection and pollution control. Earlier in this thesis (Marshall *et al.*, 2015) it was mentioned (see chapter 5 section 5.6.2) that environmental governance needs to be very strong to ensure that businesses, institutions and individuals' responsibility for immediate protection of the organic resources and water, land, air pollution. Garment industry must promote and maintain corporate environmental systems and social responsibilities. The government has to force them to obey and maintain these responsibilities by established rules and regulations as well as a force for implementation and practices. All agencies such as government, civil society and NGOs must strictly follow the environmental acts and EIA guidelines.

The research finding shows the solid waste issues are not straightforward and cutting scraps could be difficult to sell in the local market after manufacturing the final products. Moreover, the huge waste dumping creates pollution in big city areas in Bangladesh (Shamsuddoha, 2015). In the reviewed literature,

Zand *et al.* (2019) mentioned that waste dumping is more expensive than other waste management. The research finds different forms of waste such as rejected products, swing and cutting scraps, overproduction, etc. Sometimes the order of excess raw materials for production are not used in production, even though they are used in the best optimisation system. Every year there are nearly 250,000 tons¹⁹ of cotton waste created in Bangladesh. It could produce approximately one billion new products through recycling these wastes.

9.2.3 Economic Compliance

It should be noted that most of the respondents confirmed that the garment industry always has focused more profits on the short period rather than long-term returns. In the literature review, Tsai *et al.* (2009) concluded that economic sustainability is not just about profitable returns. A sustainable can save costs in the long run, but buyers are not keen on this (Sinkovics *et al.*, 2016). Extra expenses are due to factors such as higher costs of purchasing the technology, the costs of the learning curve and the workers' training for the organisation.

9.3 Supply Chain Collaboration for Sustainability

The research study finds that collaborations with their rivals' garment factories keep up with sustainability improvements. This collaboration saves their resources on the side of the supplier through joint audits inspection team

¹⁹ Bangladesh garment industry could save \$500 million a year by recycling cotton (Reuters June 2020). <https://www.reuters.com/article/us-bangladesh-fashion-recycling-trfn-idUSKCN2DS11P>.

(Yawar and Seuring, 2017) which BGMEA supervises. Furthermore, sharing knowledge on sustainability issues is an incentive that is widespread for interactions with various companies in the industry. The respondent informs that sometimes BGMEA provides training and follow up in collaboration systems, such as after the Rana Plaza incident, due to overall improvement in the total garment industry (The Guardian, 2014).

The research finding shows that international buyers and NGOs have to be involved with sustainable practices as instructors and facilitators. Its involvement, in turn, leads to the maximisation of the performance and results from the practices for sustainability have been working. The local government helps to set up production plants of biogas and implement schemes for saving energy (Kumar and Goswami, 2019). The main objective is to reduce the power consumption in the factory. In addition, supply chains have to be associated to make the suppliers need and benefit from the government's technical help. It is provided by minimising the wastes from the production as well as energy preservations. The government has also adopted and encouraged collaborations among institutions' research. Through the government's cooperation and coordination, case study 3 came up with innovative products to be reprocessed into raw materials to achieve the efficiency of resources. This design eliminates the emission of harmful materials such as chemicals, wastes and products, into the environment.

International Collaboration

The research findings show that a single way of collaborative practice with other organisations is by committing to implement common standards (Yawar and

Seuring, 2017). Fair trade practices across the supply chain for long-term value creation. This research suggests that the garment industry needed to collaborate with the Fair Wear foundation due to the benefit of using the Fair Wear logo and creating charitable donations for workers' benefit.

The majority of respondents state that the Rana Plaza collapse sparked a massive move, especially among European buyers. After this incident, a significant number of domestic and multinational suppliers in Bangladesh have signed the ACCORD on fire and building protection. However, some analysts have cautioned that such deals are merely a drop in the bucket. Nonetheless, the signatories "agree to create a five-year fire and building protection programme in Bangladesh." Additionally, the researchers discovered that a critical component of this initiative is the requirement for manufacturers to pay for safety measures.

Local Collaboration

The garment industry could learn from the best practices of other industries. One of the examples is case study 3, one of the largest garment product suppliers and the winner of the international sustainability Award in the "Bangladesh's Most Sustainable Initiatives" category. The research finding shows that it closely collaborated with more than 40 garment industry. All processes along the supply chain take place locally, including zipper, hanger and yarn. The observations suggest that local collaboration happens when international accessories suppliers do not ship their products on time (Wahl and Bull, 2014). Most importantly, local suppliers who bought products from vertical associations ensure sustainable supply chain support in enhancing

environmental protection, reducing income diversification, as well as improving health and safety issues (Rossi *et al.*, 2013). For instance, case study 4 covers a percentage of wages of workers and training fees at several training institutes.

The research finds that the commitment in the garment industry will continue to grow. It is not only ensuring a social responsibility approach but also best practicing in the supply chain. As a result, it has been value-added beyond corporate boundaries. In fact, direct access to the best quality raw materials also shows adopting a community-based approach, involving collaboration with NGOs, local industry or labour organisations. This research points out the lead to an increase in social standards, improved supplier relationships and will raise the playing field for the entire community, not just a single facility.

9.3.1 Sustainable Supply Chain Transparency

The research findings suggest that transparency practices are one of the main drivers of sustainability implementation in the supply chain. There is clear potential; then, the approach to transparency can be a necessary precondition for achieving a sustainable supply chain (Fraser *et al.*, 2020). The literature review findings indicate that sustainability implementation could be impossible or limited access to the supply chain in the entire garment industry without transparency. Transparency is more likely on an organization's activities regarding their supply chain if it goes beyond the disclosure report to more strong enforcement activity²⁰. Furthermore, from the observation of the relationship, suppliers and buyers not only influence and control over the buying process but

²⁰ The House of Lords and House of Commons Joint Committee on Human Rights recommended such legislation be brought forward in the United Kingdom in its report on Human Rights and Business 2017: Promoting Responsibility and Ensuring Accountability (para. 114)

also make each other transparent. Buyers' relationship is more based on the suppliers because suppliers need to provide the right items at the correct prices for them (Yawar and Seuring, 2017). This will also give buyers a feeling of controlling and having power over the sustainable supply chain (Bai *et al.*, 2020).

On the other hand, customers are building a barrier between suppliers and buyers in the dominant position. As a result, consumers have more awareness and are able to speak about the conditions of the products as deduced from (Bae *et al.*, 2018). However, the research finds show that low awareness, lack of corporate governance and weak government regulation provided poor transparency. Moreover, there is no connection between workers and consumers in the entire garment industry (Fraser *et al.*, 2020).

Further, the research study confirmed that lack of connectivity and knowledge prevents a buyer from responsibility. However, buyers also a role play in the prevention of transparency of the supply chain (Luthra *et al.*, 2019). It should be noted that an increase in the sincerity of practices in the business processes requires the transfer of power from consumers to stakeholders. The research study suggests that with higher levels of transparency in the supply chain, consumer awareness and understanding are expected to increase, which will lead to sustainable buying practices. It is clear that the increase in a legal requirement to be aware of supply chain statements for transparency and organization's commitment provided the ethical values which develop customers' understanding of the manufacturing system.

9.3.2 Sustainable Supply Chain Network

The research findings showed the beneficial effects of cooperation in the boundaries of an organisation. Earlier in this thesis, it was referred in (chapter 4 section 4.3.2) that (Alamgir and Banerjee, 2019) the joint focus on corporate social responsibility and increasing government regulation legislation for the implementation policies make a balance between sustainability and supply chain network. Earlier research on sustainable supply chains has focused on corporate social responsibility through the supply chain network (Bastas and Liyanage, 2018). As in most institutional approaches, this includes formal and informal interactions between the various departments (e.g. supply chain) involved in the organisation and those related to sustainability compliance. The research has also identified various determinants that are supportive for the achievement of an approach that is collaborative in the policy implementation for sustainability. Supply chain network factors may result from the collective beliefs and values that may cause sustainability significance in the case study (Wahl and Bull, 2014). These involve case studies to get commitment to the sustainable supply chain while establishing into consideration the ecological and shared problems inside the sustainable supply chain. This makes them part of the company and self-conception philosophy. Despite this fickle behaviour, the supply chain may be considered as a result of the organisations' networking and affected by departmental collaboration (Zhang *et al.*, 2020).

Supply chain networks emphasise the fact that local producers learn a lot from global buyers about how they can achieve consistency, high quality, improve their processes of production and how they can increase their response speed

up (Humphrey and Schmitz, 2002). But the challenge in developing countries could not provide similar service, quality, and quantity like developed countries (Jiang et al., 2019). However, the earlier research finding shows that developing countries are generating low price but quality products (Hong *et al.*, 2018). Moreover, a shift has been noticed from advanced economies to emerging economies such as China and Bangladesh since wages and other related costs have been on the rise (Jiang *et al.*, 2019).

Global garment products distribution network concentrates on their diverse activities and operations in distribution centres and logistics platforms to increase product delivery all over the world (Majumdar *et al.*, 2020). Their requirements include good locations between the clusters of suppliers and their customers to minimise the distance covered by lorries and other transport services. Most of these retailers prefer to have centres that support stores in specific geographic locations and be able to locate them in their various markets of sales, like East Asia or Europe. In some cases, organisations may keep all or some of their distribution centres in their original country. Geographical integrations within a supply chain have been influenced and favoured by improvements in comprehensive systems of transport (Rodrigue, 2006). In other parts, air transport has been experiencing an increase in its share of the market. Reducing prices is one of the critical factors for shorter lead and speed, as well as travel times. In such situations, air transport gives real coverage against uncertainties and volatility of markets (Hummels, 2007). At the same time, avoiding delays that are not directly brought about by distance.

9.3.3 Corporate Social Responsibility

The findings show that the Bangladesh government is at the top of the list, unlike the western buyer, due to a lack of corporate social responsibility (Kraft *et al.*, 2020). They are applied traditional objectives of corporate social responsibility (Bae *et al.*, 2018). But the Bangladesh government is committed to introducing corporate social responsibility in the garment industry (Huq *et al.*, 2016). The finding follows the current research that a few years ago, there was uncertainty, but international trade union, NGOs make a pressure to accept thorough corporate social responsibility processes due to some concerns. However, this scenario has changed over time (He *et al.*, 2020) due to the newspaper, Twitter, Facebook and other social media focus on those issues (Islam and Islam, 2011). It is protected by the Bangladesh government, which has come up with some regulations and laws that aim to protect and create employment as well as protecting the environment (Diabat *et al.*, 2014).

Previous research has argued that successful implementation of corporate social responsibility for a sustainability supply chain might be mostly dependent on the rule and regulations (Ali and Frynas, 2018; Bae *et al.*, 2018). The government has emphasised the practices in rules and regulations for suppliers willing to join activities with buyers, NGOs for problem-solving on sustainability issues (Kumar *et al.*, 2020). The research finding shows that the government makes framework and strategies for corporate social responsibility. There have been offered clear guidelines to highlight the public policy, such as workers' human rights, regulations of export, foreign direct investment and environmental protection (Carlson and Bitsch, 2018). Moreover, the

stakeholder concerns, these public policies are committed to improving corporate social responsibility (Guarnieri and Trojan, 2019). All of the case studies incorporate sustainability issues into their corporate strategies. However, organisational culture and corporate strategies have been significantly resolved for corporate social responsibility implementation.

Many leading garment industry have relatively more resources and power through implementing good governance and corporate social responsibility practices (Huq *et al.*, 2016). The research finding shows that stakeholders have a crucial role in the development of corporate responsibility and identified the significant impact in the supply chain, regardless of the existence of criticism on the effectiveness of implementation in social issues, human rights, compliance, environmental pollution control, among others (Hong *et al.*, 2018). The achievements of the efforts made by the internal and external experts have been committed in the global society (Carbone *et al.*, 2019). In general terms, the research findings direct attention to problems due to environmental factors for global warming and climatic change, forcing governments to put in place enforcement laws to help organisations control their business operations aimed at reducing their social and environmental impacts (Mangla *et al.*, 2019).

9.3.4 Significance of Government Regulations

The current labour and environmental law practices in the garment industry are not consistent with International Labour Organisation (ILO) and environmental law (Alam and Ahammad, 2017). It is essential for policymakers in governmental support as well as in industries to understand the operation and the structure of the global supply chain that is driven by the opinions of the

buyers with main concern on sustainability (Hasan, 2016). The research finding shows that the understanding can facilitate the building of long-term industrial policies as well as plans and strategies that will position the manufacturers in the garment sector in the highly competitive global industry. However, the discussion in the earlier literature review provides little evidence that sustainable is not possible due to conflict in government regulation, enforcement framework and infrastructure (Alam and Ahammad, 2017).

Furthermore, it will encourage the implementation and practices among the various entities in the garment industry to ensure a competitive supply chain. Subsequently, most initiatives for sustainability implementation have emphasised simply one department of the company (e.g., logistics, supply chain) (Ali and Frynas, 2018). The research finding shows that case study 3 did not put into consideration one department; they are worked together in order to complete the process of production. They go through activities of the sustainable supply chain at every stage. Equally, case study 4 said that production increases need some impact of sustainability in every step. In other words, an extensive analysis could improve the entire production process and evaluate the sustainability implementation progress (Wahl and Bull, 2014).

The research findings suggest that there is no encouragement to adopt government policy. The government also takes little steps for sustainability development. Local authorities such as city corporation and export processing zone authority (EPZ) only enforce the use in correct building development maps. The local authority does not care about any other regulations such as electrical work complete certification, water treatment and air pollution.

Although, Caleca (2014) reported that BGMEA inspires for sustainable products and provides an incentive for implementation and practices, there is still a lack of monitoring systems. However, UN Sustainable Development Goals (SDGs) have been introduced in the Bangladesh export processing zone (EPZ) area as a benchmark. Although case study 6 did not implement and take time for sustainability guideline assessment. They said that the government does not care for sustainability concepts due to implementation costs.

Besides, the government is reluctant to take risks to lose the foreign investment. On the other hand, stakeholders, especially local people, are unwilling to implement sustainability due to land acquisition. Belal et al. (2010) provided evidence that sustainability must need a wide range of space for good condition building, ETP plan and a full range of electricity and gas. The finding of current research shows that there is a provision of an opportunity to put into consideration of how these perceptions and their related cross-border pressure, which in turn influences the sustainability policies of significant garment industry.

9.3.5 Stakeholders' Awareness

The research findings show that the stakeholders provide extra pressure for the least social performance that should be respectful to global social standards. Similarly, suppliers have adhered to the required standards for them to gain eligibility in their businesses, reliability and legitimacy throughout the garment industry (Belal et al., 2015). However, the respondents mentioned that suppliers had invested their resources for economic gains, focusing on a higher number of orders as well as the hunt for signing long-term contracts.

Furthermore, the research findings demonstrate that the government has exerted a lot of pressure due to their strict rules after the Rana Plaza incident. As a result, there are more requirements and frequent trips for a sustainable supply chain. Recent research by Jakhar *et al.* (2020) also found that legislation has stopped various incidents like child labour and abuse. Subsequently, it concerns itself with programmes that are aimed at workers right in the factory. In addition, several civil society groups have been involved in efforts to end child labour in the country. Sinkovics *et al.* (2016) identified some of the activities that include organising demonstrations and protests, participation in multi-stakeholder and running programmes focused on supporting such children who have been involved in child labour.

The Bangladesh government did not fundamentally emphasise corporate social responsibility, but the incident of Rana Plaza caused pressures from stakeholders (Hasan, 2016). The finding shows that the current economies in the global view and their respective politically motivated decisions on trade relations have a significant effect on the social compliance in the garment industry. In Bangladesh, fake compliance and corruption are not rare cases. Particularly, it was helpful investigating the outlined motivational factors not only in helping understand their triggers but also to find out the supplier-buyer relationship as well as gaining an understanding of how these actors are managing social sustainability.

9.3.6 Accountability

Accountability has to distribute to suppliers through the maintained necessity to comply with sustainability instructions. Most notably, the accountability system

goes through a process of transparency to illuminate the application of control using the government legislation (Ali and Frynas, 2018). The research study finds that the importance of measuring and reporting accountability in terms of sustainability helps workers participate in the discussion of its significance and their individual as well as collective roles in its achievement. However, accountability measurements would be a clear framework for the sustainability supply chain. It can be concluded that the impacts and measurements are relevant for the business. These can be considered the correct direction and help to make them properly aligned and focused on the most critical aspect of the practice of the organisation (Rossi *et al.*, 2013). One of the respondents of case study 4 said that the environmental protection measurement is a calculation on observation basis. Therefore, the observation result has to be accountable for the supply chain. The technical report and review might be questionable due to the lack of a proper measurement system. This type of report shows only for ticking base accountability (Rossi *et al.*, 2013). It would be minimum accountability which represents the world-class exporting country.

The observation of case study 1 established various elements for sustainability (e.g., safety, medical, health, water pollution) standards in the industry. The significance of accountability to improve in Health, Safety and Environmental (HSE) targets. The research findings show that it is incorporated in the performance of an individual operation. The measurement scales are a driver of improvements towards achieving the objectives of the organisation. The implementation of HSE is mainly assessed against the HSE standards. Case study 2 through the global corporate programme for inspection. Using such improvement criteria, case study 2 exceeds all its production that emphasises

HSE goals. On the other hand, case study 6 does not have an HSE standards workplace. Therefore, case study 6 has to improve the sustainable supply chain process and provide accountability reports.

9.4 Assessment

In the context of such third party inspection or assessment standards, concepts are a new potential approach for 2nd to 3rd tier suppliers in previous research (Haq *et al.*, 2014). Several research studies show that this approach is extending and needs proof of third-party inspection certificates for sustainability substances (Seuring and Müller, 2008). Moreover, sometimes, organisations justify their weakness issues. The research findings in case studies 1 and 2 needed less investment for third-party inspection for first tier suppliers. On the other hand, case studies 4 and 5 pay more money for third-party certification due to lower-tier suppliers. This approach creates a challenge and creates an opportunity for fabrication.

9.4.1 Improvement by the Third Party Inspection (ACCORD and Alliance)

The research finding shows safety issues are signs of a deeper structural problem; the “race to the bottom” and globalised outsourcing. Carbone *et al.* (2019) found that ACCORD's aim is workplace safety and sustainability in the garment industry, where workers will not be afraid of building collapse and fires. ACCORD covers a whole business responsibility that includes workers trade union framework, legal compliance, workers right and welfare. Still, there are many unacceptable delays in improving safety and working conditions in the industry, there can be no doubt the efforts are related to ACCORD. While the

repetition of ineffective methods of inspection is not promising, efforts of defending the rights of workers to join unions operate mutually with upcoming systems. Anner (2019) argues that inspection ensures factories is safe and in substantial working condition. However, if the owner and top management are looking to ensure sustainable in the supply chain, they must make sustainable decisions. There will be a loss of the market position in the global market if the products are not sustainable.

Rahman *et al.* (2015) discussed the concerns of compliance with the local legislation. The organisation must be complying with the applicable local laws and have the appropriate operation permits. This research finds that ACCORD and alliance make a global link to implement in social sustainability practice. While at the same time to gain export quality products for the global market and provide accurate guidelines to facilitate sustainability implementation and improve legal regulations. The ACCORD took responsibility for five years as the 'Transition ACCORD' that was the international safety inspection regime. After 2018 the Bangladesh government replaced the ACCORD with its own monitoring system (Wallin, 2018). The fact that a supplier is already implementing few sustainability criteria is a successful sign for Bangladesh as the world's second-largest garment products exporter. It would be providing an additional variation factor in the global market beyond the sole dependence on the major sustainability certifications. If suppliers hold a positive image of a product and create a reputation, such an image could potentially lead towards a generalised positive attitude towards the brands originated in such a country.

In the garment industry, the time factor is increasingly crucial. In this view, producers may fail to meet deadlines for delivery by ship; buyers are forced to deliver them by air. It is highly costly. The buyer may equally be able to ask for a penalty in the form of a discount price. In this situation, suppliers push the workers to finish the production on time. But the problem is, how do workers complete the production. In this sense, 1st tier suppliers recruit unauthorised 2nd tier or 3rd tier suppliers. A Wall Street Journal article of July 2013 published on practices of subcontracting in the garment industry showed that failure to meet deadlines lead a five percent penalty. Therefore, to meet deadlines, manufacturers have resorted to ad hoc subcontracting to other suppliers.

The research findings show that the ACCORD has done a major milestone in restoring the direct responsibility of suppliers to employees focused on their conditions. To be specific, Alliance contract issues in the suppliers are not only taking the responsibility of financing repair costs and the necessary renovations for making companies safe but employees, through the signatory trade unions in Bangladesh, have the ability to take brands to arbitration so that they ensure agreement enforcement. This can be attributed to a far cry voluntary from agreements (AFBSB 2013). Perhaps this is the most significant disparity between the US companies' efforts that call themselves Alliance for Bangladesh Worker Safety.

9.4.2 Ethical Code of Conduct

Suppliers may easily shift arrangements in production without short notice. Some of the big suppliers have to work with subcontracting systems due to profitability issues and reduce the number of staff for production to focus simply

on order distribution, even though the code of conduct of buyers includes a clause that requires suppliers to notify the buyers about the subcontractor's order. Wadud *et al.* (2014) discussed the code of conduct of the production process. Case study 5 responders explained that they had problems with building codes that did not follow buyers code of conduct. Subcontracting is an integral part of the complex terms and conditions. Formulation of effective strategies is essential in advocating for the improvement of labour conditions in Bangladesh. The leading organisation's code of conduct may not likely reach workers at the end of the subcontracting work. This may result in uncertainty in compliance.

9.4.3 Lack of Transparency at Subcontracting System

The finding shows that linkage between sustainable supply chain implementation, practice and driving force is related. Therefore, the pressure on faster deliveries and low prices tend to higher risk and lead to a threat of recourse to hidden contracting and informal labour contracts. It is not able to meet expected standards, meet tight deadlines. Earlier research provides information that subcontracts a specific production process to other factories with no information provided to the buyer (Welford and Frost, 2006). Due to this, complete orders can be shifted by the subcontractor supplier to unknown suppliers. It is noticeable that there is increase in the levels of unauthorised subcontracting. The research finding shows that it is attributed to the growing pressure on fast delivery and low prices together with relationships that are volatile in this industry like garment industry. However, the outcome of the subcontracting system is not making a very good reputation but increasing in

job creation, increasing sales volume. It is helping the Bangladesh economy and contributing corporate social responsibility. But lack of transparency in supply chains makes threats to workers, which leads to a decrease in transparency. This means that buyers could cancel their orders and try to finish their work from another factory. For instance, after the fire outbreak at the Tazreen garment factory, still, Walmart worked on a subcontractor basis. This is a violation of the code of conduct (Campaign, 2012).

9.4.4 Efficient Infrastructure Facilities

The research results indicated that the lack of efficient infrastructure facilities depends on the factory's internal issues, which is difficult to identify by the buyers. Some of the respondents from subcontracting factories did not want to answer on the minimum temperature in the workplace, working hours and waste management in the factory. Most of them did not mention that they follow the international labour laws. Some of them provided inconsistent answers who confirmed that they work longer than the standard working hours due to just time products delivery. Subcontracting in case study 6 was complicated. It was difficult to identify who works for which organisation. Also, it was difficult to gather information about the existing subcontracting garment industry. However, the study found that the buyers took into consideration the social factors and profit maximisation.

9.4.5 Extra Pressure

The research findings showed that several reasons might be used to explain the high incidence of subcontracting, whether unauthorised or authorised.

Moreover, after approval of the samples, buyers may change the designs, production schedules, or even production volumes without making changes to timeframes or adjusting prices. Earlier research has indicated that the practical association of knowledge is putting a lot of pressure (Alamgir and Banerjee, 2019). In some cases, this happens before the production for the order has already commenced. The supplier is not informed about such subcontracting and has no impact or control. Buyers did not know about working conditions in this subcontracting organisation.

9.5 Sustainability Implementation Process

Several challenges exist with the various drivers for sustainable supply chain development. Internal challenges that are specific to an organisation may include insufficient or no processes structure. The lack of knowledge of a supplier and low motivation, regulations and competitive pressure is creating external challenges for the organisations. However, the research showed that there are various challenges that may go beyond the findings of a study that was in existence. The study focuses on how external and internal factors can influence engagement negatively within the sustainable supply chain.

Throughout the supply chain, the implementation process was carried out based on a systematic literature review of the sustainable supply chain. The research findings show that after the incident of Rana Plaza, buyers, government agencies and customers provide pressure to implement certain compliance standards that are related to the case study. The BGMEA and six case study responders provide the opinions that the third-party audit inspections (Alliance and ACCORD) are mandatory for every supplier. However, safety structure,

social responsibility, waste management and cost-efficient inspection were essential for the implementation process (Barratt *et al.*, 2011). Moreover, the code of conduct is assessed and positive reporting outcomes increase in market share. In the research, most of the case studies found that sustainable supply chains increase the improvement based on the implementation process. It is shown in the following Figure 19.

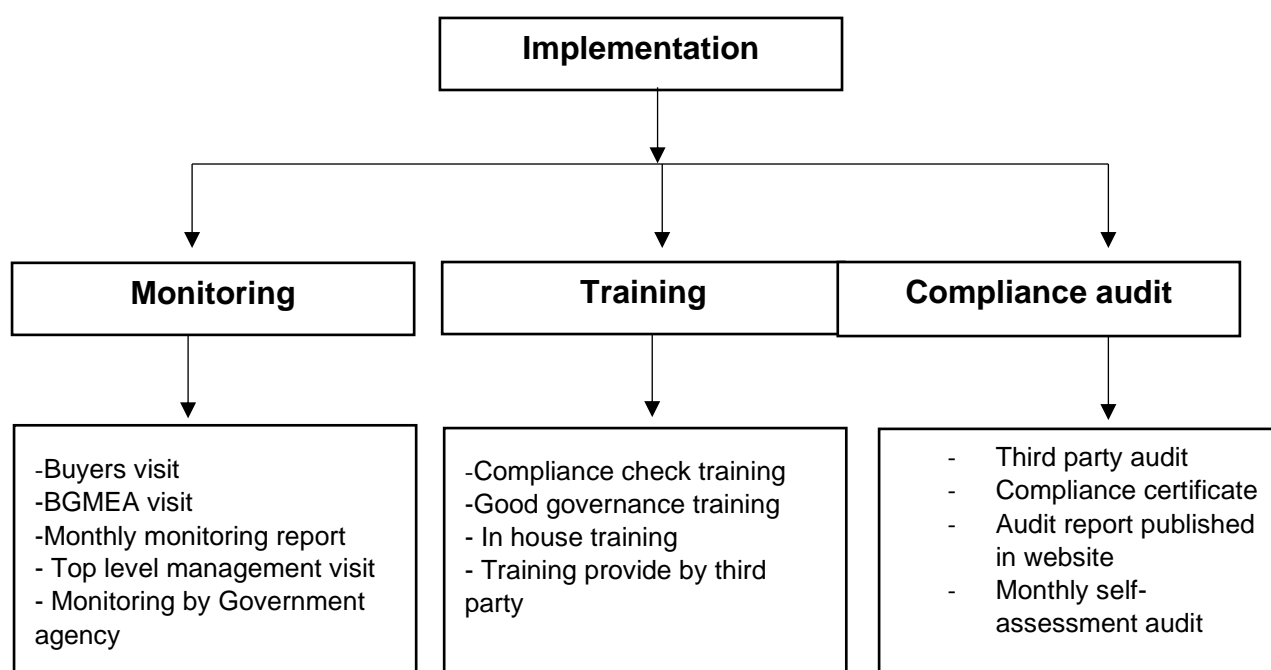


Figure 19: Sustainability supply chain implementation process

Bangladesh has decided to participate in the Voluntary National Review (VNR) at the UN high-level political forum as part of the committee prior to the adoption of the SDGs. Bangladesh has earned quite several international awards for the attainment of MDGs while on the brink of adopting the SDGs. It hugely adds to industrialisation via investment, socio-economic development of the country, export enhancement and product diversification. Socio-economic growth is useful for reducing poverty levels in developing countries and it also helps to improve the standard of living. BGMEA plays an important role in empowering

women as well as ensuring an adequate and friendly industrial environment (The Guardian, 2014). Men and women are allowed to work at the factory and poverty levels have reduced significantly (Nayak *et al.*, 2019). The research found that most of the local people are living in factory areas. They can easily work and financially benefit because of the availability of factories as a result of industrialisation. They can now send their children to standard schools and understand the hygiene issues. Some of the factories have established schools and medical centres for the well-being of workers.

9.6 Sustainability Implementation Challenge

After discussing with responders about research questions, it has recognised that some of the responder's lack of knowledge and negligence of the sustainable supply chain. Those challenges create combined internal and external barriers. Within this section, researchers have discussed relevant findings in the case study to implement the challenge in the sustainable supply chain.

Internal Challenge

9.6.1 Lack of Understanding of Sustainability Implementation Process

The research findings show that the concept of a sustainable supply chain was introduced in Bangladesh a few years ago. Furthermore, the research study confirmed that sustainable development is still in its early stage, even though top management in some factories did not understand sustainability concepts. Moreover, some stakeholders do not know about this new concept. Furthermore, the existence of little understanding of the topic as well as the

benefits of process sustainability in suppliers in the multinational garment factory such as case study 1. The study found that few large and multinational companies in the industry focus on attaining sustainable implementation. Due to limited understanding and expensive implementation processes, many factory owners are not free to incorporate the concept into their factory. Hasan (2016) provided information in the literature review, a barrier from the low awareness of cultures in the idea of sustainability. Most of the top-level management do not care about the benefits that come with being sustainable. They are also not ready to pay more for these practices. They are mostly like to see the necessity for incorporating sustainable concepts in the industry.

Individuals and organisations who involve themselves in the global supply chain in the garment industry need to consider poor health symptoms and their effects. For this situation, one of the main reasons is the global system of the entire industry that depends on the implementation process. The industry leaves the risks and costs of production to the skilled workers that are vulnerable. In general, the industry needs the skilled workers for a huge volume of production and factory owners have responsibility for their workers. Furthermore, the industry should understand that this responsibility goes beyond safety by how their buildings are structured (Hussain *et al.*, 2018). Regardless of the above challenges, in this research, limited corporate processes and structures complicate the ability of a company to address the issues of sustainability effectively. Decisions within organisations are arrived at based on the buyer's requirements rather than just an investment plan.

9.6.2 Lack of Knowledge About the Waste Management

Sustainability objectives must be clarified and condensed. Results from this study suggest that emissions and other environmental problems arise. Thus, it is important for producers to understand and assess the feasibility of sustainable waste management systems for improvement (Kraft *et al.* 2020). The report also shows that shoppers need to be more mindful of and promote complete sustainability in the procurement of ethical and environmental problems of solid waste from textile production (Huq *et al.*, 2014). Another research by Nayak *et al.* (2019) argue that corporate social responsibility concerns itself with ethical values. They also mentioned that buyers provided the instruction support and third-party team assessment of the whole sustainability process. The current research also noted that most of the respondents agreed that lack of sourcing, such as technical employees, could not solve environmental problems. These are the primary barriers to applying recycling. Buyers' requirements are found as another barrier where suppliers need to fulfil their needs such as just in time products delivery and quality maintenance are the main requirements for buyers (Alkaya and Demirer, 2014). In this regard, buyers must put more information about sourcing, such as environmental impacts and obstruction of producing sustainable products.

Earlier research has indicated that lack of understating about waste management was one barrier to maintaining a sustainable supply chain (Belal and Cooper, 2011; Shams *et al.*, 2017; Islam *et al.*, 2020). The common indicators are the lack of waste management knowledge and waste processing are considered. While most plants are export and corporate suppliers, very few

of them manage a sustainable waste management system (Wadud *et al.*, 2014). In the local waste traders and other cash traders, the research findings reveal that useful residue from processing, additional component and other waste from sewing and cutting have been sold. The waste disposal is yet unsatisfactory, notwithstanding regulations. Deposits can be environmentally harmful due to the combination of certain chemicals from torn materials and other synthetic materials. Instead of the financial advantage of this waste, it is necessary to transport costs and time.

Moreover, the findings also indicate the necessity of buyers' awareness. Even though most of the buyers with sustainability awareness, they still have not found their way to recycle products. Another significant issue related to eco-label manufacturing is necessarily important as there is an increase in interest in eco-friendly products. Nowadays, international retailers (customers) are well informed and they want to know where their products are coming from. Therefore, environmental benefits linked to the adoption of eco-label helps to change the suppliers' attitude towards the re-use of waste. In fact, buyers also provide their production order to eco-friendly manufacturers to manufacture products that would be environmentally friendly.

The research findings suggest that the poor waste management scheme lacks its financial potential due to proper oversight. It is less sustainable and more costly goods have an effect on the issue. Overproduction or shipping loss of waste is sold on the local market and solid waste processing is distributed at recycling facilities (Hasan, 2016). This investigation shows that most case studies begin without deterioration with the reuse of waste materials. Recycled

materials are more environmentally sustainable since recycling is rooted in already-manufactured wastes. Solid waste has its market potential that can be recovered sustainably through recycling. The research (chapter 7 section 7.5.6) shows that the stakeholders, such as the Government of Bangladesh, should take action to promote recycling and encourage those who are able to begin recycling for their waste management systems. Existing consumers must implement a new recycling scheme at their source manufacturing plant and are prepared to purchase recycled materials from their waste.

9.6.3 Absence of Workplace Unions to Voice for Workers' Right

Earlier research has indicated that employees wished for unions to help them in the workplace as well as in addressing safety concerns (Islam and Deegan, 2008). Social indications are human rights, job satisfaction and equal opportunity voice raised by unions (Huq *et al.*, 2016; Bastas and Liyanage, 2018). Earlier in this thesis (see chapter 3 section 3.4.1), the researcher mentions that each employer should pay their workers attention to achieve their goal (Kopnina and Blewitt, 2015). In case study 4 in the sewing section at a factory in Dhaka, the researcher claims that the workers are under pressure to finalise orders; otherwise, their wages will be deducted. However, there is nobody who raised a voice for the workers' rights. One of the responders confirmed that wages had been deducted from overtime. He mentioned, *'whenever one stands up for us, they hire goons to beat them up.'* The management sometimes gets angry and throws products at them.

In many cases, management said, workers wanted unions to help end routine workplace abuses as well as to address broader safety concerns. A female

respondent at case study 5 said that workers at her factory were under extreme pressure to complete orders. As a result, sometimes workers are not able to fulfil the production target and lose their job. The suppliers have less implementation to achieve the workers' rights codes of conduct in the supply chain.

9.6.4 Lack of Management Awareness

The current research (chapter 7 section 7.6.7) recognises the lack of management awareness and substantial practice challenge in sustainable supply chain compliance. Suppliers may not always provide management training, but top-level management should be aware of employee training. Sometimes, suppliers have not dedicated willingness to practice and management is also afraid for their job security. Most management teams agree that suppliers' support is essential for sustainability implementation and practices (Huq *et al.*, 2016). The research shows that in all the case studies, the central system of planning support gave a framework for operations of top management. However, there have been noticeable engagements into new environments by the government, economic reforms, but there are lots of weaknesses in management systems such as sustainable knowledge, workers' health and safety issues. These are based on the supply chain, where the stakeholder is absolute power to monitor in good management culture. The findings are consistent with other studies. Earlier research discusses that management decision is one of the important facilitators of the sustainability implementation (Hasan, 2016). Management should prompt internal resources to new development as a great industry. It does not give any options to mitigate

without the law (Belal *et al.*, 2010). The rules may be driven by good governance. Therefore, good management should be aware of sustainable supply chain and also accept public opinion or pressure, environmentally conscious, preferred developmental modalities of a country.

External Challenge

9.6.5 Higher Cost of Sustainability Implementation

This research provides evidence that the implementation costs of a sustainable supply chain may hold organisations back from achieving sustainability. It may reduce the willingness to accept the new schemes for certification due to inspection costs. However, respondents acknowledged their experience, inspection certificates identify the unnecessary processes, but organisations do not like to pay extra cost. This research also finds that the challenge was more of a barrier in achievement than a real factor of cost. Previous research by Bella *et al.* (2015) argued that the garment industry tries to implement a sustainable supply chain, but the process costs higher than profit maximization. It makes it easy to compute the actual cost helping organisations to become aware of the much sustainable process and its implementation cost.

All the respondents emphasised that buyer's requirement for factory standard is very expensive compared to traditional factories. One of the respondents said sustainability implementation costs approximately 40% more than traditional factory. The research finds that most management teams believe the development of sustainability is not economically viable. The concept of sustainability leads to an increase in the costs of a project since it will require higher capital (Belal *et al.*, 2015). For instance, ETP is not implemented in

several garment factories due to expensive installing costs. Failure for sustainable materials is severe in Bangladesh and is another reason. Expensive materials are one of the barriers to sustainable implementation, such as LED lights are much higher than normal light. In addition, obtaining sustainable technology is expensive and complicated in an equal measure. Therefore, most developers focus on maximising profit and are unwilling to invest in this concept.

9.6.6 Requirements for Water Treatment Legal Regulation

The findings of this research indicate that the suppliers play an insignificant role in environmental protection. A few findings show that suppliers are key players for contribution in environmental sustainability, even though environmental protesters argue that the garment industry destroys the environment within the local area. Belal *et al.* (2010) provided evidence of a lack of transparency and accountability in Bangladesh's environmental decision-making process. Under such circumstances, weak political governance has resulted in unnecessary influence on government institutions to achieve growth rather than sustainable environment management practices. The sustainability implementation process and culture action are integrated for environmental management (Fransson and Molander, 2013). Bangladesh water resource management does not work properly for water treatment. As a result, public participation in water treatment is insufficient due to a lack of powerful legitimation. The lack of focus on integrated water resource management cannot create an effective water treatment governance. This has drawn a constant struggle to address basic challenges for achieving water-related Millennium Development Goals (MDGs).

Therefore, the current research identified that extremely poor quality wastewater treatment services exist for operations and maintenance infrastructure.

Lack of environmental aspect increases to generate barriers in the sustainable supply chain in the garment industry (Belal *et al.*, 2010). Earlier in this thesis discussion (chapter 3, section 3.4.2), environmental rules and regulations perform environmental compliance, along with weak institutional capacity and trained personnel (Suhi *et al.*, 2019). From the current research findings, the lack of environmental impact assessments and other measures have large loopholes in the supply chain, while the stakeholders (e.g., trade union, community and buyers) argued that weak compliance (e.g., lack of acceptable space, corruption, irregularities in ETP operations, poor inspection, lack of enforcement laws, lack of transparency and accountability) with environmental regulations in the garment sector. However, there are some positive impacts on supply chains (e.g., government enforce licence cancellation without ETP plan)

9.6.7 Low-Level Achievement of Buyer Commitment

The research finds that there are substantial challenges to sustainability implementation in the supply chain due to less than minimum wages, overtime, subcontractor workplace and environmental compliance. Earlier research (chapter 2 section 2.4.3) in the absence of long terms and reliable buyers and suppliers relationships indicate that there is no resource sharing in the process of implementing the agreement (Huq *et al.*, 2016). Most of the case studies did not consider long-term commitments from the buyers. Sometimes, buyers

committed to cost-share for sustainability implementation. One of the respondents in case study 1 stated,

“Compliance standard costs are more than other expenses; it could increase in production cost and may be difficult to survive in the global market. On the other hand, buyers would move where they will get a better opportunity if the product price is high”.

Empirical evidence provided by this research showed that good relationships in the supply chain between suppliers and buyers are mainly based on the cost-benefit. It is described by the continuous search of alternative suppliers by buyers, encouraging terms and conditions. Sometimes, suppliers are not able to adopt workplace safety compliance; buyers are forced to use their power over them by withdrawing their sales, which in turn threatens them. However, a long-term commitment between suppliers and buyers influences the cost and reduces opportunities. In addition, it leads to a reduction in monitoring systems. Therefore, this research proposes that supplier's comprehensive compliance adoption makes buyers take part in long-term commitments and responsibility is shared. Case study 1 found an outline of the significance of long-term relationships with buyers. Over a long period, close relationships can benefit the organisation as they will significantly enhance the implementation of policies for a successfully sustainable supply chain. On the other hand, low-level compliance adaptation establishes a poor buyer's commitment.

9.6.8 Subcontractor System Evaluation

The observation found that one of the challenges of smaller garment factories like case study 6 mostly relies on subcontracting works. They are not able to make the shipment on their own because they do not have enough production capacity. So, they are in contact with subcontracting factories or neighbouring manufacturing factories. Often, subcontracting factories are not monitored properly. However, the research findings show that the subcontracting company did not pay attention to the workplace and workers' facilities. The literature review (Grimm *et al.*, 2016) also said that managing subcontracting is another critical challenge to implement building safety and other hazards, including fire compliance in Bangladesh. Buyers rarely inspect the factory of subcontractor suppliers. Most managers and owners fail to provide improved safety measures, but workers are under pressure to meet deadlines. Akbar and Ahsan (2019) also endorsed this, where they have said that it is impossible to maintain building compliance in terms of health and safety in the subcontracting system.

9.7 The Challenges in Practising of Sustainable Supply Chain in Bangladeshi Garment Industry

All the case studies show that sustainability is the main issue to the global supply chain. Most of the garment industry is trying to implement sustainability practices in their organisation's processes and strategies. However, adopting sustainability practices is insignificant in case study 6. Stakeholders are more aware of implementing sustainability practices. However, there are several barriers, such as structural stakeholder outcomes problem and misleading the

direction of sustainability. The existing sustainability supply chain roadmap does not support the transformation of a sustainable organisation. Moreover, it has a clear view of influences and interrelationships between the dimensions of sustainability.

In case study 2, respondents said the supplier evaluated sustainability on the basis of requirements that have been established by international sustainability standards, which is certified by at least one sustainability standard. Sustainability standards certification has specific consequences not only widespread criticism by the buyers and stakeholders in terms of unsustainable practices but also as a diversity factor along with global excess production, in the presence of a comparatively inflexible demand in the global market. The former focuses on areas like environmental protection, occupational health and safety, labour rights, social equity and community welfare. Some examples are SA8000 and ISO 14001. Meanwhile, the latter emphasised topics like health and safety and quality practices; the standards and requirements developed by institutions like Walmart, Next, GAP, Mark & Spencer, ACCORD and Alliance.

9.8 Conclusion

There was a major fire break out in 2012 in a garment factory, which was one of the Walmart subcontractors that killed 112 workers (*BBC News*, 2012). Large garment factory buildings in Bangladesh are frequently affected by fires. It happens due to a lack of safety (Akbar and Ahsan, 2019), poor work environment and vulnerable infrastructure. This includes minimum wages, health and safety issues and human rights. Besides, top-level management is also responsible for the fires in factories every year, and a particular challenge

is rooted in the economic and political system prevailing in Bangladesh. Only six months after the deadly fire, in 2013, another garment factory in Bangladesh made headlines when it collapsed (Pamina and Sandra, 2019) which killed 1136 workers and over 2000 injured. That factory was producing for a widely known retailer called Primark in the UK – this puts a 2014 *Daily Mail*²¹ article about Primark's success in a different light. Before twenty years, Nike declared a similar description of inappropriate sustainable supply chain having been enacted as some brands that participated in the Rana Plaza²² tragedy in Bangladesh (Akbar and Ahsan, 2019).

The discussion of findings shows that the garment industry made overall improvements due to global buyers and international agencies' pressure. There is still a dark side of what is largely undocumented. There were challenges for exploring sustainability in the supply chain. For instance, production depends on buyer's demand, and such production is often highly variable. This unpredicted demand becomes an obstruction to follow the sustainable supply chain requirement. In part, this is due to the non-contradictory synthesis of the critical realist philosophical stance underpinning this study, which rejects falsification and considers the limitations of the contextual setting and sampling. The absence of the base of the pyramid may be sectorial specific and thus its falsification may undermine its value in other sectors.

Several previous researchers, Huq *et al.* (2016); Bastas and Liyanage (2018), and Zand *et al.* (2019) have discussed the sustainable supply chain, which is

²¹ UK mainstream newspapers.

²² 2013 Dhaka garment factory collapse

associated with intermediary involvement and evaluation. Sometimes, the government is organised for workers' safety inspections on a random basis. One of the case study's sustainable supplies chain managers believed that the intermediary gives the impression of sustainability supply chain conditions. At the same time, factories may show a willingness to provide their social and environmental responsibility for commercial purposes but avoid intermediaries' costs. As identified in the interviews, the research calls for an intensive evaluation of sustainable supply chains. One of the respondents provided the information that subcontractors remain unclear and will not be covered by the buyer's requirement to be SA 8000, ISO 14001 and OHSAS 18001 certification. Certification systems are requirements for sustainability standards covered in tier 1 suppliers. The subcontractors are not representing 1st tier suppliers. Therefore, it has not shown their social violations in the transparency in the supply chain. Moreover, the burning question arises, how far can sustainability roles be performed in the supply chain? If they are not able to lead to new paths for expanding the main frameworks in the world.

Chapter 10 Conclusion

The empirical evidence explores why and how case study sustainability implementation and practices are a challenge, drawn by interviews and observations data. This chapter concludes with the key findings of the thesis. The study uses real-life situations and the literature review provides an overview of the research. The case study aims to address and improve in the supply chain. All the stakeholders, for instance, suppliers, workers and buyers, would benefit from these frameworks to identify the hotspots in the supply chain and their consequent mitigation. Qualitative research techniques were applied to generate these methodologies, such as case study and observation methods. In these analyses, real data was set from interviews of different segments.

The findings of this study are more relevant in previous research. The credibility of most of these case studies has been capable of implementing sustainable supply chain strategy if attention is paid to practising opportunity. However, there are more limitations that the case study has to face to improve sustainable supply chain practices. The fact that case study 6 is working with 1st tier suppliers as a subcontracting system has made it face a problem. The findings also suggest that case study 5 and case study 6 must rethink current sustainability policy to implement and practice in their organisation. However, case study 6 worked with 1st tier suppliers that have been able to disclose the main issues behind poor compliance, but case study 6 does not have require to disclose poor compliance due to subcontractor system. The important role-play of the 1st tier suppliers is to mitigate the compliance challenge and make

an opportunity to improve the implementation process and practices in 2nd tier or 3rd tier suppliers like case study 5 and case study 6.

The theoretical underpinnings of the transmission process of the code of conduct that obtains the rules and standards from buyers to suppliers (Taqi *et al.*, 2020). Therefore, it involves several stages externally and internally. Practically, the main activities of the buying agents are hidden, which involves the actual representation of the buyers and maybe subcontracted. Buyers may have little knowledge about whatever happens after the first-tier suppliers. For practical reasons, they are unable to implement the regulations throughout their supply process. At every phase, expectations are transferred from one to the other, reconstrued and reacted according to the interests and understandings (Seuring and Müller, 2008). As a result, it is expected that misrepresentation of the original expectations can arise. For instance, the living wage concept is incorporated in the BGMEA wages base code, and it is weakly adopted.

It is evident that pressure from external factors such as international trade union, NGOs, European union helps in promoting change in situations where a degree of acceptance exists in organizations. The relevance and legitimacy of the objects as far as society is concerned. Whenever such commitment is absent, the empirical data outline the attempts to influence actions by expected transmission. The source will be isolated in the form of regulations and encountering challenges. Uncertain code of conduct allows freedom to some of the people to enforce them. Rules are sometimes modified at every phase of their full implementation at their employment. Thus, time is required for the completion of convention adjustment.

Two more factors have a significant contribution to the lack of effects or impacts expected from the code of conduct. For instance, the poor pressure alignment with expectations of stakeholders, both internal and external. Secondly, the poor and limited penetration of ethical businesses and trading in a sustainable supply chain. Several buyers are engaged with smaller suppliers' social issues as well as those of sub-contractors, particularly in the informal suppliers.

10.1 Managerial Implications

The complete review of all aspects in the research of sustainability provides useful issues required to be considered in the supply chain. The buyers need minimum requirements of social, environmental and economic compliance which are mandatory before placing orders. The researcher believe that compliance is ensured by a global third party compliance team which is familiar with both local and multinational management. Therefore, in the review of the findings, the implication presents the real outline for implementation and practice in supply chain which could be meaningful contributions for supplier, buyers, Bangladesh government policymaker. Moreover, a future goal will be needed to increase business.

Manager in the garment industry must comprehend the significance of factors in creating sustainability. This research would therefore, the researcher observed that take a closer look at the factors involved in the development of intentional and rational sustainability strategies with regards to managing supply chain, which will benefit the managers. The study aims to help show logistics operation managers how vital drivers for sustainability are to the industry and will outline how these factors are ready to help managers when it

comes to planning strategies. Moreover, multiple techniques can be utilised. These include training courses for workers, communication strategies and reward programs and it is essential that all are implemented within the framework of satisfactory organisation dedicated to the cooperation with stakeholders when undertaking actions.

The logistics operation managers would be able to take decision from this research are as follows: (a) The study found multiple complexities with regards to being sustainable, including problems related to social compliance, structural safety, the health of workers, empowerment (or a lack of it), pollution and cost advantages (or a lack of them); (b) When the supply chains are globally dispersed there must be satisfactory reasoning as to how sustainable practices have been applied. For example, workers having adequate facilities, there being a lack of pollution and making sure supply chain are sustainable; (c) Subcontracting factories (tier 3) usually have substandard sustainability goals when it comes to management. An example of this is that, in Bangladesh, around 20% of subcontracting factories never obtained environmental clearance. Furthermore, over half of Bangladeshi subcontracting factories are unaware of ways of being sustainable, such as implementing renewable energy source schemes; (d) The government can play a role in making businesses more sustainable by giving more motives for them to be, such as ridding costs to register businesses for those which are sustainable. Another example is that, with EPZs (Export Processing Zones), the government can introduce tax benefits; (e) There are unlimited advantages to employing a sustainability driver approach to trade, one of which being that buyers will experience less supply chain issues and will not have to negotiate sustainability as much with factories.

With all of these findings in mind, it is essential to implement more sustainable approaches to supply chains, the government assists it by implementing severe policies which have a positive impact on the environment. Government policies should aim to promote a decline in pollution in order to have global socio-environmental sustainability practices.

Social and environmental issues are essential for global business in the garment industry (Taqi *et al.*, 2020). Suppliers have to be performed their roles and expand the competitive advantage using organisation diversity. Moreover, it is vital issues that every activity in the sustainable supply chain should have the willingness to be compliant and should also possess trust, transparency as well as credibility. This research also enables better understanding among the internal and external aspects in the supply chain. There are specific issues such as workers' rights, waste management and other violations taking place in the supply chain. However, the research supports the roles of social, environmental and economic activities of sustainable supply chain for global buyers. In addition, the research outlines why global buyers source their products from developing countries like Bangladesh and also how global buyers take economic advantages. Moreover, buyers are able to focus on the core activities of the business and allocation of resources to their sections. For instance, buyers are able to use these described roles to rethink their activities strategically as well as evaluate and crosscheck the existing characters in the future. The suppliers argue that the right buyers for security sourcing and an opportunity for upgrading its operations and facilities. In achieving this, the industry will have a more competitive advantage, and the business will rise through both enhanced reputation and image in the global market.

From the findings, suppliers are expected to maintain a mutual understanding that is strong enough. In addition, they should be able to maintain a good business relationship with buyers. Most of them suggest that when conditions in the market are not likely to be formed. Top level management are expected to preserve and prioritise business relationships. It is evaluating systematic impacts of the implementation of sustainable supply chain practice on social, environmental and economic issues. When these are done, the process of solving problems will be faster and easy. The findings of the research do not show the unrealistic efficiencies. The focus on sustainable supply chains that are internal will not only lead to short times but also the addition of higher values.

10.2 Theoretical Implications

The implication could be conditions on the supplier's side but control by buyers and stakeholder may ensure that suppliers achieve efficiencies in the internal supply chain for them to remain competitive in the global market. The results of the research further outline the significance of focusing on long term sustainable supply chain. Thus, factory owners are advised to focus on the benefits of supply chain performance as well as increased profitability. Furthermore, it is crucial that suppliers and buyers make strong business relationships and focus on the process of faster decision making (Koberg and Longoni, 2019). Consequently, the implementation and practice activity in the case study explicitly recognised the exceptionally desired result of developing a sustainable supply chain (Macchion *et al.*, 2018). The suppliers should take more initiatives for implementation in sustainable supply chain practice like

case study 1 and case study 2, this could be motivating other suppliers like a case study 5 and 6.

Analysis according to stakeholder theory demonstrated that employees at both manager and worker level must recognise the importance of being flexible to policies employed by the factory and the importance of employing satisfactory communication strategies so that information is clearly conveyed. The theory also upholds the view that businesses should assimilate the aims of internal as well as external stakeholders. This in turn will promote a co-creation process and one of the best ways to achieve this is through reward systems. The co-creation process is beneficial because organisation executives can see where their supply chains can be improved regarding both social and environmental sustainability. Such insights that will assist executives in seeing this include the motivators, enablers and obstacles surrounding making supply chains more sustainable. If one can predict potential obstacles that may arise, it is easier to prevent them from happening.

Another analysis conducted according to transaction cost economic theory demonstrated the effectiveness of buyers having second and even third-tier suppliers as well as their dominant supplier. The advantages of such a strategy are that opportunistic behaviour, such as unauthorised subcontracting, is less likely to occur and a decline in the costs of transactions can be observed. In addition, an analysis according to the institutional theory found that, in developing countries, owners in the garment industry may wish to promote a policy of strategic incentives. This can include training courses for workers and

performance incentives and have been shown in developed countries to be a successful policy.

When the research refers back to the notion that the obstacles faced in implementing sustainability mean that, often, government action needs to be taken, one can deduce that many executives believe that support from the government must be in place before going about creating a supply chain that is more sustainable. With this in mind, those who make the policies must understand that managers may not be able to employ sustainable tactics without having support in the form of a strict, regulatory system first. Therefore, this research proposes that the best course of action is for policy makers and their supply chains to work together in order for obstacles related to creating sustainable supply chains to be overcome.

If policy makers' eyes are opened to the various types of advantages that arise as a result of sustainability, they would be keener to install new and strategic sustainability methods. Given that they are shown exactly where and how they have benefitted from implementing sustainable methods, they will be more likely to install even more efficient and environmentally friendly systems. These in turn could be used as successful tools to compete with buyers around the globe.

In addition, most sustainability methods employed should be utilised by logistics operation managers within the factory; if not, this is seen by many as an obstacle to achieving sustainability. When one considers convergence barriers to achieving sustainability, one must examine who deems a certain obstacle as critical and who does not. In doing so, it will be found why a certain obstacle is

considered critical by certain groups but not others. After this, crucial methods must be generated to examine the particular people who deemed that obstacle so important, so that they can play a part in attacking it. In terms of divergence barriers to achieving sustainability, it is financial reasons that restrict said implementation of sustainable practices the most. This particular issue is even more important for subcontracting factories given the fact that they have less financial reserves.

The research is also more useful for suppliers, the Bangladesh government as the policy maker, BGMEA and other stakeholders to motivate the suppliers to enable sustainability adaptation. Moreover, the case study and the conceptual framework have shown clear linkages to the integration of research finding. For example, the discussion with the management team and case study analysis demonstrated that the sustainable supply chain initiatives in the organisations were heavily twisted towards the sustainability dimension. Consequently, case study 3 management team stated that how the organisation involves the influence of their future supply chain strategic direction on sustainability issues.

The research finding suggest that subcontracting factories can benefit greatly long-term by having supply chains which are sustainable. However, it is these facilities which will cover the large, preliminary cost of employing a sustainable supply chain. Therefore, it is vital that they utilise their limited financial reserves effectively in order for the running of the factory to continue smoothly. This is the case even for factories which do not have such a financial burden, typically larger factories; they must still invest with the utmost consideration so as not to miss out on the long-term advantages of having a sustainable supply chain.

With less expensive groups, it is important that they collaborate as effectively as possible with others on the supply chain, such as stakeholders and buyers, to overcome obstacles of implementing sustainable methods; it was informants of the garment industry who found this. Only with this in place will a supply chain be as sustainable as possible. Furthermore, the factories should try to leverage social capital, as shown to be successful by research. Penultimately, senior managers must guarantee that their companies demonstrate the partners' values; this is vital for ensuring a positive relationship between both workers and owners of the garment industry which will in turn create co-creation strategies. To conclude, the findings from this research demonstrate how vital it is for workers, owners of the garment industry, buyers and stakeholders to have shared objectives.

10.3 Research Contribution

The research contributions for this thesis bring several contributions to the knowledge in several ways. The conceptual framework of this research is capable of assessing the sustainability impact. It was argued that more attention was needed in the subcontracting system. Chapter 5 has identified the implementation frameworks in the literature reviews to sustainability implementation challenges from different angles (Uddin and Rahman, 2012). First contribution of this research is sustainable supply chain implementation and practices provide a good relationship with social, environmental and economic indicators as these were carried out from the literature review and interviews in the case study. The second contribution of this research is to examine the compliance inspections that are being implemented to improve the

working condition (e.g., good workplace, employees' rights, improve waste management, reduce pollution, cost reduction and quality assurance). In addition, third-party inspection by buyer's nomination has allowed improving the inside factory condition and strong business relationship with buyers, suppliers and stakeholders. This is same type of research those other researchers (Seuring and Müller, 2008; Huq et al., 2016) had try to find out social issues but not environmental or economic issues. Therefore, it is reasonable to identify the sustainable or not sustainable of the six case studies in terms of sustainable supply chain implementations that have been practiced. This research study identified each case study challenge to implementing sustainability practices which are explained in chapter 7.

Previous research shows that third party inspection is the only way to improve and enable the sustainability implementation process (Huq *et al.*, 2016; Hemphill and White III, 2018). This research, however, identify third party inspection, staff training and monitoring by NGO's or BGMEA (these are explained in chapter 7). Additionally, the research contribution indicating that a number of coordination factors are dependent on each other. For example, BGMEA monitors the training programme of each organisation on sustainability aspects and collaborates with each other. In order to further understand the commitments of every individual, typically build a complex connection of mutual obligations. Especially, buyers influence the suppliers to monitor their factory by a third-party inspection team. Therefore, it has developed a more sustainable organisation, which is particularly establishing sustainability standards.

Furthermore, the research suggests how to improve sustainability and influence it with collaboration to make a mutual understanding with critical partners in business. It is vital to maintain sustainable behaviour that is acceptable to stakeholders such as employees, factory owners and NGOs. Every organisation's circumstances are unique to each other. So, there are various solutions to the other problem but the specific combination of instructions, commitments and conventions that apply in every case. Therefore, it has to be reconciled in all the scenarios to ensure a balance in priorities. Therefore, the results describe the effectiveness in the sustainable supply chain literature and approach that lead to the performance in the garment industry. It also indicates the right direction to improve the supply chain. Moreover, it is possible for them to come up with addresses of excellence in terms of sustainability in order to create more value, innovate and continuously improve (Yawar and Seuring, 2017).

10.4 Limitations of the Study

Discussion about the limitations may help to improve a more inclusive understanding of this research and each research has some limitations. For example, the research focused on suppliers that surrounded one part of the supply chain; there was no consideration of the buyer's responsibility to role play in sustainability implementation and practices in the supply chain. Furthermore, since different organisations have different characteristics in their supply chain, the research results may not be applicable to others.

The roles of sustainability, in fact, from this research needs to be made more clearly and sharpened to be distinguishable from one another, thus opening

new windows for future research. This is especially since this research shows the fact that the underlying processes and activities are not exclusive mutually. However, the current research speculates that limit spanners were sufficient to get the first complete picture. Along these lines, researchers may replicate the current research to explore the research in other developing countries and in different ventures. The obstructions to the usage procedure need further research. Nevertheless, the investigation gives clear signs that impeding variables are probably going to happen.

10.5 Recommendations for Future Research Work

The limitations of current research broadly provide future opportunities. This thesis has investigated the implementation challenge, cultural attitude and misunderstanding about the sustainability phenomenon of the supply chain. The sustainability implementation assessment (e.g., transparency, accountability) did not work in subcontracting systems and others. This research adopted a qualitative approach, which helped identify the real scenario of sustainability. Moreover, the research also used innovative methodology like case study methods to find out sustainability implementation and practices. Social sustainability is used in good and security social elements with specific aspects such as (e.g., human rights, water treatment, air pollution) and economic freedom. It is valuable to further research in logistic support in the supply chain in the Bangladesh context and apply it in competitor countries to increase better understanding in the global garment industry.

The mapping of sustainable supply chain hot spots can be applied to identify improvement practices. The research represents the complexity of the

phenomena of the supplier's actual objectives due to other factors such as the buyer's behaviour and attitude in the industry such as guilt-free (e.g., non-toxic) products, cost benefits, feasibility assessment and operational priorities. As well the links between measurement and improvement should be further explored. The larger framework of the low carbon emission system can be investigated in the future. As the institutional pressure could be circulated, the environmental issues in different layers of the production system. In addition, future research could investigate by utilising mixed methods which would provide a better understanding to find out the social and environmental sustainability. Lastly, future research could focus on other global regions with prominent industries such as Ethiopia, another emerging leading exporter of garment products.

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To whom it may concern

My name is Faisul Alam; I am a PhD student in Plymouth University, UK. My research theme is "Sustainability in the Bangladeshi garment industry: The principles and challenges of implementation". This questionnaire you are holding is a part of my research that aims to gain better understanding of the management of sustainability in the Readymade Garment supply chain. I am particularly interested in the difficulties of compliance, financial issues and the challenges of strategic management of sustainability from your perspective.

The data you may give during this form are going to be treated with the very best confidentiality. Your name and your factory name won't be disclosed without the proof of your permission. You also may have the rights to not answer any query if you do not desire to. However, I would be very grateful if you are able to provide me with as much information related to the questions as possible, in order to help me gain a complete picture of all the issues related to managing sustainability in this sector. If you'd prefer to have the remaining record of this study, please kindly provide me along with your records below.

Thank you so much for your cooperation.

Faisul Alam
PhD student
The Graduate School of Management
Plymouth University
Mast House, Sutton Harbour.
PL4 8AA, Devon, United Kingdom
E-mail:md.alam@plymouth.ac.uk

Please provide me the following information for the report.

Your name

Email

Company name

Company Address

Interview and real observations in factory floor of representative of Bangladeshi garment industry

Section A: Formal question for organization structure.

1. How many employees are working in this organization?
2. Could you please confirm me how many employees work in mid level to top level?
3. What is your entry requirement criteria for management level job (academic and experience)?

Section B. Sustainable supply chain. (Q1)

1. Do you have any specific department for sustainability?
2. Who is in charge for sustainable supply chain management?
3. What do you understand about sustainability?
4. What are major aspects in sustainability?
5. How do you classify social sustainability?
6. What are the main issues in social sustainability in your company?
7. How do you make compliance of health and safety in your company?
8. Without health and safety, building code, what another's social sustainability issues do you know? (such as working time, maternity pay, CSR etc.)
9. Do you think, in your company following the building code?

10. Do you think, is your company aware for environmental issues?
11. How is your company work for waste management, pollution and water treatment?
12. What are the economic sustainability aspects in your company?
13. How is your company following quality assurance, productivity and cost reduction?
14. How many buyers in your organization?
15. Are your buyer's conscious about sustainability?
16. Does your company have any subcontract factory?

Section C. Sustainable supply chain implementation. (Q2)

1. How does sustainable supply chain implementation in your factory (such as labour act, CSR code of contact)?
2. What are the challenges to sustainability implementation in your company?
3. What kind of sustainability requirements to your buyers?
4. Does your company need any certification or third party audit report for buyers?
5. Does your company train up your employees about sustainability implementation?
6. When your company does need extra help, how does your company sustainability implement into subcontracting factory?
7. How does your company monitoring subcontracting factory to sustainability implement?

Section D. Sustainable supply chain practices (Q3)

1. Whose is monitoring to sustainability practices in your company (such as buyers, third party or self-assessment)?

2. Does your company have any pressure from government, BGMEA or any NGO for sustainability practices?
3. Does your company need record keeping for your practices?
4. What are main challenges to sustainability practice in your company?

Ref: FoB/UPC/FREC/FREC1516.69
Date: 16 September 2016



Dear Faisul

Ethical Approval Application No: FREC1516.69

Title: Implementing sustainability practices: Challenges in Bangladeshi garment industry

The Faculty Research Ethics Committee has considered the ethical approval form and is fully satisfied that the project complies with Plymouth University's ethical standards for research involving human participants.

Approval is for the duration of the project. However, please resubmit your application to the committee if the information provided in the form alters or is likely to alter significantly.

We would like to wish you good luck with your research project.

Yours sincerely

(Sent as email attachment)

Dr James Benhin
Chair
Faculty Research Ethics Committee
Faculty of Business

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Appendix

Appendix Table 1: Source: Clean clothes campaign

Date	Factory Name	Why	What happened	Location	Who died
27 th November 2000	Chowdhury Knitwear Garments	Fire broke out on the fourth floor and the stampede to flee the four-storey building.	48 workers died, and more than 100 others were injured	25 miles east of Dhaka city	Most of the dead were women and children.
8 th August 2001	Macro Sweater And Europa Garments	A stampede following a fire alarm.	24 workers died, and more than 100 workers were injured.	Dhaka City	Men and Women.
3 rd May 2004	Five garment factory jam packed in the Misco Supermarket complex	The workers ran for their lives after a false fire alarm.	Nine workers died and 50 others were injured.	Dhaka City	Women.
11 th April 2005	Spectrum Garment factory	This incident occurred due to additional floors which had been illegally built.	64 people killed, and 80 people injured in this collapse.	About 30 Kilometres northwest from Dhaka city	Men, Women and children
23 th February 2006	KTS	An electrical short circuit destroyed the four-story building.	54 workers killed, and 60 workers were injured.	Port city of Chittagong	Men, Women and children
24 th February 2006	Phoenix Building	Collapsed following unauthorized renovations to convert the upper stories of the building.	19 workers killed, and 50 workers were injured.	Dhaka city	Men and Women
3 rd December 2010	Eurotex	A boiler explosion at factory which led a stampede.	Two workers died, and another 62	Dhaka City	Women

			workers were injured		
14 th December 2010	Sportswear	Electrical short circuit and substandard wiring.	29 workers died, and 11 workers were injured	Dhaka City	Men and Women
24 th November 2012	Tazreen Fashion	A fire engulfed.	112 workers killed, and another 200 workers were injured.	Dhaka City	Men, Women and children
26 th January 2013	Smart Export	Factory burned and locked exit.	Seven workers killed, and more than 50 workers were injured.	Dhaka City	Women
24 th April 2013	Rana Plaza	Building collapse due to overload.	1133 workers killed and more than 2500 were injured.	Savar City	Men, Women and children
9 th May 2013	Tung Hai Sweater	Building electrical system had been undergoing repairs before the fire broke out.	Nine executives were killed.	Dhaka City	Men
8 th October 2013	Aswad Garment	Fire broke out and workers were trying to escape from the building.	10 workers were killed, and several other people were injured.	Gazipur City	Women
15 th September 2016	Tampaco Foils Ltd	A boiler explosion and the subsequent fire at a packaging factory.	34 people died, and 70 people injured.	Tongi	Men and Women
4 th July 2017	Multifabs Garment	A deadly boiler blast inside a garment factory.	10 people killed and dozens injured.	Gazipur City	Men and women

Appendix Table 2 Interview Participator Demographic

Research participants for case study 1

Position	Gender	Age	Years of Experience	Qualification
Sustainability supply chain officer	M	49	21	MSc
Sustainability compliance officer	F	36	7	BBA
Human resource manager	F	41	13	MBA
Corporate social responsibility consultant	M	58	31	CA
Supply chain manager	M	47	18	M.Com

Research respondents for case study 2

Position	Gender	Age	Years of Experience	Qualification
Sustainability development officer	M	45	24	MBA
Human resource officer	F	39	21	LLB
Corporate social responsibility director	M	53	21	MBA
Supply chain general manager	M	36	8	MBA

Research Respondents for case study 3

Position	Gender	Age	Years of Experience	Qualification
Sustainability development officer	M	39	9	MSc
Senior procurement manager	M	41	11	M. Com
Corporate social responsibility director	F	53	23	MBA
Supply chain general manager	M	38	10	BBA
Brand manager	F	46	16	MBA

Research respondents for case study 4

Position	Gender	Age	Years of Experience	Qualification
Sustainability development officer	M	49	21	MBA
Senior procurement officer	F	38	9	MSc
Human resources manager	F	42	12	MBA
Supply chain general manager	F	49	20	BBA

Research participants for case study 5

Position	Gender	Age	Years of Experience	Qualification
Sustainability development officer	M	49	21	MSc
Senior procurement manager	F	53	26	M Com
Human resources manager	M	48	19	LLM
Brand manager	F	37	10	MBA
Supply chain manager	F	40	10	MBA

Research participants for case study 6

Position	Gender	Age	Years of Experience	Qualification
Sustainability development manager	F	49	21	MBA
Research & development manager	F	37	10	MSc
Human resources manager	M	41	12	LLM
Supply chain manager	M	45	16	MA

Appendix Table 3 The interview hours and notes

Case No	Interviewee code	Times (Hours)	Note pages
Case study 1	MINC1	1.30	4
	MINC2	0.55	2.5
	MINC3	0.45	2
	MINC4	0.30	1
	MINC5	0.35	1.5
Case study 2	MSNC1	1.10	4
	MSNC2	0.30	1
	MSNC3	0.40	1.5
	MSNC4	0.45	2
Case study 3	NGIC1	0.35	1.5
	NGIC2	1.15	4
	NGIC3	0.25	1
	NGIC4	0.50	2.5
	NGIC5	0.30	1.5
Case study 4	NSIC1	0.45	2.5
	NSIC2	1.20	5
	NSIC3	0.40	2
	NSIC4	0.40	2
Case study 5	NSCC1	0.50	3
	NSCC2	0.35	1.5
	NSCC3	0.40	2
	NSCC4	0.30	1
	NSCC5	0.30	1
Case study 6	SCC1	0.45	2.5
	SCC2	0.30	1
	SCC3	0.35	1.5
	SCC4	0.40	2

Appendix Table 4 Description of the documents of the research study

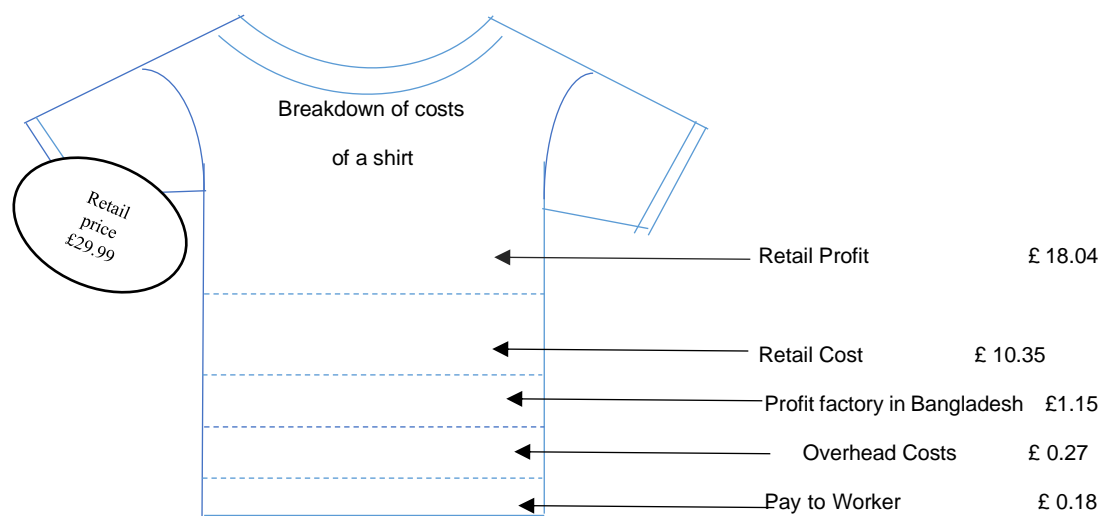
Case No	Documents	pages
Case study 1	Hirdramani Bangladesh Sustainability Report	21
	Sustainable Development Goals (SDGs)	29
	Company website report	4
Case study 2	Global sustainability report	36
	Company code of conduct	10
	Company website report	2
Case study 3	Company code of conduct	14
	Company website report	3
	Labour law report	24
Case study 4	ACCORD report	19
	Company website report	1
	Human right report	15
	Corporate social sustainability report	10
Case study 5	Sustainability report	28
	Company website report	1
	Company code of conduct	8
Case study 6	Sustainability practice report	16
	Labour law report	17
	Standard for suppliers' book	8

Appendix Table 5 Major apparel items exported from Bangladesh (Value in Million USD)

YEAR	SHIRTS	TROUSERS	JACKETS	T-SHIRTS	SWEATERS	Total export earning of RMG
2000-2001	1073.59	656.33	573.74	597.42	476.87	3377.95
2001-2002	871.21	636.61	412.34	546.28	517.83	2984.27
2002-2003	1019.87	643.66	464.51	642.62	578.37	3349.03
2003-2004	1116.57	1334.85	364.77	1062.1	616.31	4494.6
2004-2005	1053.34	1667.72	430.28	1349.71	893.12	5394.17
2005-2006	1056.69	2165.25	389.52	1781.51	1044.01	6436.98
2006-2007	943.44	2201.32	1005.06	2208.9	1248.09	7606.81
2007-2008	915.6	2512.74	1181.52	2765.56	1474.09	8849.51
2008-2009	1000.16	3007.29	1299.74	3065.86	1858.62	10231.67
2009-2010	993.41	3035.35	1350.43	3145.52	1795.39	10320.1
2010-2011	1566.42	4164.16	1887.5	4696.57	2488.19	14802.84
2011-2012	1733.54	4686.39	2231.16	4713.11	2340.34	15704.54
2012-2013	1972.89	5185.48	2634.28	5143.22	2620.73	17556.6
2013-2014	2173.73	5690.78	2973.16	5863.81	2932.94	19634.42
2014-2015	2271.43	5697.83	3183.17	6064.13	2829.16	20045.72
2015-2016	2317.09	6319	3774.08	6118.53	3182.47	21711.17
2016-2017	2108.38	6026.69	3546.88	5861.98	3361.53	20905.46
2017-2018	2063.57	6389.38	3978.47	6292.25	3674.7	22398.37

Source: Information collected from BGMEA.

Appendix 6 Scandal—inside the global supply chains of 50 top companies',
Frontlines Report 2016.



Appendix 7 picture



Picture 1. Bangladesh's garment industry: Child labour and options, (Illustration: Ratna Sagar Shrestha/THT, Published: May 11, 2017)



Picture 2. Better Work Bangladesh is working to improve compliance and competitiveness in the RMG industry (ILO, April 4, 2017).



Picture3. Organisation's social corporate responsibility.



Picture 4. Bangladesh's garment industry now a model for workplace safety (RMG Bangladesh, Apr 24, 2018)



Picture 5. Subcontracting factory in Bangladesh, Indirect Sourcing in the garment Industry: The Norm Rather than the Exception? (February 23, 2018).



Picture 6. Textile offcuts in Bangladesh. The report highlights the innovative use of offcuts as one measure that could help reduce the fashion industry's environmental footprint. (The Guardian, Nicola Davis, 7 Apr 2020)