Embedding employee engagement in SSCM: Evidence from the Bangladeshi garment industry.

By

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ABSTRACT

This thesis aims to identify the contribution stakeholder forces make in implementing SSCM within the Bangladeshi garment industry, where the early stages of the research focused on all stakeholders before focusing on employees' engagement in later research.

Due to the garment industry's heightened sensitivity toward environmental protection and social responsibility, SSCM has become an essential theme. Recent years have seen significant research interest in the implications of SSCM. However little research has offered insight into the actual implementation process of sustainable forces in factories' shop floor activities. This research addresses both qualitative and quantitative knowledge gaps around the divergence of the logic of stakeholder groups, the capability of internal stakeholders, the institutional mechanisms, and the significance of contextual factors in the acceptance of sustainability practices within the factory limits.

The research was carried out with manufacturing-based Bangladeshi garment industry stakeholder groups between 2019 and 2022. A parallel convergent mixed method approach was adopted to contribute academic knowledge and address the managerial concerns of sustainable performance of the garment industry. The crossmatching interpretation between findings highlighted numerous sustainable forces from the manufacturing point of view and categorized them as internal and external forces in conjunction with supporting, hindering and conflicting aspects of SSCM performances. Furthermore, several qualitative themes and quantitative constructs were identified as institutional mechanisms which could promote the garment shop floor's sustainable practices and the implementation of SSCM performances. Through moderated mediation analysis of a survey with 167 responses, this thesis highlighted how employee engagement could mediate the relationship between stakeholder decisions and firm performance.

Keywords: sustainable supply chain management, manufacturing-based stakeholders groups, sustainable practices, sustainable performance, Bangladeshi garment industry, stakeholder decisions, employee engagement, firm performance, stakeholder theory, institutional theory.

Dedication

To my parents

Md. Julhash and **Nazma Begum**

I dedicate this thesis.

‘Dad, I love you’.

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ACCORD	The Accord is an independent, legally binding agreement between brands and trade unions to work towards a safe and healthy garment and textile industry in Bangladesh
AEC	Asian Emerging Countries
AI	Artificial Intelligence
Alliance	The Alliance for Bangladesh Worker Safety, also known as "the Alliance"
BGMEA	Bangladesh Garment Manufacturers and Exporters Association
BKMEA	Bangladesh Knitwear Manufacturers and Exporters Association
CFA	Confirmatory Factor Analysis
CR	Composite Reliability
CSR	Corporate Social Responsibility
EcoP	Economical Performances
EFA	Exploratory Factor Analysis
EnvP	Environmental Performances
ETP	Effluent Treatment Plant
IJOL	International Journal of Logistics: Research & Applications
IJLM	International Journal of Logistics Management
ISL	International Symposium of Logistics
ISO	International Standard Organisation
LEED	Leadership in Energy and Environmental Design
LRN	Logistics Research Network
NHS	National Health Service
SC	Supply Chain
SCM	Supply Chain Management
SDG	Sustainable Development Goals
SocP	Social Performances
SPSS	Statistical Package for the Social Sciences
SSCM	Sustainable Supply Chain Management
SscmP	Sustainable supply chain management Practices
3BL	Triple Bottom Line
USGBC	United States Green Building Council
VIF	Variance Inflation Factor
WBCSD	World Business Council for Sustainable Development
WCED	World Commission on Environment and Development

CHAPTER 1

INTRODUCTION

1.1 Overview

This chapter provides the introduction to this PhD thesis. To begin with, the research background, along with the research motivation for this study, is presented. Therefore, the main research aims, and research questions are raised depending on the contextual literature on the Bangladeshi garment industry. Finally, an overall thesis structure is introduced at the endpoint of this chapter. The subsequent objectives of this chapter are:

- Research background: Why should we care about SSCM in the Bangladeshi garment industry?
- Research Motivation: What inspires the study of employee engagement in garment SSCM?
- Research aim: What is the purpose of this thesis?
- Research questions: What is different about this thesis?
- Thesis contributions: How impactful is this difference?
- Thesis structure: How do we accomplish the goal?

Table 1.1: Subsequent objectives of Chapter 1.

1.2 Research background

'There was screaming everywhere. I started pulling rocks away with my hands. We pulled out the injured with friends, but the screaming did not stop.

-A 30-year survivor of the Turkey earthquake told Reuters news (BBC, 2023)

'They tried to pull the concrete plates on top of us. People were pulling me from both sides of the plates, and they managed to get me out'.

-Shila Begum survived the Rana Plaza collapse (Clean Clothes Campaign, 2023)

Whilst one can be forgiven for things such as a disaster occurring once in a blue moon, history has taught us that it happened before and is likely to happen again. The Turkey earthquake does ring a bell about the similarity between the catastrophes, although there is a decade difference between the accidents. The way people are suffering, trembling under the rubble, the exact- what garment workers endured last time at the Rana Plaza accident in 2013. Admittedly, the earthquake happened may be due to the slow tectonic shift of Arabian, Anatolian, and African plates. Still, the vulnerable conditions of the old buildings made it worse, which is, in fact, a manmade disaster due to illegal constructions in Istanbul (BBC, 2023). In the same way, several manmade disasters cost Rana Plaza collapsed, like- illegal construction without proper permits, lack of supporting walls; the building was actually on a swamp land, and administrative failure when garment workers were concerned about the cracks but were coerced back to the building, are many of the reasons- which were entirely preventable. Likewise, hundreds of lives could have been saved if steps had been taken before the earthquake or the collapse.

With this in mind, if we narrow the landscape, 'sustainability' is still the biggest problem in the garment industry faces now. Issues such as 'sustainable material', 'nonbiodegradable ingredients', 'chemical consumption', 'climate degradation', and 'limited circulation' consume a great deal of environmental impact, whereas issues

like- ‘hazardous working conditions’, ‘low wages’, ‘forced labour’, ‘human rights’ resemble the economic and social crises faced by modern working-class employees/workers around the world. Although modern businesses adopted different strategies to tackle these issues- from the booming market for material innovation to growing interest in services, such as resale and repair, which might help keep clothes in circulation longer and diminish the environmental impact a little. The potentiality to move the needle as innovative new materials like plant-based leather face their greenwashing reckoning, and second-hand platforms become the hottest new accessories for the garment industry (BBC, 2023). Perhaps the biggest shift of all this year has been a bargain regulatory crackdown on both sides of the Atlantic (BBC, 2023). The authorities of Western countries have put large retailers under the microscope for their green marketing claims. In contrast, some of the country’s government ban on toxic ‘forever chemicals’ underscored just how many retailers still use hazardous substances to make their clothes (BGMEA, 2023).

On the contrary, manufacturer often used ‘sustainable’ or ‘sustainability’ umbrellas to tackle the criticism for not bringing or using sustainable practices in operations. In particular, Rana Plaza is the bigger hammer for the Bangladeshi garment industry, which pressures garment stakeholders to focus more on infrastructural development as well the social development of the manufacturing factory (Chowdhary et al., 2020, Huq et al., 2014). As a matter of fact, several researchers used empirical research (Nath et al., 2020, Hoque et al., 2021) showed that the Bangladeshi garment stakeholders often used social sustainability in one ideal/model factory and used that (factory) as a showcase for attracting foreign buyers (Nath et al., 2020), which originate profitability, but not exactly works for the sustainable practices as a whole. However, the query is - do these sustainable practices also work for garment employees, and what exactly garments employees perceived about employee engagement in sustainability, more precisely about sustainable supply chain management (SSCM)? Moreover, how can the employee contribute to the SDG (sustainable development goals) or shopfloor SSCM practices?

With these questions in mind, the following sections start with short literature, i.e., definitions of the garment, SCM, SSCM and employee engagement in SSCM to guide the reader. More precisely, the ‘textile and clothing industry’, ‘garment industry’, ‘supply chain’, and ‘employee engagement’ are defined primarily to clarify the meaning of these terms for the remainder of the thesis. The role and importance of ‘sustainability’ within the garment supply chain (SC) will then be outlined, along with the typical managerial approaches and their employee engagement that have already been adopted. Gradually, the following sections give an overview of the Bangladeshi garment industry as an empirical setting and give some insights into different sustainability practices and pressures on the current landscape. Hence, the research motivation, aims, and questions have been outlined. In the end, a summary of the chapter is also presented.

1.2.1 Definitions

Through the thesis, the terms ‘textile and clothing industry', 'garment industry', 'fashion industry', 'supply chain management’, ‘sustainable supply chain management', and ‘employee engagement’ will be frequently used and therefore must be initially defined to ensure clarity. Initially, the popular used wordings, like apparel, fashion, clothing, related to the garment industry, are quite synonymous. Therefore, it is necessary to identify the exact meaning of these words before further discussion.

Textile: The word ‘textile’ was invented early in the 17th century from the Latin word ‘textilis’, which means ‘woven’. It’s generally indicated as a branch of industry related to the manufacturing of cloth (Oxford Dictionary, 2023).

Clothing: It indicated the related items of textiles which are generally used to cover up the body (Oxford Dictionary, 2023).

Garment/s: It indicates an item of clothing (Oxford Dictionary, 2023).

Apparel: A specific part of the garment that includes embroidered ornamentation (Oxford Dictionary, 2023)

Fashion: It originated from the French word 'facon', which resembles the Latin word facere 'do or make' and indicates popular or the latest style of clothing or decoration of clothing (Oxford Dictionary, 2023).

From the above conversation, it is quite clear that these terms are quite different according to their production logistics but are often used as synonymous for each other. For this thesis, the researcher chose to use the term 'garment/s' to indicate the related industry and guide the reader accordingly.

1.2.2 Supply Chain Management (SCM) of the garment industry

Garment production is part of a large chain of businesses, which generally start with ranging from agribusiness (production of various fibres and cotton) to textiles (spinning, dying), then heading to garment making and distribution to the sales channel (i.e., wholesaler, retailer, and so on) to reach the ultimate consumer (Wen et al., 2019; Masson et al., 2007). In addition, the previous literature defines supply chain management (SCM) in many ways, and many articles have focused on SCM research (Defee et al., 2010; Schmenner and Swink, 1998; Stock and Boyer 2009). Briefly, it could be said that the creation of garments is an essential commercial chain for all clothing production countries, and the SCM process in this business is multifaceted in nature and tends to associate with a great number of partners, which consequently made the chain pretty long (Walker and Jones, 2012). For instance, Masson et al., (2007: 1700) suggested.

'This is mainly a capital-intensive process industry, the plain fabric then if required given the colour and pattern through printers and finishers, still to a large extent a capital-intensive process, and then the fabric cut, assembled and sewn into

individual garments with trims and buttons, etc. by much more labour-intensive garment manufacturers.'

In turn, the International Centre for Competitive Excellence (2017: 144) has described the garment supply chain as:

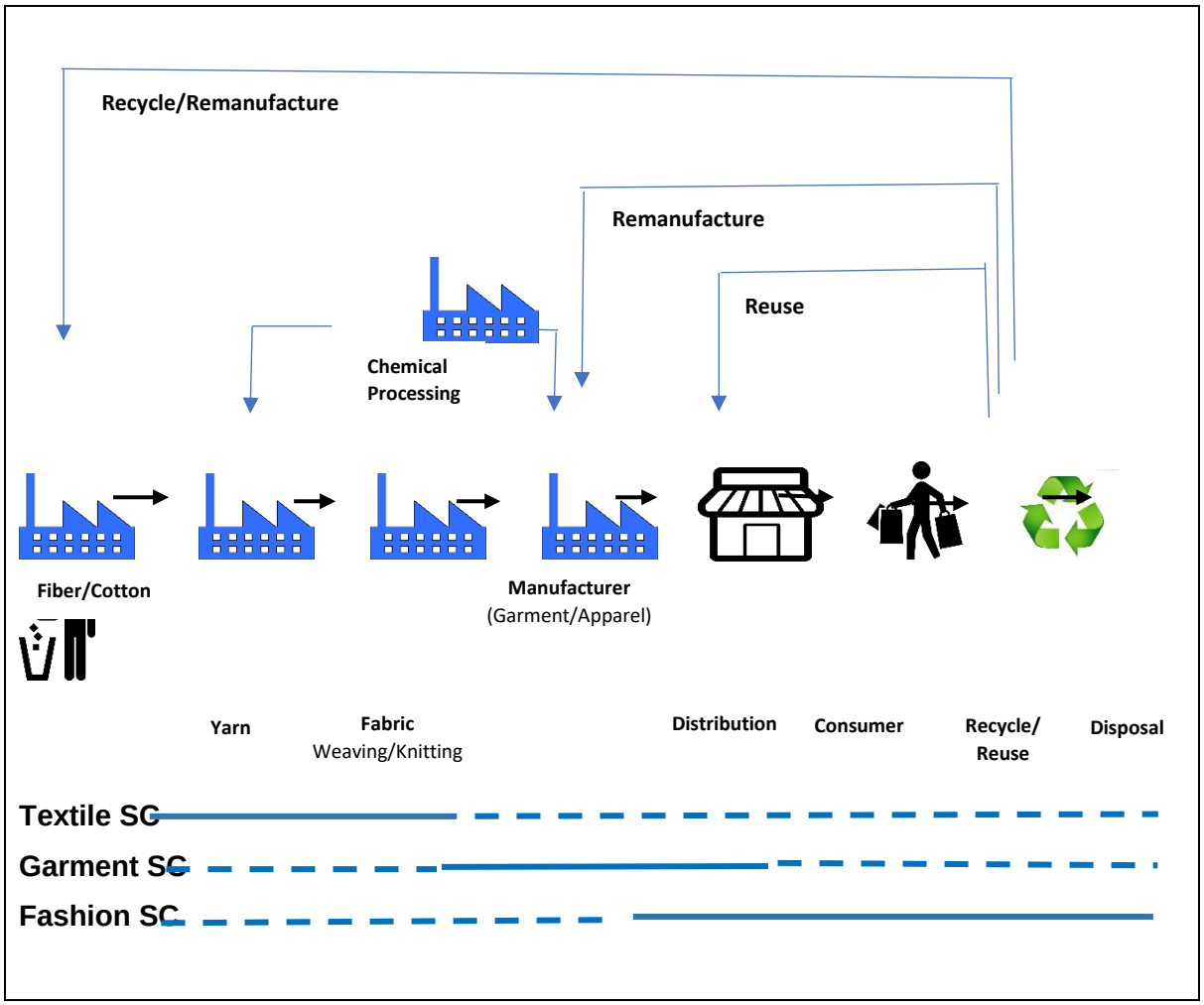
'[...] the integration of the business process from the end user through the original suppliers that provides products, services, and information that add value to consumers.'

These definitions clearly indicate that the SC can be regarded as a business process to conduct business-wide schemes, like- recycle or repair (Cooper et al., 1997) and Hewitt (1994) argued that the garment SC is not just a scheme but is regarded as a core of strategic management within the overall business process. Arguably, Zachariassen and Liempd (2010) investigate SCMs that implement an individual symbolic perspective, such as- logistics on a specific level of the manufacturing process and could argue with the view of the distinctiveness of garment SCM. For instance, a typical textile SC could be started by harvesting raw materials (fibre or cotton) and then processed for garment manufacturing through weaving, dying and knitting (Chowdhury et al., 2020). Hence then, comes the garment framing process (i.e., design, colour, cutting) to the distribution channel (i.e., wholesaler -inbound and outbound, retailer- inbound and outbound) and to be sold at a high street fashion retail store to reach the final consumer (Masson et al., 2007; Ruwanpura, 2015). This chain continued to reuse, recycle, and remanufacture until it reached the final disposal of the garment.

Below Figure 1.1 provided a typical SC of the garment industry. There is a difference between the underneath lines, the solid lines (i.e., under the diagram) represent the processing phase, and dotted lines represent the nonprecessing phase of the SC. For example, for textiles SC- is started with the material (i.e., natural, man-made) collection for raw fibre/cotton production, and then spinning for yarn production, weaving, and knitting for fabric creation- typically this 'fabric' is termed as grey fabric-

in the garment manufacturing business. From here on, the process continues towards garment SC where the main focus is on designing, dyeing, cutting, fusing, printing, sewing, washing, finishing and packaging of garment and becoming ready for distribution. The next is fashion SC, where the focus is, sometimes more, on the part of manufacturing (i.e., design and material planning, integration of the manufacturing process, warehousing, and fulfilment) and distribution of the garment through a wholesaler, retailer to the final consumer. The recycling, reuse and disposal of the garment is also part of the fashion SC cycle. To sum up, from this diagram, the implication is that the main focus of this thesis is on the manufacturer and onward distribution.

Figure 1.1: A typical supply chain of the garment industry (adapted from Chowdhary et al, 2013).



1.2.3 Sustainable Supply Chain Management (SSCM) of the garment industry.

Sustainability is no longer a new concept in any industrial sector, including the garment industry. Each face and facet of sustainability, namely economic, environmental, and social aspects, are becoming familiar and widely practiced by different industrial sectors (Huq et al., 2014). Products from various industrial sectors are unique in terms of their impacts on their life cycle at the raw material, manufacturing, and distribution phases, and very importantly at the use and disposal phases (Yadlapalli et al., 2018; Chowdhary et al., 2013). Hence, every industry should have its metrics to measure and address sustainability, and this is also true for the garment industry as well. To identify the importance of sustainability in the garment supply chain, it would be necessary to reveal the accurate meaning of 'sustainable' and/or ‘sustainability’ initially to get a good idea of it. For instance, Bruce and Daly (2011) suggested:

“Sustainability is the capability or progressive skill to endure which fall in the phase of human’s long –term continuance of well-being (e.g., economical, social, and environmental) while in ecology, it entails how the bio-logical system will remain productive and diverse over time”?

If this definition applied to the case of garment business, the shorter and diversified product life cycle of garment supply chain can be directly linked with the societal, economical, and environmental conditions of garment productions (Lee et al., 2015; Montoya et al., 2015; Barber et al., 2012; Carter and Rogers, 2008). This argument is quite convincing as businesses now realised that to get a competitive advantage over the market, they need to not only focus on production efficiency but also improve the environmental performance of their entire supply chain (Fawcett et al. 2007). But despite the facts, Ahi and Searcy (2013) depict that it would be necessary to assess firms’ corporate sustainability with its SCM characteristics. However, the implications of sustainability vary depending on the SC of the structure of the individual industry. For the garments business, some special features and structures of its SC include shortened lead times, faster inventory turnover and high order fulfilment rates for

customer demand at the pick points (Barnes and Lea-Greenwood, 2006). Arguably, the fast-changing mode of the garment industry has a highly competitive structure that not only puts pressure on costs but also the ability to offer the 'newest' possible trend to customers (Christopher et al., 2004). Therefore, it requires a high level of responsive SC combined with a certain level of efficiency on one side and on another, needs an inter-connected organisational relationship with its actors like stakeholders, suppliers, managers, retailers, customers, and employees and so on (Miemczyk et al., 2012; Adenso-Diaz et al., 2012).

Nevertheless, moving towards the SSCM in garment industry, SSCM has received increased attention from academics and practitioners in recent years and has been merged with the umbrella of triple bottom line (TBL) concept. Particularly, logistics-based supply networks of any industry typically embody with the entanglement of multiple stakeholders' interest in business operations and broader strategy. This viewpoint is also true for garment industry, the proactive management of sustainability in the garment SC recognizes the strategic importance of stakeholders' sustainability decisions, particularly in achieving long-term social, economic, and environmental value (Nath et al, 2020). Several SSCM researcher, such as - Carter & Rogers (2008); Seuring & Muller (2008); Giunipero et al. (2012); Ahi & Searcy (2013); and Kähkönen et al. (2018), offered many useful summaries of what is being done in the SSCM field and where is future research opportunities could lie. A key feature of SSCM literature is the critical contribution to proposing some comprehensive and robust definitions of SSCM. For example, Carter and Rogers (2008) defined SSCM as:

'The strategic, transparent integration and achievement of an organisation's social, environmental, and economic goals in the systemic coordination of key interorganizational business processes to improve the long-term economic performance of the individual company and its supply chains.'

Whereas Seuring and Muller (2008) defined SSCM as:

'Management of material, information and capital flows, as well as cooperation between companies along the supply chain, while taking into account goals from the three dimensions of sustainable development, i.e., economic, environmental, and social, which are derived from the customer and stakeholders.'

Both definitions emphasised the importance of the relationship between organisations' TBL performances and value creation to achieve sustainability. Similarly, Giunipero et al. (2012) extended the argument with 'supply management incorporation' to highlight the selection, evaluation, and management of any given industry's SCM (Nath et al., 2019). Moreover, Kähkönen et al. (2018) argued that SSCM is not just a management procedure but rather actually a holistic idea, where organisations have to be more comprehensive in understanding the sustainability practices, particularly when the SCs are multi-faced. This argument actually goes with the diversified product life cycle of garment SCM where the number of stakeholders and their activities are diversified and widespread. Another important fact is that, while mentioning the manufacturers of any industry, literature typically used terms like- sustainable procurement (Grob & Benn, 2014), and sustainable sourcing (Pagell et al., 2010; Schneider and Wallenburg, 2012) that integrate with TBL dimensions. Therefore, the researchers' adopt the definition of SSCM by Carter and Rogers (2008) along with the added version of Giunipero et al. (2012) to understand the activities of multiple stakeholders, and the surrounding institutional engagement that could have an impact on garment factories' SSCM practices as well as SSCM performances. In particular, this research fits this gap by inspecting how sustainability pressures from manufacture-based stakeholders can be facilitated through the interactions of current garment SSCM practices.

1.2.4 Employee Engagement in SSCM

Encourage employees to engage in environmental behaviours has become a vital topic in current business. A sustainability survey conducted by MIT and BCG Group

revealed that 'employee engagement in sustainability' has a substantial influence on organisation policies and practices (Berns et al., 2009) and environmental practices are an important concern within the SCM of firms (Carter et al., 2000; Sarkis, Gonzalez-Torre, and Adenso- Diaz, 2010). But arguably, organisations faced a wide variety of sustainability pressures when selecting raw material suppliers, recovering components, and disposing of waste and pollutants (Carter and Dresner, 2001; Sarkis et al., 2010) and sustainable management practices like encouraging employees to reduce pollution from work related activities, energy conservations efforts, and engage in environmental behaviours (Carter and Dresner, 2001; Carter, Ellram and Tate, 2007).

Nevertheless, a number of literature reviews of ‘employee engagement’ have been published in last decade (e.g., Carter & Rogers, 2008; Carter & Easton, 2011; Ashby, Leat, & Hudson-Smith, 2012), offering useful summaries of how organisations can get more of sustainability by involving employee within the business. For instance, how employees can be engaged with sustainability practices and where organisations can get most of it and where forthcoming prospects lie. This increasing number of literature also depicts the fact that the field is gaining importance. An important contribution of the literature reviews has been the proposal of comprehensive and robust definitions. For instance, Sharma (2014, 384) described it as –

…. The one who is not only fully involved in his work but also shares an emotional contact with the organisation with which he works and thereby acts in a way that promotes the interests of his organisation. ‘

This definition is particularly focused on the conceptualisation of the term by Kahn (1990) as the 'connection of organisational members’ selves to their work roles, demonstrating that highly engaged employees employ and express themselves physically, cognitively and emotionally in their jobs. Many studies have actually considered the link between certain types of relational practices with employees and sustainability performance. Some examples include the work of Schmidt et al. (1993),

which arguably described employee engagement as a modernised version of job satisfaction and maintaining a two-way relationship between employer and employee of the organisations.

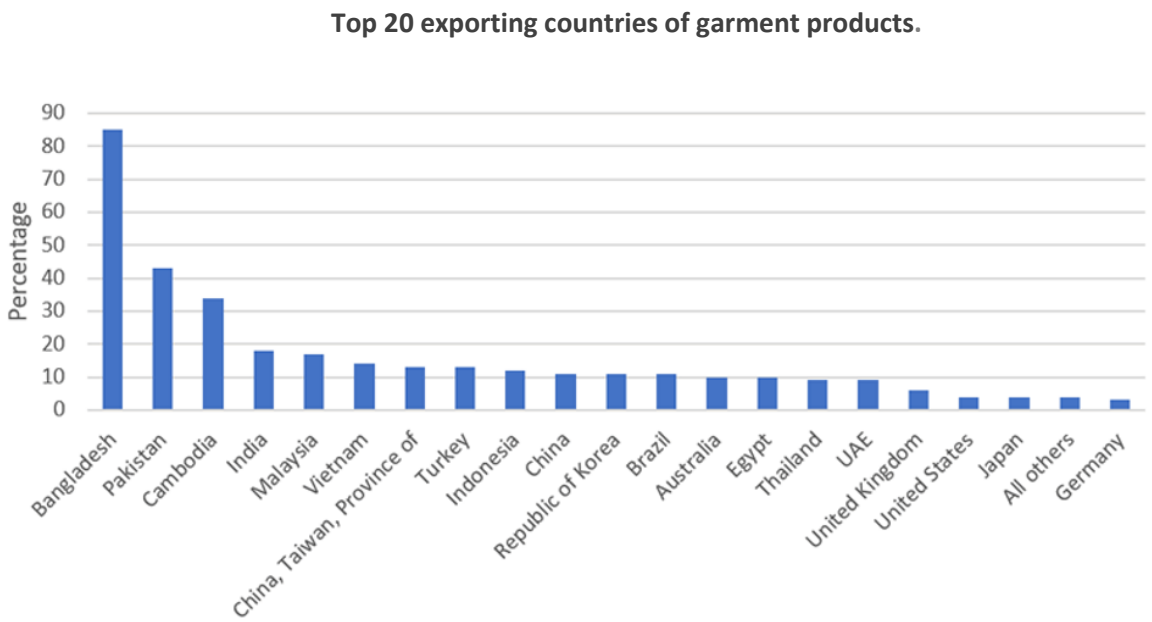
According to this, there is a knowledge gap between the genuine implementation of employee engagement in practices (Berns et al., 2009) and the behavioral approach of employee rather than the exercise of organizations in employee engagement (Schmidt, 1993). This also depicts the facts that more needs to be done to understand how organisations and employees work together and where SSCM and employee engagement can bring a radical change in organizations sustainability practices (Gonzalez-Torre and Adenso- Diaz, 2010; Pagell & Shevchenko, 2014). This research fits within the gap by examining how garment manufacturers could motivate employees' perceptions in terms of their engagement and organisations' sustainability practices.

1.3 Bangladeshi garment industry as a contextual background.

Historically, the garment sector has played an important role as a gateway to industrialization and economic development (Bernhardt, 2013) for developing countries, and this is very true for the Bangladeshi garment industry. As globalization emphasizes the importance of international outsourcing, the dispersion and geographical spread of trade and production for garment industry becomes increasingly evident (Locke et al., 2013). The outsourcing of international purchasing companies from various manufacturers in developing countries has led to an increase in the global supply chain. Over the decades, the world garment industry has undergone several production migrations since the 1950s, and they all involve Asia. The first migration of the industry took place from North America and Western Europe to Japan in the 1950s and early 1960s, when Western garment production was displaced by a sharp rise in imports from Japan (Adhikari and Yamamoto, 2006). The second supply shift was from Japan to the 'Big Three' Asian apparel producers (i.e., Hong Kong, Taiwan and South Korea), which permitted the latter group to dominate global garment exports in the 1970s and 1980s. During the past 10–15 years, there

has been a third migration of production—this time from the Asian Big Three to several other developing economies. In the 1980s, the principal shift was to mainland China and Bangladesh, but it also encompassed several Southeast Asian nations and Sri Lanka. In the 1990s, the proliferation of new suppliers included South Asian and Latin American apparel exporters, with new entrants like Vietnam and Cambodia waiting in the wings (Khanna, 1993; Gereffi, 1996). Figure 1.2 highlighted the top 20 garment exporting countries worldwide, with a justification for the production of the South Asia region (WITS, 2023). On the face of it, these statistics underpin the orthodox development model' of the globalisation of the garment industry and can be seen as the manifest of the classic pattern of 'global shift' in manufacturing as production bases move from one country to another country and one region to another region: from high cost to low-cost production locations (Dicken, 2013).

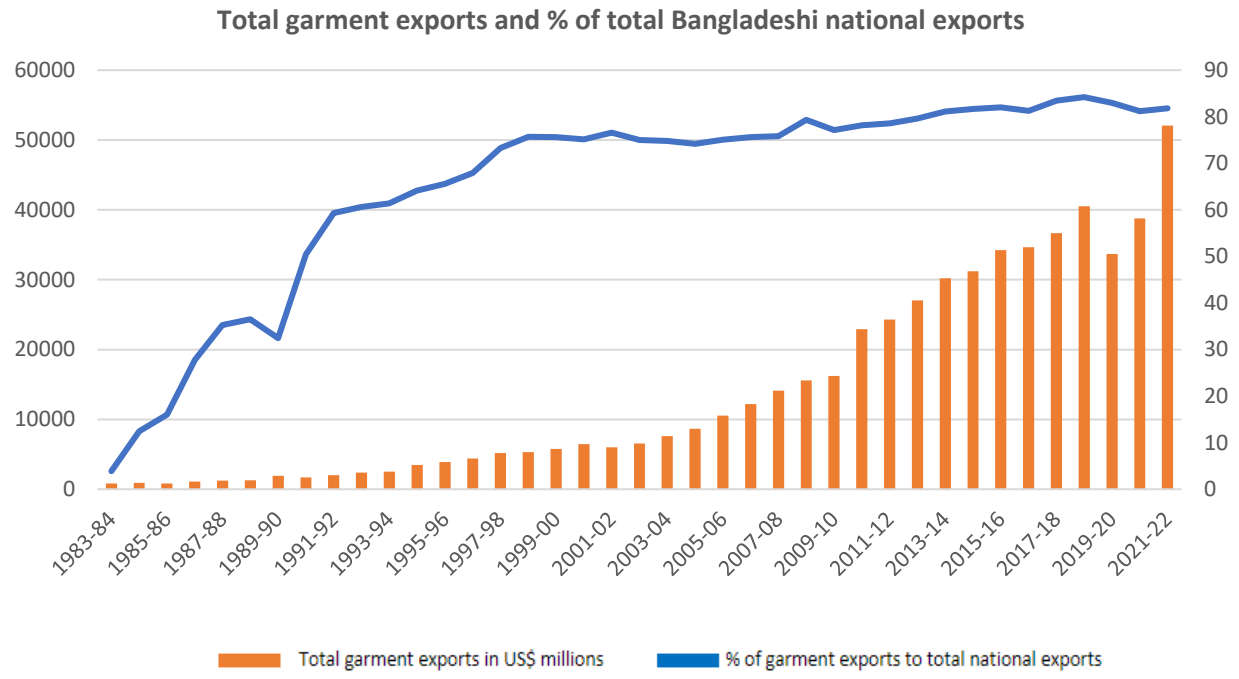
Figure 1.2: Top 20 garment goods exporting countries in 2020 (WITS, 2023).



In addition, with a relatively low-cost labour-intensive activity, the export garment assembly industry is one of the leading industries among others where developing countries like Bangladesh can offer comparative advantage in manufacturing, particularly through its labour and transportation cost (Wiils and Hale, 2006). Additionally, this industry has been considered a development lynchpin for

governments and entrepreneurs as it worked as a gateway for foreign investment, bringing foreign remittances (Chowdhary et al., 2015; Amaeshi et al., 2008). If a closer attention is paid at figure 1.3, the trends in total Bangladeshi garment exports and its contribution to national exports from 1983 to 2022, apart from having a pandemic, the growth rate is promising. Bangladeshi garment manufacturers exported ready-made garment (namely as RMG) for approximately 31.46 billion US dollars in 2021, which represents approximately 83.49% of the country's total merchandise export (BGMEA, 2023; Statista, 2023). Furthermore, this was an increase from the previous year, in which RMG exports in Bangladesh amounted to just nearly 28 billion US dollars (Statista, 2023).

Figure 1.3: Total garment exports and percentage of total Bangladeshi national exports (adapted from BGMEA, 2023).



Although there are certainly benefits, global garment supplies to developing countries may have many challenges and risks due to violations of social and environmental issues relating to SCM (Lund et al, 2018). For example, suppliers of Nike and Gap were accused of using forced and child labour in the spinning and weaving stage of the garment supply chains in South Asia including India, Pakistan, and Bangladesh

(Aydin et al., 2014). Most particularly, the Tazreen Fire tragedy in 2012 and the Rana Plaza disaster in the following year, where 117 people confirmed dead and 1,136 people were killed (D'Ambrogio, 2014), were housed RMG production of at least 27 global brands including Benetton (Italy), Bonmarche (UK), Cato Fashions (USA), The Children's Place (USA), El Corte Ingles (Spain), Joe Fresh (Loblaws, Canada), Kik (Germany), Mango (Spain), Matalan (UK), Primark (UK/Ireland) and Texman (Denmark) (Clean Cloths Campaign., 2023). These two tragedies identified as the deadliest manmade accidents and structural failure in the history of garment production, due to lack of health & safety conditions and poor infrastructure (Lund et al., 2014). Consequently, the stakeholders of global garment business including buyers, consumers, media, activitist, NGOs, and regulatory bodies, consistently exert institutional pressure on garment manufacturers for sustainability implementation in Bangladesh (Scholz & Smith, 2017; Reinecke and Donaghey, 2015). Several resolutions, such as Accord on Fire and Building Safety, LEEDs for infrastructural development, the Rana Plaza agreement for pay into the trust fund, and governmental legislations authority like- BGMEA (Bangladesh Garment Manufacturers and Exporters Associations) and BKMEA (Bangladesh Knitwear Manufacturers and Exporters Associations) imposed strict rules and regulation for a safer workplace. A list of industrial accidents in Bangladesh and the subsequent stakeholders' pressures and institutional actions is presented in Table 1.2.

Year	Reason	Death	Injured	Major institutional actions taken afterwards
2023	Market fire	0	18	The government and various organisations have pledged to take steps to improve safety in public spaces and marketplaces.
2021	Factory Fire	52	50	BGMEA implemented an ethical assessment for garment factories to meet the ethical standards score for its workforce.
2020	Gas boiler explosion	1	10	Activists and workers protest demanding unpaid wages and job sacked after retailers

				cancelled their orders (nearly 2.4 billion) due to corruption. Activist imposed code violation allegations on big retailers (i.e., Primark, Bestsellers, Zara), with compensation in full for lost earnings.
2019	Factory Fire	71		The retailer imposed a renovated fire safety inspection during the audit.
2016	Factory Fire Gas Leakage	30	12 100	The Accord on fire and building safety put more emphasis on LEED certification for factories' infrastructural development.
2013	Building collapse (Rana Plaza) Factory Fire Factory Fire	1136 8 10	100+	The US suspended trade benefits over safety standards and imposed pressure on the government to improve working conditions. 'Name and Shame' campaigns in first place against manufacturers caused reputational damage. ACCORD and the Alliance were formed to improve worker safety. Nearly 1600 manufacturing factories were closed, due to certificate cancelation.
2012	Factory fire (Tazreen Fashion)	112	150	The big retailers (Walmart) end up with a contract with the manufacturer. BGMEA Duke initiative to suspend more than 850 manufacturing factories certification.
2010	Factory Fire Factory Fire	26 21	100 50	Received criticism from ILO (international labour organisation) for child/forced labour. BGMEA and the government enforce pressure on practising training and safety standards in internal management, to prevent future accidents. In 2008, Bangladesh Green Building Council was founded, introducing

				LEED certification for sustainable green building.
2006	Factory Fire	65	12+	BGMEA enforces the 'corporate governance status compliance report' from garment and textile manufacturers.
	Building collapse	21	12+	
2005	Building collapse	64	100	Pressure from NGOs and consumers to ensure adequate health and safety standards.
			50+	
	Factory Fire	22		

Table 1.2: A list of industrial accidents in Bangladesh (adapted from The Diplomate, 2021).

Gradually things turned to have improved, but not enough. A decade after Bangladesh's most deadly factory fires, the fundamental problems in garment SCs, the disconnect between profits, accountability, and responsibility -remains. Several researchers identified that buyers claimed that they only source garment from manufacturers complying with ACCORD and LEEDS, but the reality is quite opposite (Nath et al., 2020; Chowdhary et al., 2019; Huq et al., 2020, Yadlapalli et al., 2018). Retailers still ignore workers' s safety, and the current Covid led to a brutal crackdown on garment workers' right (The Guardian., 2023). Millions of garment workers have lost their job since coronavirus shutdowns hit the retail industry, with nearly 5000 job losses in Bangladesh (Textile Today., 2022). Worker protests demanding unpaid wages, job layoff delivered a harsh reality of suppression while exercising the most fundamental human rights (BBC, 2022). For example, by April 2020 in Bangladesh a million garment workers had been sent home without pay or had lost their job after clothing retailers cancelled or suspended £2.4 billion of existing orders (The Guardian., 2020). Also, unpaid wages or job layoffs may not always accurately reflect reality, as disputes can arise in several forms (Nath et al., 2020; Gereffi and Lee, 2016; Huq et al., 2021). Scholars highlighted several garment sustainability challenges, i.e., -sustainable sourcing (Huq et al., 2021), manufacturers' holistic implementation of SSCM practices (Wilhelm et al., 2016), extended version of garment SCM (Meinlschmidt et al., 2018), multitier nature of garment SC (Nath et al., 2019),

contextual complexity (Awasthi et al., 2018; Kim & Davis, 2016) reduces the ability to determine the manufacturer's SSCM practices (Kim & Davis, 2016).

1.4 Research motivation

This thesis aims to study the stakeholder forces of SSCM, with a particular focus on employee as a stakeholder and their contributions in the Bangladeshi garment industry. To begin with, the interest grow form the post-graduation dissertation that the researcher took in Leeds Beckett University, the MSc dissertation highlighted a differentiation between LEED and Non-LEED factory and the subsequent practices, which was highly appreciated by the research Supervisor and influenced the researcher to pursue PhD with the focus on garment industry's sustainability practices. Moving forward, the associated literature, along with the empathetical connection towards Rana Plaza and the Tazreen fashion accident as the researcher was in Bangladesh, influenced the researcher to dig down the employee side of sustainability practices, specifically in the Bangladeshi garment industry's perspective. From here on, the interest is also supported by the requirement of a fellowship criterion that focuses on the empirical research of SSCM practices of the manufacturing-based industry of Bangladesh. Since the literature of the researcher's 2nd post-graduate dissertation research which particularly focused on a systematic literature review (SLR) of SSCM practices in the Asian emerging countries (AEC), highly influenced the take on the research gap. The SLR extensively identified the scarcity of social sustainability research in the context. In conclusion, the emotional attachment, as well as the research gap, influence the take on identification towards employee engagement in SSCM practices. Furthermore, as the author has a background in international business and supply chain management, the mixed method was identified as the research method. There are a couple of reasons also acted as motivation for the PhD research.

Firstly, more and more studies have been conducted to address the awareness of the damaging environmental consequences from the garment industry perspective, plus

employee-related sustainability issues have encouraged to adopt changed practices more rigorously than before. However, there is a dearth of research evaluating the influence from a multitier stakeholder perspective, particularly from an employee's point of view. In the multitier stakeholder perspective, described by Nath et al. (2019), manufactured-based suppliers (i.e., covering first-tier and second-tier suppliers of garment SC) experienced collective coercive pressures than mimetic and normative pressures. Based on their analytical results, suppliers were influenced mostly in the form of buyers' assessment requirements followed by pressure from other actors (i.e., auditor, government, union). Therefore, they urged to investigate the perceptions of more SC actors beyond upstream suppliers in future studies.

Secondly, several studies claimed that the sustainability practices which are embedded with employee's sustainability can boost the overall sustainable performance of garment industry. For example, themes like- compliance structures (Shadat et al., 2016), improved standards (Azim et al., 2021), job satisfaction (Romi et al., 2018), physical aspects of the workplace (Jones, 2018), job resources (Bakker and Demerouti, 2014), peer support (Jang et al., 2020), work roles (De Carlo et al., 2020) are reported in employee retention studies. However, the influence of employee engagement on garment SSCM is still unclear or even probably underrated. For example, Azim et al. (2021) emphasised the importance of employees' attitudes toward compliance standards, particularly highlighting appropriate salary as an economic aspect, employee rights and working conditions considered as the social aspect of compliance in the garment industry. Therefore, they addressed employee engagement as an under-researched area and advised measuring compliance from employee perspectives as future research.

Thirdly, garment manufacturing countries are mostly a mixture of developing countries that are significantly rooted in garment production for their economic development. Therefore, the foreseen key pressures to be seen are mostly connected with the economic side of the reported research. Pressures like collaboration (Adhikari and Bisi., 2020), supplier's management (Chowdhary et al., 2020), stakeholder influence (Habib et al., 2020), strategic goals (Umme et al., 2018), competitive advantage

(Sarker et al., 2020), and compliance standards (Islam et al., 2018) are repeatedly mentioned in Bangladeshi garment literature when talking about the key tools of ensuring sustainability in SC. These reflect practices of large, multinational garment retailers like ZARA (Join Life), H&M (H&M Take Care), and Primark (Primark Cares), who are trying to emphasize sustainability activities by highlighting their sustainable practices. Afterwards, these retailer activities mean that many of the identified themes remain key pressures for garment manufacturers and, therefore, for future research.

Fourthly, since 2000, 'sustainable performance' has been recognized as an effective measurement tool for measuring business' SSCM practices (Hasan et al., 2018), where SSCM practices describe a particular situation where two or more firms have engaged in value creation (along with financial flow) through strategic functions (Hofmann, 2005). This phenomenon is also appropriate for garment business. The Bangladeshi garment literature revealed that the garment SC is quite fragmented in nature and different horizontal relationships with lead firms and their SC partners are crucial for ensuring sustainable performance. They also identified 'how' different environmental issues, like governance mechanisms (Yadlapali et al., 2018), green enablers (Tumpa et al., 2019), green performance (Rashid et al., 2016), carbon emission (Habib et al., 2020), and waste management (Baskaran et al., 2012) can enhance sustainable efficiency through SC integration. But do these reinforce the sustainable performance of SSCM?

Finally, the fifth motivation comes from the author's interest in methodological issues of integrating qualitative and quantitative views on SSCM practices in contextual perspective. Through review previous literature on sustainable practices in garment industry, the author found that several researchers have used qualitative thematic analysis to identify the different forms of sustainable practices along with the performances, particularly from multiple stakeholders' viewpoint, while ignoring the quantitative prospective in the studies (Yadlapalli et al., 2018; Chowdhary et al., 2020; Nath et al., 2020). This reflects the scarcity of this topic. Therefore, the author is motivated to identify the relevancy or gap between SSCM practices and performance by using two different methodological choices- semi-structured interviews and surveys

for data collection, thematic analysis to identify qualitative perspective and moderating impact of SSCM practices by using extensive quantitative analysis.

1.5 Research Aim

The aim of this research is to examining the stakeholders' forces that enable the implementation of SSCM practices within the Bangladeshi garment industry, where the initial stages of the research focused on all stakeholders, before focussing on the employee's engagement in subsequent research.

1.6 Research Questions

Based on research aims, this thesis put forward four following research questions to answer further:

> **RQ1: Who are the inbound stakeholders in the Bangladeshi garment industry?**

To answer RQ1, an extensive literature review will be performed to identify the different types of stakeholders related to the Bangladeshi garment manufacturing process (i.e., Chapter 2) that also set the scene for the work. The qualitative findings (i.e., Chapter 4) will build on this further and will make an alignment to fit with the stakeholder theory. Similarly, the quantitative findings (i.e., Chapter 5) will also gather extensive information on lower-level employees of the Bangladeshi garment industry.

RQ2: How do these stakeholders exert institutional pressures to implement SSCM performances?

Moving on to the institutional pressure to SSCM implementation, chapter 4 and 5 will investigate how institutional pressures and mechanism affect the implementation of SSCM practices. Specifically, chapter 4 will underline several sustainable forces that are engaged with factory's shopfloor activities as sustainable practices. Two key themes – supporting and hindering in relation to both instrumental and normative aspects of stakeholder theory were identified in the reported findings. Moreover, in chapter 5 will also be highlighted several SSCM practices from employees' points of view and how these practices could exert institutional pressure on SSCM implementation.

RQ3a: What are the available stakeholder forces related to SSCM practices in the Bangladeshi garment industry?

RQ3b: What are the available stakeholder forces related to the SSCM performances in the Bangladeshi garment industry?

This will build on the qualitative findings (i.e., Chapter 4) of semi-structured interviews, and explore more the different types of sustainability pressure and their effects on SSCM implementation. Critical consideration will be taken to understand whether identified sustainable forces are mimetic, coercive, or normative to fit institutional theory. Next, consider how these forces vary between different stakeholders. In addition, chapter 5 will also be added to the research findings, to understand more institutional forces specifically from the perspective of employees to fit the institutional theory.

RQ4: How does Employee Engagement enable SSCM practices?

RQ4 focusses on the engagement (i.e., chapter 5) of the Bangladeshi garment industry, specifically, this will highlight the perceptions of lower-level employees of a manufacturing industry towards SSCM. Next, it will also underline how lower-level employees are engaged in the SSCM procedures of the garment industry. Critical consideration will also be taken to understand whether / how the employee could enhance / moderate the stakeholder's decision on sustainable practices and stakeholder performance.

Overall, Chapter 6 will summarise the interpretations of empirical data and explore how institutional theory and stakeholder theory are consistent with the findings of the study.

1.7 A summary of the literature comparison and thesis contributions.

By answering the four research questions, the author believes that this thesis contributes to previous literature on the Bangladeshi garment industry, particularly in SSCM literature. Although the academic and practical contribution will be discussed in detail in in chapter 7, here the author would like to briefly compare this thesis with previous literature and highlight its contribution in Table 1.3. Considering this thesis builds a theoretical framework (chapter 2) as well as highlights both qualitative (chapter 4) and quantitative (chapter 5) research findings, the author highlighted relevant Bangladeshi garment literature into four groups and compared those studies with the thesis to indicate its contribution. As sustainable practices frequently used in multitier stakeholder perspective, the author shall clarify this thesis primarily focus on garment shop floors SSCM forces from manufacturing-based stakeholder points of view. Therefore, the answer to the four RQs and the contribution insights generated from this is studies are most applicable to Bangladeshi garment SSCM.

Literature	Thesis Contribution
Empirical studies of Bangladeshi garment industry: *Definition:* The empirical research supported examined the Bangladesh garment industries as a contextual basis. *Reference:* Nath et al., 2020; Sarker et al., 2020; Chowdhary et al., 2020; Habib et al., 2020; Huq et al., 2020, 2013; Yadlapalli et al., 2020, 2018; Lim et al., 2017. *Scholarly contribution:* Empirically explored different aspects of the Bangladeshi garment industry, highlighting supply chain activities (multi-tier supply chain, governance mechanism, socially responsible mechanism, supplier sustainability). *Limitations*: Fails to summarise a generic mechanism to explain the practices of the shop floor, which can influence the overall performance of the business.	Through literature review and analysis, this thesis highlighted the types of available stakeholders (RQ1) and their engagement in the shopfloor's sustainable practices concerning stakeholder theory.
Sustainable Development / Green SCM / Sustainable Studies: *Definition:* Scholarly research focussing on green supply chain management, sustainable development, and sustainability without considering SSCM. *Reference:* Nath et al., 2019, Chowdhary et al., 2018; Sheikh et al., 2018; Sarker et al., 2020; Savino et al., 2018. *Refence for AEC's SSCM literature*: Mathivathanan et al., 2019; Khurana et al., 2015	By answering RQ2 and RQ3, this thesis highlighted the SSCM forces by highlighting the supporting, hindering, and conflicting aspects of SSCM performance. Moreover, the empirical findings highlighted the instrumental pressures and mechanisms in the implementation of SSCM practices.

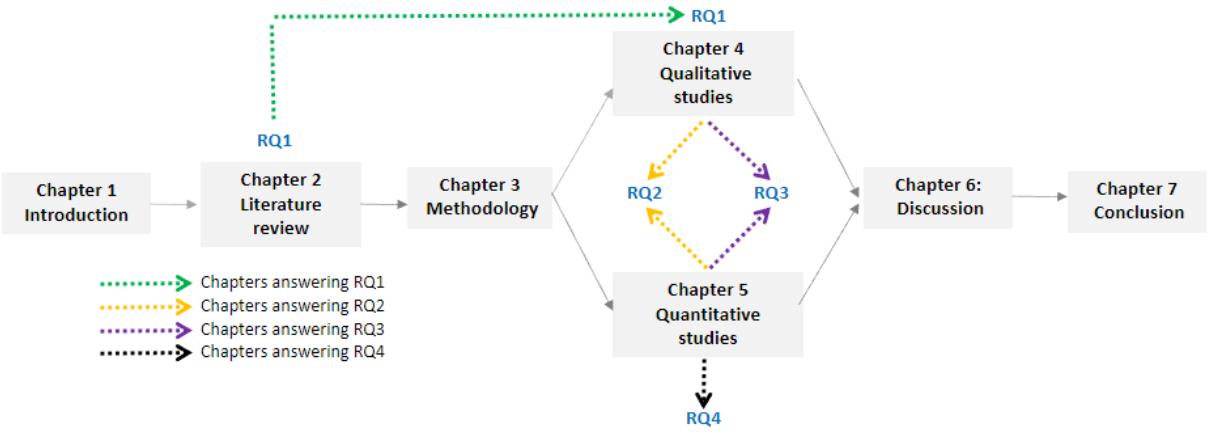
Scholarly contribution: From a sustainability perspective, this research investigated how different sustainable drivers can influence supply chain performance (sustainability drivers, green supply chain finance, sustainable performance, green business practices, supply side barriers, critical success factor, TQM practices, sustainable firm performance) *Limitations*: The Bangladeshi garment literature still lacks an SSCM perspective as a whole, mostly considering aspects of business performance.	
Employee engagement studies *Definition:* Employee engagement research focused on compliance issues in the garment industry without considering the SSCM point of view. *Reference:* Azim et al., 2021 *Scholarly contribution:* Through mathematical modelling, this study focusses on the mediating effect of job satisfaction on compliance with employee engagement. *Limitations:* Relies solely on employees to determine the level of compliance of factories, so the employee's perspective on SSCM enhancement was missed.	Responding to RQ4, this study underlined how shop floor employees engaged with SSCM procedures of the garment industry.

Table 1.3: Literature comparison and thesis contributions.

1.8 Thesis roadmap

This section presents a structure of the thesis. In total, there are seven chapters. The sequence of chapters together with the research questions addressed in Figure 1.4. The chapters specifications are briefly introduced below.

Figure 1.4: Thesis roadmap.



Chapter 1, a brief summary of sustainability, SSCM and SSCM in garment industry have been presented to start the cycle. Therefore, the contextual choice of the Bangladeshi garment industry has been justified along with the available SSCM literature. After that, research motivation, research aim and research questions were proposed. Finally, the literature and thesis contributions are also presented at the end. This chapter is built based on the following conference paper.

***Julie. S**. Potter and Geng. R. 2019. A review of sustainable supply chain management in the textile and clothing industry of Asian emerging countries. 23rd International Symposium on Logistics. Würzburg. Germany.*

***Julie. S**. Potter and Geng. R. 2020. A review of sustainable supply chain management in the textile and clothing industry of Asian emerging countries. Journal of Cleaner Productions. (Under preparation).*

Chapter 2, the literature review summarised the relevant literature on sustainable practices and sustainable performance related to the SSCM of the garment industries. After that, to answer RQ1, the stakeholder theory will be reviewed in-depth. To understand the phenomenon of RQ2 and RQ3, the institutional theory will also be reviewed. Furthermore, this chapter provides a critical argument about choice of field, for example, why do we need to understand SSCM in Bangladeshi garment industry? How lower-level employee engagement is important for sustainable practices. In particular, a critical understanding of the employee engagement literature was described here, which is starting to develop the scene for RQ4.

Chapter 3, the methodological choice will be present here for the whole thesis, with an extensive focus on both semi-structured and survey questionnaires development. The research paradigm and philosophical stands are discussed, followed by the sample selection procedures used. Basically, Chapter 3 justified the research rigour and generalizability stance.

Chapter 4, the thematic analysis of semi structured interviews is proposed here. This chapter highlights the current sustainable forces associated with stakeholder practices and sustainability performance. Specifically, this chapter highlighted the available stakeholder forces and how the stakeholder forces exact pressure to implement SSCM in the Bangladeshi garment industry. This also highlighted some contradictory forces that may hinder sustainable practices. With these, this chapter answered part of RQ1 and the whole of RQ2. This chapter is adapted from the following conference paper.

***Julie. S**. Potter and Geng. R. 2021. Identifying stakeholder forces for managing sustainable supply chain management: Evidence from Bangladeshi garment industry. 24th International Symposium on Logistics. Online.*

***Julie. S.** Potter and Geng. R. 2022. Identifying stakeholder forces for managing sustainable supply chain management: Evidence from the Bangladeshi garment industry. (Under preparation).*

In Chapter 5, extend the moderating mediation of employee engagement in sustainable practices. Several hypotheses were generated at the initial stage of this chapter, and subsequently some parts of RQ3, like-employees engagement in SSCM practices were answered. Therefore, extensive quantitative analyses were performed using SPSS and Hayes' Process Macro Softwires. The results of the relevant hypotheses were presented in the final stage, which eventually answered RQ4. This chapter is based on the following conference paper.

***Julie. S**. Potter and Geng. R. 2022. Overegging the pudding: the moderated mediating effect of employee engagement in sustainable performance of garment industry. LRN2022 (Logistics Research Network) Annual Conference 2022, Birmingham, UK.*

Chapters 6 and 7 summarise the discussion and conclusion of this thesis. In particular, **Chapter 6** described all the research questions and created an interlink between quality and quantitative methods- which was an important motivation for conducting this research. Chapter 7 concludes this thesis by highlighting the contribution, limitation, and relevant future research opportunities

1.9 Summary of the chapter

In this chapter, the background and motivations of the research are introduced. The research questions studied in this thesis, as well as the thesis structures, are discussed and listed. In the following chapter, the research questions will be studied and answered.

CHAPTER 2

Literature Review

2.1 Overview

Scholars said good research is typically grounded by theory/theories (Mentzer et al., 2008). Combined with thematic research, the practical issues faced by the typical organisation inform the provable research direction as much as the literature. This chapter details the importance of the theories in the SSCM literature. In particular, the relevancy of sustainability, sustainable SCM, and SSCM in the garment industry are presented in this chapter. The interdisciplinary nature of the SCM and the lack of boundaries with other philosophies, such as stakeholder viewpoints, institutional thoughts, and employees' beliefs, raises concerns about the organisations' being 'sustainable' abilities, also described as to guide research aim and address RQs - these challenges, concepts and logic from theories should be used (Halldórsson, Hsuan & Kotzab 2015). Specifically, this chapter signposted the research questions and their relevance to SSCM literature and research aim. The subsequent overreaching objectives in this chapter are:

1	Sustainability: Understanding the scope and factors influencing sustainability and sustainable development.
2	Sustainability and SSCM: Assessing the theoretical landscape of SSCM.
3	SSCM in garments industry: An overview of scholarly aspects of the forces of SSCM in the garment industry.
4	Theoretical underpinning: Assessing the relevance of Stakeholder and Institutional theory
5	Theoretical implication: Justifications for selecting theoretical perspectives.

Table 2.1: Subsequent objectives of Chapter 2.

2.2 Sustainability

Typically, the 'sustainable development' theme has been widely acknowledged within the last twenty years following the Brundtland Report from the WCED in 1987. Initially, it has been defined as 'the development that meets the needs of the present without compromising the ability of future generations to meet their own needs' (1987). But in the time phase, it gradually captured the strategic phenomenon (Victor, 1991) and was regarded as the cultivation of capital for the development of the next generation (Victor, 1991). Admittedly, the idea of sustainability and sustainable development has been around for centuries. In fact, it can be traced back to the 18th century when scholars like Francois Quesnay and Thomas Robert Malthus recognized the connection between economic sustainability and poverty and starvation. Adam Smith also emphasized the importance of job safety, competitive wages, and equality for employees (Varsei and Polyakovskiy, 2017). These early explorations of sustainability have paved the way for our modern understanding of the concept and its importance in creating a better future for all. In the case of management content, sustainable development is argued to balance with the responsibilities of economic, environmental, and social dimensions of growth, which is also known as the triple bottom line, popularized by Elkington (1994, 1998).

At present, sustainability has become fashionable in society's broader facets, government policy-making, business practices, and academic research. Institutions

have invested effort in setting standards and goals in sustainability, such as the Sustainable Development Goals (SDGs) from the United Nations and Global Reporting Initiative (GRI) report for helping corporations understand and communicate their sustainability development impacts on the issues such as climate change, human rights, and equality. More precisely, it appears as an ambitious and promising horizon, for example, to ‘end hunger, achieve food security and improved nutrition and promote sustainable agriculture’ by 2030 (United Nations, 2016, p.15) and 'a world free of poverty’ by 2030 (The World Bank, 2017). In this global atmosphere of sustainability, companies are critical to sustainable development; together with their supply chain, they are claimed to be ‘larger systems’ where strategic decisions and implementation of sustainable development at the supply chain level, do matter (Varsei and Polyakovskiy, 2017).

2.3 Sustainability in SCM and SSCM

If only the focus turns towards SCM and onwards to SSCM, a major development has occurred when sustainability issues are integrated into many aspects of SCM (Beske and Seuring, 2014). Several research studies, including reviews of the literature, have been published in recent years, reflecting how the field is gaining maturity (Touboulic and Walker, 2015) while offering comprehensive insights into the state of sustainable SCM research. According to Miemczyk, Johnsen, and Macquet (2012), there are different perspectives on defining sustainable SCM: namely, firm view; supply chain view; and employee view Table 2.2 Sustainability has been regarded as an internal analysis that is often shown the dyadic level of procurement and purchase research. For example, Walker and Jones (2008) and Hamprecht et al. (2005) argued that in the case of sustainability, evidence was collected to address relationships with suppliers and practising environmental and social responsibilities. The supply chain level considers stakeholders as more than two supply chain actors. Research at this level is conducted in relatively diverse spheres (Lambert, 2001; Walker et al., 2008). This level of analysis implies endeavouring to span the boundaries of the value chain to include upstream and downstream actors. Furthermore, research topics in this regard often include life cycle analysis (Bhandari et al., 2014; Del Borghi et al., 2014; Manfredi

and Vignali, 2014; Notarnicola et al., 2017) and closed-loop supply chain (Savaskan, Bhattacharya, and Van Wassenhove, 2004; Zhalechian et al., 2016). From the employee side, actors play a crucial role in bridging organizations, especially in the context of stakeholder and institution-based studies (Miemczyk, Johnsen, and Macquet, 2012, Lee and Humphreys, 2007) and their ability to connect different parts of a larger system is absolutely vital and cannot be underestimated. Without them, the smooth functioning of the system would be greatly compromised (Miemczyk, Johnsen, and Macquet, 2012).

Examples of definitions from the organisations' stakeholders/actors' level	**Reference**
SSCM is the management of material, information, and capital flows and cooperation between firms in the supply chain, considering the goals of all three dimensions, such as economic, environmental, and social, of sustainable development derived from the customer and stakeholders.	Saghafinia, Pingb & Amindoustc, 2015.
The sustainable supply chain discourse differs from mainstream supply chain management, as it involves recognising stakeholders within and beyond the supply chain.	Maignan, Hillebrand and McAlister, 2002.
SRB (Socially responsible buying) can be defined as the inclusion of the social issues advocated by organisational stakeholders in purchasing decisions. In this perspective, stakeholders are the agents that bring broad social demands to the attention of individual firms.	Maignan, Hillebrand and McAlister, 2002.
Examples of definitions from the operational/institutional point of view	
SCM is 'the integration function with primary responsibility for linking major business functions and business process within and across companies into a cohesive and high-performing business model.'	Perry & Towers, 2013

SCM is 'the extent to which supply management incorporates environmental, social, and economic value into the selection, evaluation and management of its supply base.'	Giunipero et al. 2012
GSCM is the process of integrating environmental concerns into the inter-organisational practices of supply chain management, including reverse logistics.	Zhu and Sarkis, 2011
'SSCM (sustainable SCM) as strategic, transparent integration, and achievement of the social and systemic coordination of key inter-organizational business processes in an organisation to improve environmental and economic goals in the long-term economic performance of the individual company and its supply chains.'	Carter & Rogers, 2008
Sustainable chain management (…) involves sustainable development issues insofar as companies can be held responsible for the social and environmental impacts arising along the supply chain. It demands that companies integrate ecological and social aspects into their decisions and actions, not only internally but also along those supply chains that determine the economic value of their business.	Wolters, 2003.

Table 2.2: Definitions of SSCM (adapted from Miemczyk et al., 2011)

Hence, several sustainability experts have shown that the 'how' and 'what' sustainability attributes are being adopted in SCM. This is also notable in supporting the formation of 'sustainability' standards/guidelines on 'how' organisations and their supply chains could approach sustainable SCM or gain sustainability in their existing SCM. Another view of defining sustainable SCM is from the financial perspective of organisations.

Starting from this point, the current study adopts the definition of Seuring and Muller (2008) that sustainable SCM is:

'the management of material, information and capital flow as well as cooperation between companies along the supply chain while taking goals from all dimensions of sustainable development, that is, economic, environmental and social, into account, which are derived from customer and stakeholder requirements (p.1700)"

Regarding the TBL approach, Seuring and Muller (2008) also view sustainable SCM as the result of managing flow-material, information and capital. This recalls the early work of Victor (1991), where he claims that sustainable development is the stock of capital. Furthermore, Seuring and Muller (2008) also argued that sustainable SCM exists through cooperation and collaboration with various stakeholders. In other words, they answered the question of whose responsibility it is to implement sustainable development. It is a collaborative effort rather than a solo performance belonging to any individual actor on the stage. With this view, Tate, Ellram & Kirchoff (2010) specified that:

'Firms are increasingly under pressure from stakeholders to incorporate the triple bottom line of social, environmental, and economic responsibility into operations and supply chain management strategies. (p. 19)"

Therefore, firms have been implementing various environmental practices in light of increased institutional pressure, increased community awareness of the adverse environmental effect of businesses, and the discovery of a potential competitive advantage by being 'environmentally sustainable' (Zhu et al., 2013; Delmas and Montiel, 2008) and must meet institutional expectations to gain legitimacy and thus survive (DiMaggio and Powell, 1991). Besides, aligned with Scott's (1995, 2013), three pillars of institutions and legitimacy, Pagell & Shevchenko (2014) added stakeholder engagement with TBL aspects and define SSCM as:

"…the designing, organizing, coordinating and controlling of supply chains to become truly sustainable with the minimum expectation of a truly sustainable supply chain being to maintain economic viability while doing no harm to social or environmental systems. (p.46)"

With an institutional viewpoint, Pagell & Shevchenko (2014) also tried to present an illustrative view between some 'institutional antecedents' and 'sustainability SCM issues', for example, 'how' and in 'which way' firms SC can gain or label as 'SSCM'. However, in both practice and research, there is evidence that transformational and relational aspects between institutions and SSCM have not been fully embraced. Carter and Rogers (2008) point out that most organisational efforts are not as productive as they could be concerning integrating the three dimensions of sustainability. They argue that 'existing approaches to environmental and social initiatives are fragmented and disconnected from strategy, leading to conflicting economic, social and environmental objectives' (Carter & Rogers, 2008: 378). Pagell and Shevchenko (2014) further support this point by saying that current SSCM research primarily reflects a narrow shareholder view and overly focuses on the economic (i.e., profit) implications of being sustainable. Furthermore, they argue that much research has focused on investigating how SC could be more sustainable following the individualistic nature of any industry. More recently, Giunipero et al. (2012, p. 206) highlighted the supply side and proposed:

"the extent to which supply management incorporates environmental, social and economic value into the selection, evaluation and management of its supply base".

From these highlighted definitions, it is clear that the idea of SSCM research as well as mapping the theoretical practices of a manufacturing-based industry's SSCM need more in-depth explorations. These arguments also suggested how recent research gradually advances and becomes closer to the SSCM aspiration of a particular industry base. Therefore, this research adopts the view of both Giunipero et al. (2012)

and Pagell & Shevchenko (2014) with a base from Seuring and Muller (2008) to understand the SSCM nature for the garment industry, where it can be the management of capital flow with cooperation among companies and stakeholders better to implement economic, environmental, and social responsibilities in SSCM.

2.4 SSCM forces and the garment industry

Strategically, forces indicate the factor/s or drivers that cause a particular phenomenon to happen or develop (Oxford Dictionary, 2019). To recognise the key forces of SSCM related to the garment industry, this section addresses the relevant literature on SSCM forces, drivers, and practices based on the garment industry. For functional purposes, several studies used Elkington's (1998) TBL approach to define sustainability participation in organisational performance, mainly environmental, economic, and social aspects (Ahi & Searcy, 2013). A key feature of why SSCM researchers widely applied the TBL approach can be the adaptability of these business aspects and their associative performance, which can be related to any type of business activity. For example- economic performance resembled the activities that related to business profit maximisation and revenue-based aspects (Carter & Rogers, 2008). In contrast, environmental performance resembled the holistic balance between the integrative development of business and its eco-logical growth (Nath et al., 2019). Similarly, social performance promotes the integration of social activities of a business, particularly from all levels of stakeholders (Winter & Knemeyer, 2013). As such, for the manufacturing industry, all these aspects of TBL also work for the garment industry. Therefore, the sections outline the key forces of the garment industry related to sustainability dimensions.

2.4.1 Economic dimension

Researchers showed that, typically, the economic dimension of sustainability is quantitative in nature, which usually deals with forces, rooted in stakeholders' engagement with resource management (Winter & Knemeyer, 2013). Several

researchers described the economic dimension as the achievement of economic growth that involves the overall value creation of the economy's production system, where the success of macroeconomic stability involves low unemployment rates, positive trade balances, and other macro-advantageous fiscal and monetary conditions (Ahi & Searcy, 2013; Jajja et al. 2019). On the contrary, Carroll (1991) argued that the economic dimension actually, provided the foundation of why businesses carry out philanthropic responsibilities, such as legal, ethical, community welfare etc. In line with this, several contextual researchers identified several aspects, such as financial performance, long-term competitiveness, profit maximisation at the organisational level, and the monetary impact on stakeholder groups generally deals with economic dimension (Chowdhary et al., 2020; Nath et al., 2019). The key identified aspects are presented in Table 2.3.

Aspects	Outline of Dimension	Forces identified in the literature on the garment industry
Stakeholders' engagement	Consideration of stakeholders' engagement based around firms working together (e.g., to share resources like techno-savvy employees and finance) to boost the performance of the supply chain.	Collaboration (Habib et al., 2020), supplier management (Chowdhary et al., 2020), stakeholder influence (Nath et al., 2019), (Sivaprakasam et al., 2015), management attitude (Amindoust & Saghafinia, 2017).
Strategic engagement	Firms' strategic goals provide a sense of direction and outline considerable sustainable planning.	Strategic goals (Govindan et al., 2013), trade barriers (Tumpa et al., 2019), compliance standards (Habib et al., 2018)
Pricing Impact	A significant change in the pricing of the product portfolio can bring about changes in decision-making while ensuring SSCM activities.	Pricing (Kannan, 2018)

Long-term advantages	Firms tend to address the existing problems associated with the garment industry and identify possible solutions that can ensure long-term advantages.	Competitive advantage (Jajja et al. 2019)
Monitoring influence	Different initiatives are taken in the garment business to continuously improve the foundations for sustainable management (e.g., employees' responsibility towards sustainability, eco-communication, and biodiversity).	Sustainable practices of sub-suppliers (Nath et al., 2020), involvement of retailers (Jayant & Azhar, 2018)

Table 2.3: Scholarly aspects related to economic dimensions.

2.4.2 Environmental dimension

To clarify the environmental dimension, Steurer et al., (2005) suggested: the aspects of business operation related with the protection of the natural resources through accountability, carbon emissions and avoidance of hazardous damages mainly related with ecological/environmental dimension of sustainability. Some serious sustainability challenges, such as clean air targets for 2040, circulation risk, green materials, and carbon emissions (Reuters, 2023; George et al., 2016), are directly linked to the environmental damage to the garment business. Furthermore, these growing sustainability challenges and concerns have attracted the attention of industry leaders and policymakers (Geissdoerfer et al., 2017). To effectively protect the natural environment from the negative impact of business operations, governments and even supranational bodies, including the United Nations, have adopted new regulations to address these sustainability issues (Geissdoerfer et al., 2017). Yet, some business practitioners view environmental protection as a form of regulation rather than business interests that can hinder companies' competitiveness while increasing the initial manufacturing costs (Wilkinson et al., 2001). Conversely, business manufacturers are keen to improve their environmental performance to satisfy multiple stakeholders and achieve a better reputation and competitive advantage in the market (Epstein, 2018). Table 2.4 exhibited some of the most mentioned aspects of the environmental dimension related to the garment industry

Aspects	Outline of Dimension	Forces identified in the literature on the garment industry
Rules & Regulation	Guidelines and regulations for sustainable operation can create visibility in the supply chain and boost ethical and environmental sustainability	Government mechanism (Yadlapalli et al., 2018), enablers (Tseng et al., 2018), organic materials (Paras et al.,2019), code of conduct (Ablander et al., 2016).
Financial risk	Cost of production, disposal of unsold stock, and waste management process in gaining sustainability.	Waste management (Phan et al., 2020), increased cost (Baskaran et al., 2012), infrastructure development (Raut et al., 2019).
Emissions	Energy footprint and value analysis of supply chains in line with customer awareness.	Carbon emission, circularity of garment, green performance (Chowdhary et al., 2020)

Table 2.4: Scholarly aspects related to environmental dimensions.

2.4.3 Social dimension

The final dimension is social sustainability; researchers used numerous terms, such as ‘social responsibility’; ‘corporate social responsibility (CSR)’; ‘social performance’ and ‘corporate social performance (CSP)’ to lay the argumentation related to the social performance of the business (Nath et al., 2020; Chowdhary et al., 2019; Carroll & Shabana, 2010). Specifically, while describing the ‘social dimension’ of the garment business, the above terms are often used interchangeably to describe the same phenomenon (Jajja et al., 2019). As a matter of fact, at the early stage of the social dimension, Carroll (1979) defined ‘corporate social performance’ as a catalogue of various social issues related to business operations where social responsibility incorporated with the philosophy of social reaction under one heading (Nath et al., 2019). Carroll (1979) also suggested that the local communities' anticipations typically

estimate several attributes, such as legal, ecological, ethical, and discretionary responsibilities for workers. Garment researchers extended this argument with the basic needs of garment workers, quality of life, worker rights, decent work, health and safety standards, social welfare, diversity, gender issues, and overall development of social capital with individual capabilities (Adhikari & Bisi, 2020; Jajja et al., 2019; Srisuponvanit et al., 2019; Paras et al.,2019; Soundarajan & Brammer, 2018). As shown in Table 2.5, social dimensions also include labour conditions, child labour, human rights, minority development, the inclusion of disabled people and gender (Yawar & Seuring, 2017). Within SSCM research, managing social sustainability issues is a latent way of reducing risk and improving economic performance (Klassen & Vereecke, 2012).

Aspect	**Outline of Dimension**	**Forces identified in the literature on the garment industry**
Monetary incentives	Incentives are offered to retain current workers/employees in their existing workforce.	Labour conditions (Klassen & Vereecke(2012), child labour (Chan, Khara & Xue (2012), minority (Preuss & Brown (2012), gender issues (Preito-Carron (2008), and inclusion of disabled people (Hall & Matos (2010).
Worker's right	Firms must maintain a distinct responsibility towards their workers to ensure sustainability in the factory. For example, keep a series of workplace health and safety rules to ensure that workers' rights are not damaged.	Equal pay and decent work (Soundarajan & Brammer, 2018).
Regulation	Regulatory policy is about achieving government objectives using existing laws and other	Training and development (Zorzini

	instruments that can enhance sustainability in the garment business.	et al., 2015), infrastructure's, safety standards.

Table 2.5: Scholarly aspects related to social dimensions.

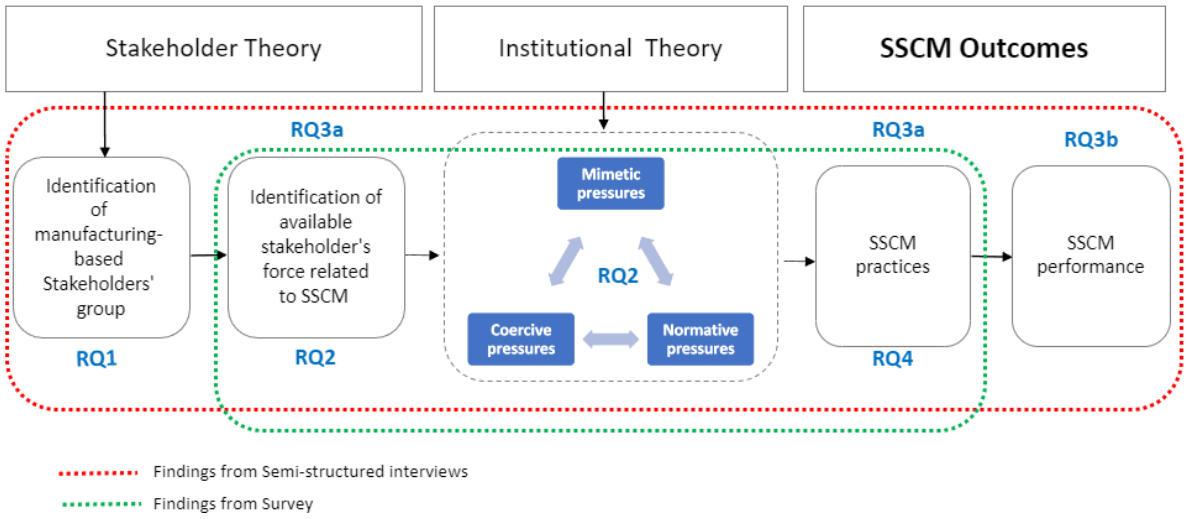
2.5 Theoretical underpinning

Turning to the theoretical foundation, mostly to recognise the theories available in the literature and the theoretical foundation of this research, this section started with addressing the relevant theories of SSCM as organisational theories are 'described and justify the behaviours, design, or structures of firms' (Varsei and Polyakovskii, 2017). Furthermore, considering the definitional variety and practical challenges found in the SSCM literature, it appeared necessary to understand how theories generated the drivers used in the field to make sense of the multifaceted issues encompassed. More precisely, here the main focuses are on the various theories 'used' in existing SSCM research and 'how' they encounter the sustainability drivers.

In 2011, Carter and Easton reviewed the literature to explore the theories used in sustainable SCM and revealed that stakeholder theory and resource-based theory (RBV) were particularly highlighted rather than others. Sarkis, Zhu, and Lai (2011) reviewed the green SCM literature and reached a similar conclusion. Nine theories were identified in sustainable SCM, including RBV, stakeholder, institutional and dynamic capabilities. In Touboulic and Walker's (2015) review of theories in sustainable SCM, a tendency was revealed to import theories into sustainable SCM research from other fields, focusing on RBV, stakeholder, and institutional theory. Furthermore, Pagell and Shevchenko (2014) point out that current research in the field has not fully captured all impacts of the supply chain, that is, economic, social, and environmental (that is, Elington's TBL), mainly due to a theoretical distortion in favour of profit maximisation and economic beneficial practice.

Examining such different theoretical lenses helps to identify the drivers for sustainability implementation and analyse the internal and external factors that influence the implementation of sustainable supply chains (Rungtusanatham et al., 2003). Accordingly, Varsei et al. (2014) have elaborated on the discussion of RBV, stakeholder, institutional, and social network theory and identified that stakeholders play a key role, both internal (i.e., shareholders, trade unions, employees) and external (i.e., customers, suppliers, competitors), and highlighted that institutional forces often come from these external stakeholders. Conversely, DiMaggio and Powell (1983), institutional isomorphism, such as coercive pressures come from the direct and indirect collaboration between the internal and external stakeholders' collaboration and mimetic pressures influenced by the internal and external assessment mechanism (Nath et al., 2020; Huq et al., 2016). However, implementation dilemmas, conflicts, and trade-offs exist within garment SSCM located in challenging institutional contexts, which may create pressures to maintain SSCM practices. As such, SSCM practices and performance implementation are fragmented across garment SCM (Huq et al., 2016). Still, institutional theory can help to provide an understanding of the institutional logic and specific context-dependent factors behind these variations (Sauer & Seuring, 2018). By following this argument, this study applied two theories-stakeholder theory and institutional theory to understand the implementation of SSCM forces in the garment industry's SSCM practices.

Figure 2.1: The basic theoretical framework.



A basic theoretical framework for integrating SSCM practices into garment SSCM is shown in Figure 2.1. Based on the review of substantive literature in relation to the research aim and questions, four common thematic landscapes appearing in the literature identification of manufacturing-based stakeholders' group in the Bangladeshi garment business, identification of manufacturing-based stakeholders' group, available stakeholder's forces related to SSCM, associated institutional pressures, SSCM practices and SSCM performances. For the purpose of developing a basic SSCM framework, stakeholder theory is expected to identify the stakeholder group and provide reasons to understand the existing sustainable forces that are currently used on the garment shop floor. Gradually, the institutional theory used to understand the underlying pressures and mechanisms placed upon garment employees to implement SSCM practices could lead to the SSCM performance of the business. Finally, a focus on employee engagement also discussed depends on institutional mechanisms. In the following sections, each theoretical perspective and its relation to the garment SSCM practices are explained in detail.

2.5.1 Stakeholder theory.

According to Horisch et al (2014, p. 341), 'stakeholder theory and sustainability management share a lot of ideas and thus stakeholder theory can be purposefully applied in the context of sustainability management'. Specifically, this argues that stakeholder theory is an important theoretical perspective for studying sustainability management and related concepts. The major development of this view is not only the popular version of the stakeholder theory of Freeman (1984), but also the significance of the parallel development of the stakeholder theory of Donaldson and Preston (1995). In his book Strategic Management: A Stakeholder Approach, Freeman (1984) defined stakeholders as 'any group or individual who can affect or is affected by the achievement of an organisation's objectives' (Freeman, 1984, p. 46). This definition is extensively cited and facilitates a re-conceptualization of the structure and boundaries of the organization, thus attracting the attention of new silent stakeholders outside the main stakeholder groups of the organization (Maignan & Ferrell, 2004). To describe

these main stakeholder groups, Clarkson (1995) suggested stakeholder groups of workers, employees, management, owners, shareholders, investors, suppliers, customers, etc. Several researchers identified shareholders as the primary interest group in a business while Freeman (2002) argued that the key aim of doing business is to gain benefit and maximize wealth for all the parties by obeying the legal and ethical norms of the country. As opposed to Freeman (2002), also claimed internal stakeholders are the bridge between external and internal groups while observing the fiduciary duty and can be influenced by the business actions. This argument passes through importance towards management groups, especially while business observes mostly the manufacturing operations.

On the contrary, Clarkson (1995) defined external stakeholders as 'those who influence or affect, or are influenced or affected by the corporation, but are not engaged in transactions with the corporation and are not essential for its survival'. Typically, these external stakeholders' groups include local communities, governments, legal authorities, media, NGOs and other available societal interest groups (Clarkson, 1995). Furthermore, Maignan and Ferrell (2004) added communities and the surrounding environment to external stakeholder groups. Although all external stakeholder groups may not be involved in direct transactions or operational activities within the company, this type of group has significant power as public opinion towards the organisation's sustainable practices and performances (Silvestre, 2015). Likewise, Mitchell et al (1997) argued that maintaining a healthy relationship among all stakeholders is difficult due to their diverse levels of power, social acceptance, and urgency. To overcome the struggle Hörisch et al. (2014) suggested creating a mutual interest from both the internal and external groups, especially for the sustainability practices which also can boost the survival of the business operations for a longer period (Donaldson & Preston, 1995).

To move forward, several researchers followed Donaldson and Preston (1995) differentiation of stakeholders' groups as descriptive, instrumental, and normative while describing the organisation's management process, specifically while highlighting internal stakeholder expectations related to sustainable practices (Sangle

& Ram Babu, 2007; Mitchell et al., 1997). For example, normative groups attempt to highlight ethical reasoning to support stakeholder SSCM claims, and instrumental groups justified the long-term benefits of involving sustainable practices in operational activities (Jamali 2008). Criticism was also raised with the instrumental group, as it just highlighted the economic dimension of sustainability rather than attempting to justify the social dimension (L'Etang 1995). In response to this, Jamali (2008) suggests that firms may need to classify their stakeholders at the discretion of their decision-makers, which is motivated by instrumental and/or normative groups. Hence then, Schwartz (2006) and Miles (2017) suggested using some stakeholder analysis tools, such as Mitchell's (1997) stakeholder salience model, to prioritize stakeholder engagement in SSCM operations. Furthermore, Longo et al. (2005) argued while describing corporate social responsibility, that each stakeholder group have to perform a certain engagement to be classified as a 'socially responsible' citizen of business. Thus, SSCM practices with a three-dimensional lens appear to align well with stakeholder theory. Table 2.6 outlined a variety of stakeholder groups and their participation in the creation of business value in SSCM practices.

Stakeholder group	Stakeholder engagement in value creation grid towards SSCM practices
Employees	Health and safety standards, training and development, workers' performance, social equity.
Suppliers	Partnership with other stakeholders, selection of sub-suppliers, use of green materials.
Customers	Product quality, consumer protection, transparency regarding product information.
Investors	Competitive advantage, return on investment, fair, and honest business practices while maintaining stakeholder relationships.
Community	Community well-being and community development.
Environment	Environmental safety and protection, carbon emission, and circularity of the product.

Table: 2.6: Stakeholder engagement in SSCM practices (adapted from Longo et al., 2008).

2.5.1.1 Stakeholders group in garment industry

However, the stakeholders groups in the garment industry are quite diversified as SC. Several garment scholars analyse stakeholder's behaviour through empirical studies, to understand the behavioural pattern and their engagement in the adoption of SSCM practices (Nath et al., 2019; Mausumi and Rahman, 2018; Sajjad et al., 2015). For example, Nath et al., (2019) recognized the importance of embedding sustainable practices in multitier stakeholders' engagement, through institutional logics-social, environmental, and economic, and revealed that institutional pressures could come as a form of suppliers' selection and assessment mechanism, followed by third party audit assessment. Mausumi and Rahman, (2018) illustrated through empirical studies- how stakeholder operational decisions could improve garment workers occupational health and safety (OHS) value classes vice versa ensure social responsibilities of business. According to Sajjad et al. (2015), the garment business needs to meet the expectations of foreign retailers, as well as no less than half of the OHS value classes associated with each stakeholder group, basically classified as 'socially responsible' group. Table 2.7 outlined the available key stakeholders of garment industry which led business to create value for them.

Stakeholder group	Stakeholder Engagement in the Textile Industry toward SSCM Practices
Factory owners	Contribute through complying with existing laws, implementing social responsibilities, and strategical decision-making.
Financiers/investors	Investment to build infrastructure's
Suppliers	Green sourcing, sustainable materials.
Retailers/buyers	quality maintenance, labour right, social responsibility towards garment employee/workers.
Workers/employees	Sustainable mindset.

Owners' Association/BGMEA officials	Ethical auditing, certification
Government officials	Political commitment, effective coordination, and continuous monitoring.
Management	Ensure standard compliance, strategical decisions on day-to-day operations.
Union Leaders	Effective mediation role between owners and workers.
Social workers	Strengthen the compliance process by carrying neutral research, feedback on actions, and coordinator between stakeholders.
Communities	National and local environmental initiatives.
Media	Creating awareness through continuous publicity.
Customers & Others stakeholder group	Sustainable mindset, ethical buying, protesting Sustainable mindset, eco-friendly.

Table 2.7: Garment stakeholders' participation in SSCM practices (adapted from Mausumi and Rahman, 2018)

In summary, stakeholder theory is useful to identify the forces that support and hinder SSCM, especially to identify the SSCM performance of the SSCM performance of the manufacturing-based industry. The crux of the matter is to divide the stakeholders' group, internal and external, depending on the sustainable responsibilities of the group towards business operations. Moreover, stakeholder's forces are relevant to extend the understanding supporting SSCM practices, such as- what exactly drive shop floor garments' stakeholders to adopt SSCM practices into their day-to-day operations. As Sajjad et al. (2015) underpinned, 'to acquire social legitimacy and competitive advantage, businesses respond to the growing economic, social, and environmental needs of stakeholder groups'. Accordingly, several studies have used stakeholder

theory to investigate the aspects/drivers/motivations of business SSCM practices as well as performances (Sajjad et al., 2015; Silvestre et al., 2015; Klassen and Vereecke 2012). For example, Sajjad et al., (2015) have identified various SSCM drivers of stakeholders' groups through an empirical study and investigated -how SSCM drivers could drive manufacturing organisations to implement SSCM practices. Likewise, Klassen and Vereecke (2012) argue that the descriptive aspect of stakeholder theory explains how organisations identify their internal and external stakeholder groups and interested individuals including regulators, NGOs, buyers, and suppliers when addressing sustainability issues in supply chains. However, SSCM research barely acknowledges the importance of sustainable forces, while investigating the enablers/drivers of SSCM performance in the garment business context (Nath et al., 2019; Huq et al., 2014). Therefore, the choice of stakeholder theory to investigate the sustainable forces in SSCM practices appears to be worthy and viable.

2.5.1.2 Stakeholder forces in SSCM practices.

This section explores the SSCM practice-based stakeholder forces, particularly identified by the SSCM researcher. To begin with, a distinguishion between SSCM forces, internal and external observed (Nath et al., 2019, Walker & Jones, 2012), and then a discussion of how these forces related with the SSCM practices is also presented.

2.5.1.2.a Internal forces

Research suggests that the diversified interest and decision-making power of SCs stakeholders could leverage the positive sustainable performances (Alvarez, Pilbeam, & Wilding, 2010). As such, the role of SCs stakeholders become particularly visible while considering intended assets like -trust, quality, communication, and mutual understanding in relationship which typically recognised as stakeholders' sustainable forces (Alvarez, Pilbeam, & Wilding, 2010; Carter & Jennings, 2002). Initially

emphasised was exploring ways to establish sustainable competitive advantage while considering the relationship between sustainable forces and stakeholder performance (Solér, Bergström, & Shanahan, 2010). Specifically, Barney (1991) showed that the competitive advantage does not arise merely from within the organisation's boundaries (Dyer & Singh, 1998), whether it can achieve through the acquisition and use of unique resources with the assistance of the organisation's stakeholders (Touboulic et al., 2014, Paulraj, Lado, & Chen, 2008). A fundamental assumption is that competitive advantage sometimes depends on sustainable performance, which is firmly embedded in collaborative efforts of sustainable forces of organisations and operational performance (Malhotra and Mackelprang, 2012; Mandal, 2015). Most significantly, this type of competitive advantage could not be created by the stakeholder solely or by the organisation independently.

Within the context of SSCM, the research considers diversified factors from operational and social perspectives as sustainable performance that SC stakeholders generate (Nath et al., 2019, Chowdhary et al., 2020). These factors could be recognised as sustainable enablers (Walker & Jones, 2012) or motivators (Sajjad et al., 2015). In this research, these sustainable factors are replicated as sustainable forces. To be clarified the implication of these types of forces, a distinction was also observed, like- internal forces and external forces, which Walker et al. (2008) identified as internal drivers and external drivers (Walker & Jones, 2012). As internal forces are the factors that directly link up with the internal people, strategic decisions, and internal supply functions (Walker & Jones, 2012). In particular, researchers identified that employee working conditions, human rights, ownership commitment and collaboration acted as the most dominant factors in the effective implementation of sustainable performance (Kumar et al., 2020; Nguyen et al., 2020; Hofmann et al., 2018; Sajjad et al., 2015). Forces like management support, company internal policies such as 'to do the right things' replicated both internal and external forces (Nguyen et al., 2020; Hoffman, 2018). Several investigations suggested various potential internal forces, such as risk assessment, operational efficiency, cost reduction, carbon emission, reuse of recycled products, and disposal of harmful materials, as powerful aspects of sustainability that can contribute to superior organisational performance (Sajjad et al.,

2015; Chkanikova and Mont., 2015; Giunipero et al., 2012). However, research has shown that a resourceful firm could manage its social and environmental sustainability more positively than its competitors (Carter & Rogers, 2008). Therefore, forces such as awareness, ownership commitment, risk management, internal policy and regulation have been identified as crucial forces to ensure sustainable performance in the company.

2.5.1.2.b External forces

On the contrary, external forces are the factors that are beyond the firm's internal environment that mostly propel organizations to implement sustainable performance more efficiently (Walker & Jones, 2012). Research identified a significant body of enablers regarding external forces, for example, competitions between competitors, brand name, stakeholder pressures, buyer requirements, and government regulations are interpreted as the most dominant for adopting sustainable practices (Nguyen et al., 2020; Hofmann et al., 2018; Sajjad et al., 2015). Additionally, in response to different types of social and environmental tragedies, such as – the Rana Plaza disaster in Bangladesh, contamination in India, and fire in Pakistan supported other significant factors, like- social awareness, environmental assessment, and customer demands recognised as the most influential outhouse forces for implementing the sustainability practices (Nath et al., 2021, Chowdhary et al., 2020).

Furthermore, the SSCM research considered several variables while explaining the relational view of stakeholder performance and sustainable forces. As such, communication between partners (Cheng, Yeh, & Tu, 2008), knowledge sharing (Oelze. 2017), competition pressures (Huq et al., 2014), technological advancement (Carter & Rogers, 2008) and participation in sustainable activities (Phan et al., 2020) were an essential outhouse component of stakeholder collaboration that substantially enhances sustainable performance (Alvarez, Pilbeam, & Wilding, 2010). Several research suggested a strong collaboration between SC partners might improve SSCM dialogue and relationship quality (Huq and Stevenson., 2020; Alvarez, Pilbeam, &

Wilding, 2010) and could create an intangible asset for superior sustainable performance. Research has emphasised the supporting forces of sustainable performance, which indicated a preference for positive outcomes. Fewer research emphasised on hindering forces, like- lack of structure, manufacturing process and heightened cost against internal sustainable performance (Nath et al., 2020; Oelze, 2017).

Nevertheless, within the context, the relational view has been successfully applied to explain the connection between stakeholders' sustainable performance and organisation's operational forces, in particular, strategic cooperative decision between SC partners (Nath et al., 2020; Huq and Stevenson, 2020; Nguyen et al, 2020). A good example of this is the buyer-supplier relational development exercises for sustainable performance, which usually involved a similar form of assessment, like ACCORD and alliance rules for compliance performance (Hoque et al., 2020), uses of green materials for eco-production (Samanta et al., 2017), and familiar form of training and development assistance (Rahman and Haque, 2016) for garment workers with regard to latest sustainable requirements. Particularly, Hoque et al., (2020) identified an interesting point that in case of lean orientation, the involvement of top management is essential especially when sustainable decisions are required. Hoque et al., (2020) also focused on limited commitment from top management, low competence, and role uncertainty could act as apparent constraints for sustainable performance. In addition, it is important to keep in mind that in practice it is often difficult to find cases that clearly fall within one or the other classification of hindering forces. The reality is great, not exactly black, and white and a developing country, like- Bangladeshi stakeholders' practices intended to present a mix portrait of both supporting and hindering sustainable mechanism.

2.5.2 Institutional Theory.

This section investigates how institutional theories can be used to examine and understand the effects of institutional norms and pressures on SSCM practices in the context of the garment industry. The underlying assumptions of institutional theory and

its three dominants' constructs- coercive, memetic, and normative logic, jointly called institutional isomorphism- briefly outlined, and discussed how institutional theory relates to this research context.

At the early stages of institutional theory, Selznick, (1957) used institutional framework to explain how both internal and external stakeholder groups could adopt sustainable expectations in business performance (DiMaggio & Powell, 1983). Furthermore, DiMaggio & Powell (1983) adopted environmental and social aspects of operations and expanded institutional theory to define why business needs to operate in a socially responsible way. They also argued which kinds of sustainability pressure could arise from the external stakeholders and how an organisation could progressively respond toward these pressures within the institutional field (DiMaggio & Powell, 1983).

With this in mind, turning to institutional isomorphism, it occasionally refers to a homogenisation process that occurs when organisations structurally seek legitimacy from other organisations in their environment, which are typically identified as the isomorphic pressures, namely coercive, mimetic, and normative isomorphic pressures (DiMaggio & Powell, 1983). From a manufacturing point of view, **Coercive pressures** can come from either social and cultural expectations of stakeholders' group or raise from the compliance interdependences' (DiMaggio & Powell, 1983; Meyer & Rowan, 1977). For example, the stakeholder group could be the regulatory authorities and government agencies that directly confirmed the rules and regulation of the social behaviour of garment manufacturers (Huq et al., 2016). Consequently, manufacturing farms attempt to mitigate these coercive challenges through direct and indirect collaboration between stakeholder groups and reflecting on infrastructural legislation, operational policies, and compliance standards (Nath et al., 2020).

For **mimetic pressures**, can come from both internal and external assortment and assessment mechanism, basically while organisations seek legitimacy through coping with the best practice of relevant successful competitors (Alchian, 1950). For example- for garment manufacturers' a major development can raise by organisational

technological advancements and current business environment, and while manufacturers' felt pressures to follow successful competitors' social and environmental practices (Chowdhary et al., 2018). Last of all, **normative pressures** stemming primarily from professional expertise of the organization's activities (DiMaggio & Powell, 1983). For garment manufacturers, garment professionals, such as academicians from business schools, network authorities, sustainability experts, and advanced techno-based experts within the business. To mitigate normative pressures garments professional must compromise with nonprofessional clients, such as garment owners, management heads, and logistic heads to control 'the production of the producers' (Larson, 1977), and establish a mutual cognitive base to run the best practices (Huq et al., 2014)

Moreover, within the context several SSCM researchers showed how institutional theory is continuously emerging as a useful theoretical framework for explaining why organisations act in environmentally and socially responsible ways (Nath et al., 2020, 2019; Wilhelm et al. 2016; Brammer et al., 2017). For example, Nath et al. (2020) investigated in the Bangladeshi garment industry through an empirical study and identified several institutional pressures which could create heterogeneity in implementation of sustainable practices. Wilhelm et al. (2016) examined the role of governance mechanism and institutional pressures on multi-tier suppliers' SSCM and suppliers' sustainability beyond the perspectives of manufacturers. More explicitly, the finding suggested that 'suppliers operate in different contexts and are exposed to conflicting trade-offs that dictate efficiency and legitimacy concurrently' (Wilhelm et al., 2016). Greenwood et al. (2010) examined how multiple types of sustainability logic, such as regional advantages, family-owned business, and monopoly advantages of market may complement with institutional practices, but may compete or conflict with each other, thus generating complex institutional pressures for business. Moreover, within the sustainability context Glover et al. (2014) examined the role of institutional practices across the dairy supply chain, and found that economic motives (i.e., cost reduction and profit maximization) competes with sustainability motives, which indicates challenges for implementing sustainability practices. However, relatively few studies have explicitly examined the role of institutional pressures on the sustainability activities of stakeholders on the shop floor, particularly in employee engagement on

SSCM practices. Therefore, more research is required to investigate under what environments shop floor employees could bring best institutional practices and may create synergies between three dimensions of SSCM practices (Nath et al., 2020; Sodhi & Tang, 2018; Wilhelm et al., 2016).

2.5.2.1 Institutional forces in SSCM practices

In response to institutional theory, several contextual researchers highlighted institutional forces which could influence the sustainability practices, but didn't actually describe their relevancy towards garment shopfloor's SSCM practices (Chowdhary et al., 2020; Nath et al., 2019; Huq et al., 2016). In response to this gap, this section explores the SSCM practice-based institutional forces from a coercive, mimetic, and normative perspective.

2.5.2.1.a Networking and social capital

Economic behaviours are embedded in business systems; that is, through institutions networking come the opportunities to transform financial and human capital into profit (Burt, 1992). Social capital in relations among people, identifying 'certain aspects of social structures by their functions' (Nurunnabi, 2015; Coleman, 1988). Institution networks generate social capital for the exchange of trust, benefits, and reciprocity, driving long-term supply chain efficiency and development (Sajjad et al., 2015; Yang and Wang, 2011). Relationships in this context enclose a wide range of involvement, including customers, suppliers, and competitors. Interpersonal relationships and interactions facilitate better communication and understanding (Carlson and Bitsch., 2018). Trust plays a central role to mitigate conflict and reduce uncertainty in SSCM practices in production (Ling and Li, 2012), supply and demand (Cheng et al., 2012) and information and technology turbulence (Silvestre et al., 2015). Certain levels of confidence in personal relationships with stakeholders encourage positive attitudes toward supply chain integration (Nonini,2008) and collaboration (Ramasamy, Goh,

and Yeung, 2006) and maintain long-term partnerships (Wiegel and Bamford, 2014; Yen, Barnes, and Wang, 2011).

2.5.2.1.b Institutional links and legitimate mandate

In order to survive and grow, firms must not only be efficient and competitive but must also obtain legitimate mandates in the institutional environment (Dimaggio and Powell, 1983). Experts showed that firms in a cluster can have a symbiotic coexistence of both competitiveness and cooperativeness (Dimaggio and Powell, 1983; Oliver, 1991). Institutional norms and social network relationships inside a cluster form due to close and frequent interaction. Pouder and John (1996) argue that, in order to obtain recognition and legitimacy from other members, clustered firms will seek ways to participate in activities and exchange information as frequently as possible. Frequent interaction leads to greater cooperation, facilitating knowledge exchange, resource availability, and market opportunities. For firms in high-uncertainty environments, institutionalisation is essential for competition (Keister, 2002) and is also helpful for reducing costs and these types of strong ties can also lead to conformity. If clustering is viewed as a network relationship (Sull, 1999), then, by having strong ties, the firms inside a cluster can obtain logistical support, market information, and technical support; but having long-term closed relationships can also become the source of institutionalisation pressure. In the case of sustainability, forcing organisations to conform to institutional norms to gain legitimacy and recognition might work well (Dimaggio and Powell, 1983; Oliver, 1991), yet by so conforming, these firms become more trusted, allowing for further sharing.

2.5.2.1.c Corporate environmental practices

Typically, corporate environmental practices capture a firm’s commitment, and the execution of sound environmental practices has increasingly received attention as a core dimension of corporate social responsibility (CSR) performance (Porter & Kramer, 2011; Babiak & Trendafilova, 2011). Carroll (1979, p. 500) stated that 'the

social responsibility of business encompasses the economic, legal, ethical, and discretionary expectations that society has of organisations at a given time.' Scholars argue that this usually focuses on the results of management activities concerning the natural environment and those activities themselves (Trumpp et al., 2015), for example, pollution reduction triggered by government regulations and taxes (Porter & Kramer, 2011). Hence, in accordance with coercive isomorphism, the proactive posture and demands, including societal expectations, dictate the firm's sustainability performance. In addition to this, firms can implement better environmental practices in an attempt to achieve higher economic performance by acquiring new technologies, gaining a better reputation, attracting high-calibre job candidates, or some other factors that could ultimately confer a competitive advantage over there (Russo & Fouts, 1997).

2.5.2.1.d Social Integration

The social integration mechanism represented the way organisational members shared relevant knowledge among themselves (Zahra & George, 2002) creating a capability in institutions rather than as a knowledge asset, emphasising the role of team cognition and organisational structure on knowledge assimilation. Scholars argue that this type of intraorganisational knowledge assimilation and transformation capability works through an elaboration of the impact of socialisation mechanisms and acted as a bridge for individual members to articulate and amplify new knowledge (Nonaka, 1994; Todorova and Durisin, 2007). Furthermore, it facilitates the development of the necessary connectedness for knowledge assimilation processes and impacts individual behaviours in a very 'tacit, informal, and subtle way' (Todorova and Durisin, 2007) and that are not easily observable and imitable and therefore play a significant role in achieving a sustainable competitive advantage and maintaining them over time (Armstrong & Lengnick-Hall, 2013).

2.5.2.1.e Consumer and cultural pressure

Scott (2001) described the normative and cultural cognitive pillars as the informal environment for sustainability. The crucial role of culture in the development of entrepreneurship is emphasized by the fact that cultural and normative backgrounds play an essential role in the determination of the societal norms, beliefs, values, and assumptions that are shared within the society (Hofstede 2001; Wennekers 2006). Specifically, a supportive or performance culture defines goals and shows the levels at which society or individuals perceive opportunities, as well as admire the values of autonomy, risk taking, and innovation. Furthermore, the normative dimension also affects the general societal orientation in terms of its resilience, creativity, and legitimacy for entrepreneurial emergency in the informal economy which tends to adaptive with the preliminary concept of sustainability (Lee and Peterson, 2000; Wennekers, 2006) and most likely converge or conflict with the capacity of a society to develop and support entrepreneurial rate.

2.5.2.1.f Government regulations

Initially, Zukin (1985) explored how organizations react to political environments for their financial operational activities. Regarding coercive isomorphism, scholars consider both government provision (i.e., social welfare, public health, and education) and private regulation (i.e., services and benefits to employees) functioning as institutional drivers (Tran, 2013; Tran and Norlund 2014). They also portrayed that in cases of limited resources and lack of willingness for sustainability, the government sometimes tends to leave these responsibilities to the companies, which are then expected to provide them to their corresponding actors like managers, employees and so on (Amine and Staub 2009; Tran 2011; Hamm 2012). Further, if the state does not enforce the regulation on labour standards, such as minimum wages and health insurance, then the firms are supposed to do so (Amine and Staub 2009; Tran and Norlund 2014).

2.6 Theoretical implications

Based on the above-mentioned discussion, the motivation and justification for choosing stakeholder and institutional theoretical perspectives in the context of this study are described in table 2.8. The common underlying assumption of stakeholder theory and institutional theory is that organizations produce both internal and external influences (environmental impacts) that affect different stakeholder groups, and that organizations will impose institutional pressure on those organizations (Zhu et al., 2008). On the contrary, Sarkis et al. (2011) argue that 'stakeholders are usually closely aligned with social institutions. There are norms and legitimacy aspects of stakeholder theory that overlap with institutional theory. On the contrary, Wahl & Bull (2014) argue that 'stakeholder theory shares common views with institutional theory' as it describes homogeneous isomorphism that can influence the adoption of sustainability by manufacturers. In addition, Table 2.9 summarises the main contextual papers identified in this thesis that use either stakeholder or institutional theory and summarises the main aspects of these.

Basics of analysis	Stakeholder Theory	Institutional Theory
Definition	Stakeholder theory combines groups of internal and external stakeholders according to their descriptive, instrumental, and normative characteristics, and supports organisations that respond to the concerns and expectations of dominant stakeholder groups (Freeman, 1984; Hörisch et al., 2014).	Institutional theory provides a useful theoretical frame that aids in understanding how firms progressively respond to a combination of pressures from powerful factors and actors within their institutional field (DiMaggio & Powell, 1983).

Application in SSCM Research	Widely used in empirical research on social and environmental issues. It offers the potential to explore the phenomena relating to sustainability and SSCM practices across the supply chain.	Widely used in sociology and organizational research, particularly on social and environmental issues. The application in empirical research is still increasing; therefore, it has significant potential in this study.
Methodological choice	Different forms of empirical studies, such as content analysis, case studies, qualitative interviews, and quantitative surveys can be applied.	Content analysis, case studies, semi-structured interviews, and surveys can be applied.
Criticism	Cannot fully address issues beyond stakeholders' groups; identifying the relevant stakeholders and proposing the implementation of SSCM practices without analyzing the conditions beyond the social responsibility of business vis-à-vis their stakeholders' roles.	It can provide some implicit tool, such as why organisations adopt behaviours that can confirm normative motives SSCM practices but may create conflict with the rational attainment of economic performance.
Relevancy of this thesis	Yes: It explains why internal garment stakeholders implement SSCM practices in their shop floor activities. The social and economic aspects of the stakeholders' groups, especially the motives that support or hinder SSCM practices, are relevant to explore.	Yes: It examines how the participation of garment workers might respond to the influence of institutional pressures on the implementation of SSCM practices. It is useful to understand- how employees could enhance the SSCM performance of SSCM practices in shop floor activities.

Table 2.8: A summary of the justifications for the theoretical choice.

Authors	Stakeholder Theory	Institutional Theory	Key aspects
Nath et al., 2023		√	Buyers' requirement, regulations, competitions, management commitment
Salveti et al., 2022		√	Compliance, CSR practices
Nath et al., 2021		√	Decoupling responses, trade offs
Nath et al., 2021		√	Business structure, manufacturing process, heightened cost, compliance
Huq and Stevenson., 2020		√	Collaboration
Kabir et al., 2020	√		Sustainable business practises, cultural pressure, technical issues.
Nath et al., 2020		√	Multitier stakeholders' engagement, assessment requirements for supplier selection.
Mausumi and Rahman, 2018	√		Stakeholder decisions, workers' occupational health and safety (OHS)
Huq et al., 2016	√		Regulatory authorities, Buyer audit capabilities, compliance, collaboration
Wilhelm et al. 2016		√	Governance mechanism, institutional pressures, double agency role, institutional decoupling
Silvestre et al., 2015	√		Regulatory framework, compliance, sustainability strategy

Ali and Rizwan, 2013	√	√	Ethical branch of stakeholder theory, managerial branch of stakeholder theory, isomorphism, decoupling

Table 2.9: Contextual studies of SSCM (and performance) using stakeholder and/or institutional theory.

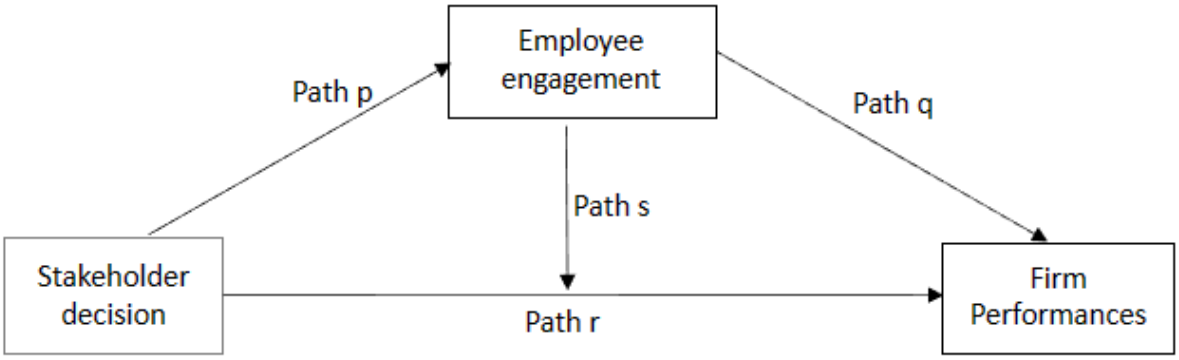
However, some of the key challenges of stakeholder theory are present in the SCM literature. Firstly, Busse et al (2016) described it 'does not explain why stakeholders occasionally decide to punish firms in the absence of objective misconduct'. Second, it does not consider the sustainability requirements under which businesses are likely to act in socially responsible ways with respect to their stakeholders (Chkanikova et al., 2015). Lastly, Acosta et al., (2014) argued that 'it cannot fully address issues beyond coercive pressures. Nevertheless, institutional theory examines both internal and external stakeholders' sustainability pressures that influence the implementation of garment SSCM practices as well as SSCM performances (Busse et al., 2016).

2.7 Development of Hypotheses

Working from the literature review and conceptual framework, this section focuses on developing the study's hypotheses. To answer the research objective formulated in Chapter 1, two categories/sets (each containing four groups) of hypotheses were developed and analysed:

Set 1: Employee engagement as a mediator between stakeholder decisions and firm performance (i.e., economical, environmental, social and SC disruptions). Figure 2.2a, showed the first category of the proposed hypothesized analytical framework.

Figure 2.2a. The analytical framework, employee engagement as a mediator.



2.7.1 Employees engagement and Stakeholder decisions

The literature highlights the relationship between employees engagement and stakeholder decisions, and suggests that implementing both mechanisms together will have an effect on firm performance (Azim et al., 2021; Hoque and Rana 2019; Sajjad et al., 2015; Chowdhary. 2017). Several literatures highlight a positive relationship, particularly the sustainable mindset could bring a major development in the managements' decision making while maintaining factory's SSCM practices (Azim et al., 2021; Chowdhary. 2017). For instance, Azim et al., (2021) indicated that factory's internal employees could determine the level of compliance for better workplace engagement, thereby assisting sustainable practices in recombining and utilising their substantial influence.

Moreover, according to stakeholder theory, stakeholder decision-making has a major impact on business performance. The most important aspect of the stakeholders' approach is that it incorporates all parts of responsibility, from direct income maximisation to companies' reputation building (Hörischet al., 2014). Accordingly, several contextual scholars have applied instrumental aspects of stakeholder theory to investigate the implementation of sustainable practices (Hoque and Rana 2019; Sajjad et al., 2015; Huq et al., 2014; Chowdhury et al., 2013). For example, Hoque

and Rana (2019) analysed the relationship between the buyer and the supplier from the perspective of organisational performance and highlighted the importance of the cooperative mindset of management, the collaborative attitude and strategic orientation in the sustainable regulatory practices of the garment industry, the working environment of the garment industry. Admittedly, Sajjad et al. (2015) have identified various instrumental and normative drivers that drive large organisations to implement SSCM practices. In this way, Klassen and Vereecke (2012) argued that the descriptive aspects of manufacturing-based stakeholders explain how organisations identify their internal and external stakeholder groups and the decision-making process of interested individuals could address sustainability issues in SC operations. Hence, the following is path is hypothesised to measure the direct relationship:

Path p: Stakeholder decisions affect Employee Engagement.

In order to maintain the clarity of the analytical framework, path P has been revised as follows:

Path p: Employee Engagement impact Stakeholder decisions.

By observing the importance of stakeholder decisions in the operations of the garment factory and the factory's firm performance, this study considers stakeholder decisions as a driving force because they have the power to promote the willingness to adopt SSCM practices and to increase the firm's performance as a whole. Therefore, this study proposes the following hypothesis:

Path r: Stakeholder Decisions impact on organisations' Firm Performances.

2.7.2 Employees engagement and Firm Performances

As one of the key stakeholders, employees have a significant impact on the sustainability and business performance of the focal firm (Berns et al., 2009). Several previous SSCM scholars (Sharma, 2014; Ashby et al., 2012; Carter and Easton, 2011; Carter and Rogers, 2008) have provided useful summaries of employee participation in sustainable practices, where organisations can get the most out of it, and where future prospects lie. Several contextual researchers have found a significant positive relationship between employee engagement and sustainable business performance (Adhikari and Bisi, 2020; Baskaran et al., 2019). The influence of competitors and management's attitude towards sustainable practices in the shop encouraged internal stakeholders to learn about the actions of successful competitors and be aware of disruptions (Baskaran et al., 2019). For example, Tseng et al. (2022) identified financial vulnerability, supply chain uncertainty, risk assessment and resilience as the most important aspects that guarantee the effectiveness of SSCM under industrial disruption. However, sustainable practices also have undesirable effects on firm performance, indicating the need to explore the performance benefits of implementing sustainable practices, especially from a contextual perspective. Separately, Azim et al. (2021) also highlighted the lack of off-site exploration of employee perspectives on SSCM enhancement. More specifically, how employee engagement can enhance SSCM practices and SSCM performance on the shop floor is still missing.

Furthermore, what is often lacking in existing contextual studies is the identification of the role of employees in firm performances, despite the opportunity for employee performance to have a significant impact on shop floor operational activities (Sajjad et al., 2015) and evidence of sustainable development practices to support this (Phan et al., 2020). Based on the above discussion, the following is hypothesized:

Path q: Employee engagement impact on organisations' Firm Performances.

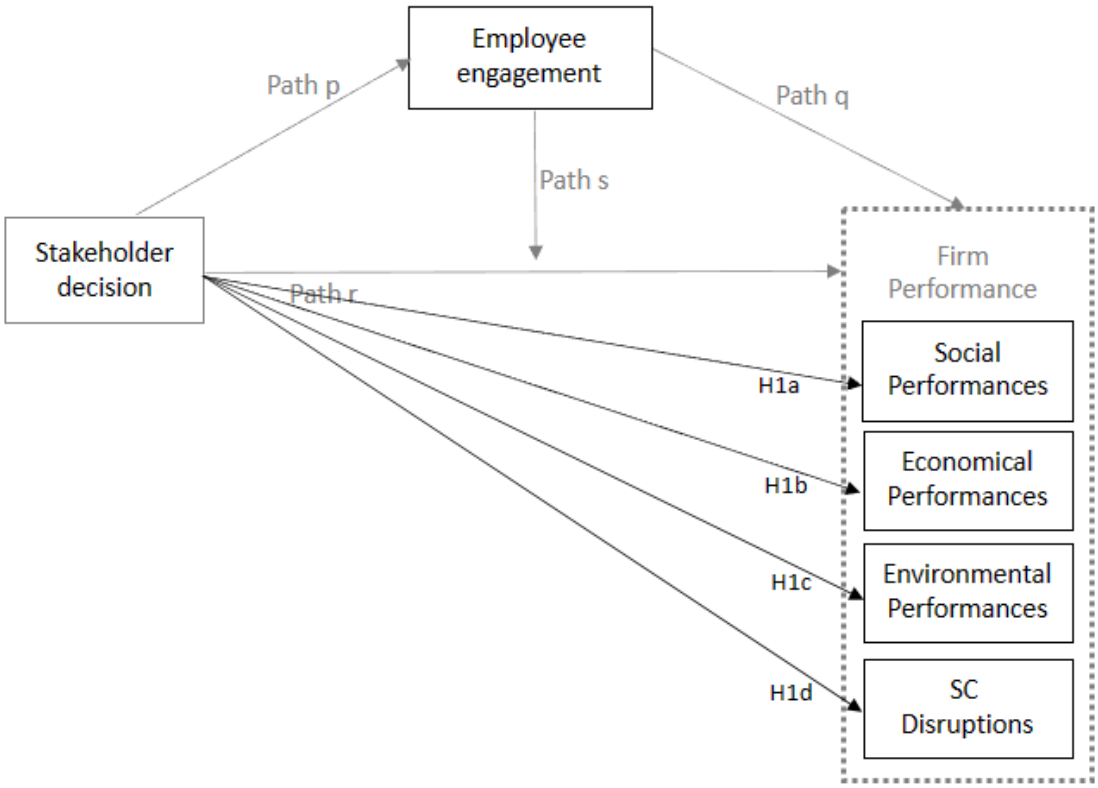
2.7.3 Employees engagement as a mediator

Hence forward, this study propose that employee engagement mediates the relationship between stakeholders' decision making and organizational firm performances (i.e., social performance, economic performance, environmental performance, and SC disruptions). So, the mediating relation will be,

Path s: Employee Engagement mediates the relationship between Stakeholder Decision and organisations Firm Performances.

Depending on this assumption the extended mediator relationships will be,

Figure 2.2b. The extended version of the analytical framework, employee engagement as a mediator.



H1a. Employee engagement mediates the relationship between stakeholder decisions and organisations social performance.

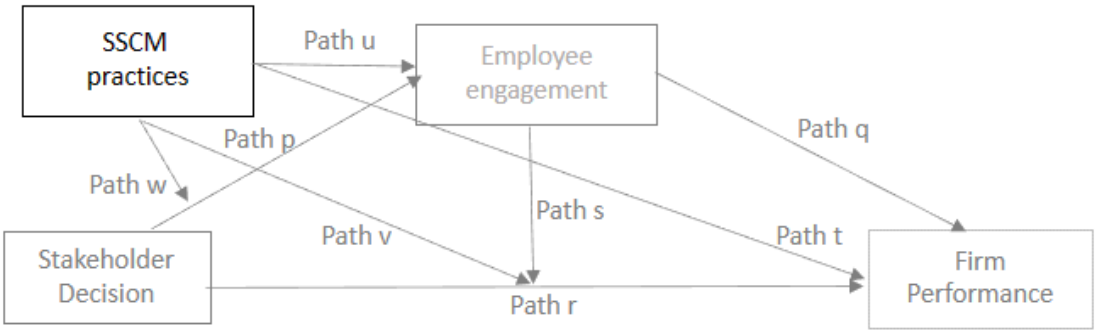
H1b. Employee engagement mediates the relationship between stakeholder decisions and organisations economic performance.

H1c. Employee engagement mediates the relationship between stakeholder decisions and organisations environmental performance.

H1d. Employee engagement mediates the relationship between stakeholder decisions and SC disruptions.

Set 2: SSCM practices moderating the mediating effect of employee engagement, on stakeholder decisions and firm performances (i.e., economical, environmental, social and SC disruptions). Figure 2.3b, showed the second category of the proposed hypothesized analytical framework.

Figure 2.3a. The analytical framework, SSCM practices as a moderator.



2.7.4 SSCM practices on the relationship between Employee Engagement and Firm Performances.

There is a growing interest in investigating the factors that enhance sustainable firm performances, namely social performance, economic performance and environmental performance of organisations. Previous studies in the Bangladesh garment industry have focused on stakeholders' SSCM practices, particularly suppliers' sustainable practices, and their impact on firm performance. For example, Huq and Stevenson (2020) explained that maintaining social performance is a clear responsibility of garment owners towards their employees and workers to ensure sustainability in the factory. However, Yadlapalli et al (2018) highlighted the need for governance mechanisms in a factory's operations, which can create visibility among SC actors and enhance social and environmental performance. Similarly, Tumpa et al (2019) highlighted the importance of retailer engagement in compliance standards, particularly in reducing vulnerabilities in social and economic performance. Overall, research has identified that SSCM practices has a positive effect on a firm's social, environmental, and economic performance (Chowdhary. 2017). Based on the above discussion, the following hypothesis is made:

Path t: SSCM practices impact Firm Performances.

Moreover, it is necessary to understand which practices are more prevalent in encouraging SSCM implementation, and whether there are differences between stakeholder groups. Existing research has identified the importance of sustainable practices, yet understanding who promulgates these practices and any tensions that might exist as a result warrants further empirical investigation. Accordingly, this study considers not only focusing on sustainability practices but also attempts to understand firm performance relationships. In particular, how employee engagement could enhance the relationship between sustainable practices and firm performance will help to better understand the motivation of the garment industry in Bangladesh to improve its sustainability. Therefore, the following relationship is hypothesized:

Path u: SSCM practices impact Employee Engagement.

By observing the importance of the impact of SSCM practices on both firm performance and employee engagement, this study considers that SSCM practices influence the strength or direction of the relationship between firm performances and employee engagement, more specifically, SSCM practices somewhat influence the circumstances between garment factory stakeholder decisions, employee engagement and firm performances. Therefore, this study proposes the following hypotheses to measure the relationships:

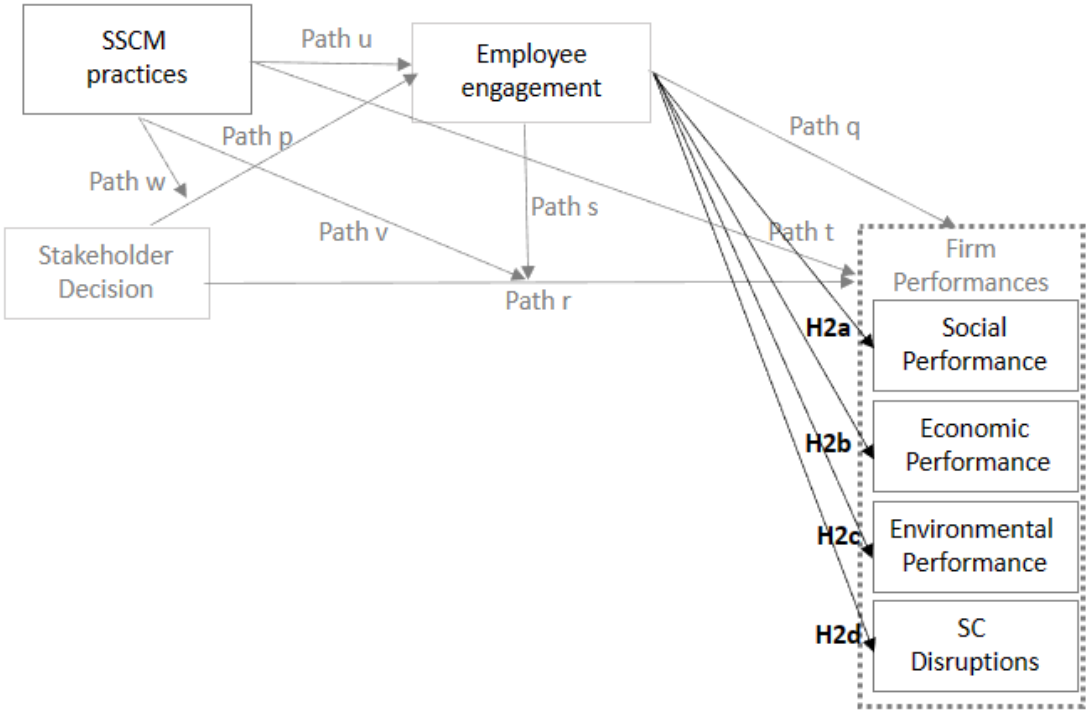
Path w: SSCM practices impact the relationships between Stakeholder Decisions and Employee Engagement

2.7.5 Sustainable practices as a moderator

Furthermore, the contextual literature showed that having positive stakeholder decisions for sustainable practices increases firm performance, but this level of performance somewhat depends on what level of SSCM practices incorporate in the factory premises. However, the reason for stakeholder decision making has an effect on firm performance as the cause of employee engagement in SSCM practices. Therefore, this study proposes the following direct relationships, depends on the previous direct (see Figure 2.2a) relationships:

Path v: SSCM practices positively moderates the relationships between stakeholder decisions and firm performances.

Figure 2.3b. The extended version of the analytical framework, SSCM practices as a moderator.



Depending on this assumption the following hypotheses are proposed:

H2a: SSCM practices positively moderate the mediation effect of employee engagement on the relationship between stakeholder decision and the social performance of organisations.

H2b: SSCM practices positively moderate the mediation effect of employee engagement on the relationship between stakeholder decision and organisational economic performance.

H2c: SSCM practices positively moderate the mediation effect of employee engagement on the relationship between stakeholder decision and organisations' environmental performance.

H2d: SSCM practices positively moderates the mediation effect of employee engagement on the relationship between stakeholder decision and SC disruptions.

2.8 Summary of the chapter

In summary, in this chapter the choice of stakeholder and institutional theories are introduced. The relevant SSCM forces are also presented to guide the literature. Although institutional theory covers broad aspects of institutional pressures, it is mostly applied as an implicit tool (Suddaby, 2010). For example, why firms adopt behaviours that conform to normative demands but conflict with the rational attainment of economic goals (Suddaby, 2010). To overcome this challenge of institutional theory, stakeholder theory allows incorporation of instrumental aspects along with the normative core of stakeholder theories in SSCM (Hörisch et al., 2014). Therefore, both theories can complement each other by leveraging the benefits of critical area in the sustainability and SSCM literature (Busse et al., 2016; Islam & Deegan, 2008) and will guide to answer RQ2 and RQ3. Nevertheless, the implementation of SSCM practices is dependent on context specific challenges, which may not be learned through understanding the issues and challenges of other contexts (Silvestre, 2015a). Thus, a combination of these two theories is required to explain the complexity involved in implementing SSCM practices in garment supply chain. Moreover, the existing literature was used to guide and support the development of hypothesis, particularly this set the scene for RQ4.

CHAPTER 3

Methodology

3.1 Overview

This chapter provides the methodological perspectives of this thesis. To begin with, the research paradigm along with the philosophical stance for this study is presented. Therefore, a brief discussion about research approaches along with the methodological choice and analytical tools is explained. Hence, the application of both qualitative and quantitative data collection methods of this thesis is presented. Finally, the ethical procedures are also presented. Henceforth, the overreaching objectives of this chapter are:

- Research paradigm and philosophical stance: A brief overview of social science research paradigm and philosophical stance.
- Research approach: Justifications of use of the mixed methods for this research study.
- Research design: Illustration of the suitability of the convergent mixed methods.
- Ethical considerations: Illustration of ethical process.
- Choice of data collection: A brief overview of semi-structured interviews and survey methods, and questionnaire formations.
- Nature of inbound stakeholders: Identification of both top-level and lower-level of garment shopfloors stakeholders.

Table 3.1: Subsequent objectives of Chapter 3.

3.2 Research paradigm and philosophical position.

A research paradigm is ‘a cluster of beliefs and dictates that, for social scientists in a particular discipline, influence what should be studied, how research should be done, and how results should be interpreted’ (Bryman, 1992). Therefore, paradigms involve researchers' philosophical positions on the nature of matter, what information can be known, and how to achieve this knowledge. As well, Guba and Lincoln (1994) extend this view with ‘a range of possible relationships to that world and its parts’ and argued research paradigm is the choice of research objects which typically directs the interactions between research phenomenon and problems (Collis and Hussey., 2014). Therefore, Gerring (2012) added the necessities of the research framework and entails: ‘in order to get proponents of different methods and theories terms, we need to provide a common framework by which arguments and evidence can be evaluated and alternative methods understood.’ Therefore, the research paradigm is a comprehensive set of beliefs that guides the research investigation, leads the choice of research methods, and the development of explanation for the observed research problems (Corbetta, 2003; Guba and Lincoln, 1994).

In addition to defining a research paradigm, researchers must also clearly define the truth and reality, and how they are related to research, before discussing the role of the research paradigm and philosophical assumptions in research. As Soames (1989) underlined ‘truth is defined as the unrestricted use of the perception of facts to conform to facts’ which underlined the element of why research is being called the creation of truth (Alvesson et al., 2000). Furthermore, the definition of truth and its relationship to research is worth describing, and it is reasonable to assume that considering research paradigms and philosophical assumptions is the fundamental way to begin research. This argument goes with Gummesson (2003), who posited wherefore research paradigm as integral to social science research. The next query is then which assumptions will fit for what, particularly the philosophical assumptions (i.e., ontology, epistemology, and methodology) will be worth describing.

3.2.1 Ontology and Epistemology

As a start, ontology is the assumption that researchers make to identify truth or reality (Guba and Lincoln 1996) and to study how something exists (Krauss 2005). Ontology is also indicated as a way the researchers see the social world (McAuley 2005). These definitions align with Blakie (1993, p.6) who defines ontology as underlying assumptions to a particular approach in explaining the nature of social reality, which includes claims about what exists, what the reality looks like, what aspects make it up, and how these aspects interact with each other. Furthermore, the ontology points of view differ as researchers perceive how social reality exists (Saunders et al., 2016). In general terms, perception can be classified as objectivism and subjectivism (Bell et al., 2018). Objectivism refers to the idea that social reality exists independently of social actors (people) and their social activities, whereas subjectivism is the belief that social reality is the result of the interaction of social actors (Bryman, 2016).

Then comes epistemology, which concerns how people come to know (Trochim 2006). Epistemology is a basic set of assumptions about the researchers' ways of investigating knowledge as reality in the world (Easterby-Smith et al. 2002; McAuley 2005). In addition to that, Guba & Lincoln (1996) and Tuli (2010) define epistemology as a set of assumptions that helps with identifying the relationship between the knower and what could be known or the knowledge that informs the research. According to ontology, epistemology can also be broadly classified as objectivism and subjectivism (Saunders et al., 2016). Epistemological objectivism accepts the assumption of a universal and independently existing reality, so that knowledge of social sciences can be studied and acquired in the same way as natural sciences (May 2011), while subjectivism considers reality to be not universal, but socially constructed by social actors and their actions, and, in the epistemological sense, knowledge is the opinion and narrative that form and explain social reality (Saunders et al., 2016). Additionally, due to the nature of subjectivism, research by subjectivists is inevitably value-laden and their value reflects studies and knowledge acquired (Saunders et al., 2016). In particular, similar to Saunders et al (2016), objectivism-subjectivism epistemological

views were classified as dualists and objectivists, modified dualists and objectivists, transactional and subjectivists in critical theory, and transactional and subjectivists in constructivism (Guba and Lincoln, 1994).

3.2.2 Research Paradigms in social science research

Turning towards paradigms used in social science literature, multiple paradigms exist. Specifically, the seminal work by Mackenzie and Knipe (2006) summarised four main paradigms: positivist/ post-positivist, interpretivist/ constructivist, transformative/ realistic, and pragmatic. The following sections will focus on each in turn and Table 3.2 presents the assumptions related to the social science literature with the major research paradigms.

Assumptions	Positivist	Interpretivist	Critical Realistic	Pragmatic
Commonly only used language	Experimental, quasi-experimental, correlational, theory verification, causal-comparative, normative	Naturalistic, interpretivist, ethnographic, social and historical construction, theory generation, symbolic interaction.	Participatory, grand narrative, queer theory, political, feminist, advocacy.	Consequences of actions, problem-centred, pluralistic, real-world practice oriented mixed models.
Ontological Perspective	Objectivism.	Constructivism.	Realist	Flat ontology of configurations

Nature of reality	Objective, tangible, single reality.	Multiple realities are constructed socially.	Knowledge obtained by observing explain elements of reality.	Networks, fields, actor-networks
Goal	Prediction.	Understanding.	Understanding social reality	Understanding Practical Consequences
Knowledge generated	Time-free, context-independent.	Time-bound, context-dependent.	Epistemic Relativism	Constructed-based reality of the world
View of Causality	Existence of real causes.	Multiple simultaneous events.	Generative Mechanism	Experienced-based, actions/practice /activity
Research Relationship	Separation between the researcher and the subject.	Interactive and cooperative.	Causes and explanations	Action Research
Methodology	Primarily quantitative (i.e., surveys).	Primarily qualitative (i.e., semi-structured in-depth interviews).	Intensive study with a limited number of participants cases	Mixed Methods
Data Collection	Precoded surveys or other formulaic techniques.	Direct, fluid, and observational techniques.	semi-structured interviews supplemented by focus groups, observation	Interviews, observations, testing, and experiments.
Data Analysis	Statistical analysis that	The analysis focused on	Retrodiction and abduction to	Grounded theory,

	aims to address cause-and-effect relationships.	context-specific meanings and social practices.	measure the causal mechanisms	framework analysis, interpretive phenomenological analysis

Table 3.2: Assumptions social science research paradigms (adapted from module lectures by Gurney, 2018; Bryman and Bell, 2011; Mackenzie and Knipe, 2006).

3.2.2.1 Positivism

Positivism represents a philosophy that takes rational considerations to understand the world. The epistemological stance is based on the assumption that objective reality exists (Hussey and Hussey, 1997), observable and measurable (May 1998). Therefore, positivists develop knowledge based on careful observations and measurement of objective reality through numerical measures or quantitative studies to support or refute the theory (Creswell and Creswell 2018). In studying human behaviour/attitudes, positivists explain the phenomenon using a cause-and-effect approach (May 1998). To obtain neutrality and objectivity, researchers are separated from the research and not affected by the research (Edwards and Skinner 2009). Furthermore, positivists use deductive research techniques using a predominantly quantitative approach with the aim of predicting and verifying a theory (Guba and Lincoln 2005).

Although the positivist approach has been acknowledged as the traditional way in which empirical SCM research has been performed, this approach has a limitation in a way that it leaves a large number of human attitudes toward each other missing, particularly the psychological content of the involved relationships (Priest, Carter, & Statt 2013). For example, Burgess et al. (2006) recognised that, from a total of 100 articles on the SCM field, there is a strong tradition of positive research paradigms with 97% of articles based on this paradigm-based approach, and that only a small percentage of articles used interpretative and realist paradigms. Consequently, the

paradigmatic position of positivist research is widespread in the field of SCM, and academic research based on realism and interpretation is relatively inadequate.

3.2.2.2 Interpretivism

As May (1998) explained 'interpretivists base their philosophical stance on the subjective individual's interpretation and understanding of the world and experiences toward certain things', the interpretivists explain the world, or the situation being studied as a creation of the mind, and thus, should be interpreted through the participants' views (Bryman 2012). This notion aligns with Crotty (1998), who argued that individuals develop meaning towards certain objects or situations based on their experiences and social perspectives. The researchers are part of the research and position themselves as being interactive and cooperative with the participants and the phenomenon under study (Guba and Lincoln 2005). In interpreting the data, the background and experience of the researchers also influence their interpretations (Crotty 1998). Another feasibility is that the interpretivists use inductive research techniques using a predominantly qualitative approach with the aim of understanding and generate a theory (Guba and Lincoln, 2005). Researchers tend to use open questions so that participants can share their points of view from which the meaning and theory are generated.

Moreover, in accordance with the psychological nature of human-based content, it cannot be neglected in SCM research because relational between SC partners acts are more complex than just conversations, buying and selling acts, and thus, should be understood using the human interaction perspective (Priest et al., 2013, Christopher 2005). For example, Christopher (2005) described how SCM research and the 'investigational' mode/nature of the SCM field involved much more than just value addition in SC networks and enhance the SC stakeholders' performance across the chain. In a similar way, social science scholars also challenged the positivist approach in highlighting the importance of subjective, cultural, social, spiritual, and

interpretative aspects of partners and their relationships (Clark, 1998), while they are important aspects in understanding particular human perceptions and attitudinal patterns. In other words, perceptions about a specific matter/thing should be understood within the human relationship context, which is the perspective of the interpretivism paradigm. These assumptions also match the initial research objective of this thesis. Hence, the idea led to methodological innovations in SCM research to the point where the interpretivism paradigms became increasingly adopted in the work of a growing number of scholars.

3.2.2.3 Critical realism

Critical realism is a comprehensive philosophy of science that uses both positivist and interpretivist approaches to a thorough description of ontology and epistemology (Lalwani, 2021). This method is used to measure the causal relationship between social events in order to better understand the problem and therefore propose strategic recommendations to address social problems (Fletcher, 2017). In particular, critical realism points out that qualitative methods are used to obtain a rich explanation of existing mechanisms of interesting phenomena, whereas to redirect and change social mechanisms, a better understanding of the situation is needed (Edwards et al., 2014). Despite the assertion of qualitative methodological underdevelopment and its application, critical realism provides a resource for novel opportunities to explore complex organisational occurrences in a holistic way (Easton, 2010).

However, several SCM researchers highlighted the potential of critical realism to achieve thought-provoking and insightful research (Lalwani, 2021; Bhaskar, 2014; Aastrup et al.,2008). For example, through an in-depth interview with project management, Lalwani (2021) explored the philosophical viewpoint of critical realism and how it can be applied in qualitative research. On the other hand, Aastrup et al. (2008) identified that systematic justification in case studies can be a consideration for realism providing an in-depth understanding of the epistemological role of case studies in logistics. However, for a critical realist reality has causal powers and mechanisms that can be experienced by its ability to cause or cause events (Saunders et al., 2016).

3.2.2.4 Pragmatism

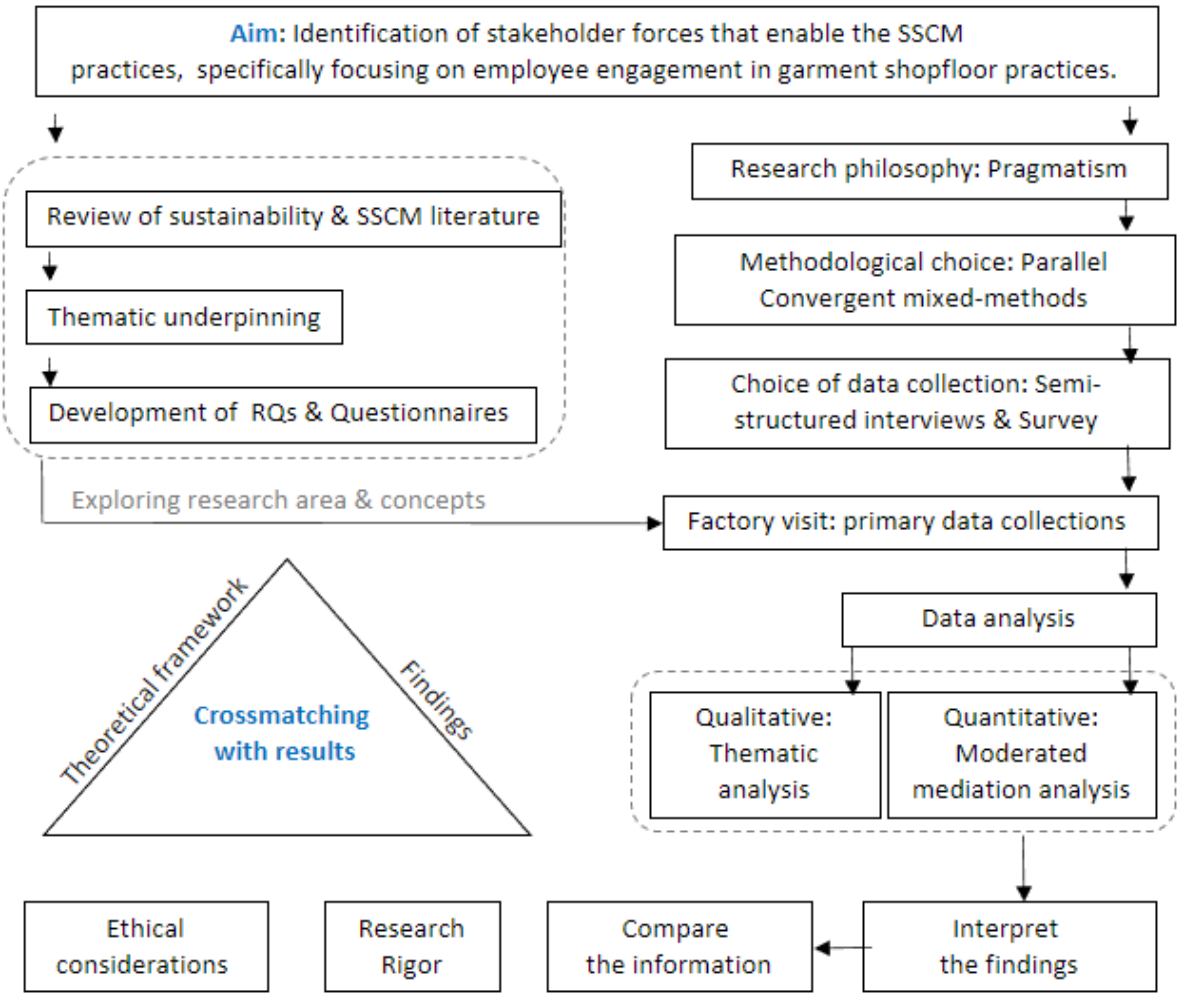
In addition to positivism and interpretivism paradigms, there is another position about paradigms called pragmatism, which derives from a view that emphasizes the research problem and question instead of methods, therefore, pragmatism uses pluralistic approaches to derive knowledge about the phenomenon or problem (Rossman and Wilson 1985). Cherryholmes (1992) and Morgan (2007) view pragmatism as detached from any philosophical system, as the pragmatists use a mixed-method approach that follows both quantitative and qualitative research assumptions. Rather than subscribing to only quantitative or qualitative methods, pragmatists have the freedom of choice regarding research procedures, methods, and techniques that best fit their purposes and need to provide the best insight of a research (Creswell and Creswell 2018). Pragmatists agree that research always arises in various contexts; therefore, they are free to choose multiple methods, different assumptions, and different data collection and analysis techniques, provided that a strong rationale supports the reasons why using mixed methods.

SCM has an interdisciplinary nature that is obvious from the different fields of researchers and practitioners involved. Many researchers found that quantitative measurement was insufficient to solve the complex problems emerging in SCM, and that more diversified research methods such as qualitative methods were needed. Consequently, despite the fact that positive quantitative methods dominated the field of SCM, researchers are now trying to introduce different research principles and methods into the field in order to find a deeper and broader understanding. For example, both Dennis (1993) and Marsh (1993) in their SCM research used empirical study, which involved both quantitative forms of data and qualitative interpretation, to investigate the production and inventory control system (Dennis, 1993) and the life cycle of manufacturing cells (Marsh, 1993). This is a type of adoption that involves both the qualitative and quantitative nature of SCM research and serves as the basis for using mixed methods as a research approach.

3.2.2.5 Relation to the Study

As mentioned earlier, deciding which research paradigm to follow is essential since it determines the way the research is conducted based on the research approach to be used (i.e., quantitative, qualitative, or mixed methods). This current research used the pragmatism paradigm as it was considered as the most suitable and valid philosophical approach to current research because it is regarded as the philosophical approach for a mixed-method approach (Denscombe 2008). Pragmatism allows a collection of assumptions about knowledge and enquiry that serves as the foundation of the mixed methods approach, which differentiates the purely quantitative approaches (positivism) from the purely qualitative approach (interpretivism) (Denscombe 2008, p. 271). In so doing, pragmatists are in a preferable position to utilize a qualitative approach to inform the quantitative part of research, and vice versa (Onwuegbuzie & Leech 2005, p. 383). Considering these postulations, this research used the pragmatism paradigm, and thus the next section considers research approaches according to the pragmatic philosophy. Figure 3.1 shows the mind map of this research undertaken.

Figure 3.1: Mind mapping of the research process.



3.3 Research Approach

There are several aspects to consider before selecting a research approach to employ in the research, such as research purposes and the state of the prior theory (i.e., mature, intermediate, and nascent). Defining research purposes is very fundamental before conducting research as research purposes unravel to specific research approaches (Creswell and Creswell 2018). For example, if the research aims to identify variables to study, to understand the best antecedents of outcomes, to relate variables or hypotheses, or to test a theory, then the best approach is quantitative. With quantitative approaches, researchers follow the philosophical assumptions of

positivism and employ surveys or experiments as their research strategies. They typically employ predetermined approaches, closed-ended questions, and numerical data (Creswell and Creswell 2018). In addition, social scientists typically used three types of research approaches to explain the underlying phenomenon: exploratory, explanatory, and mixed methods. The following sections will focus each on turn.

3.3.1 Exploratory

Exploratory research is a research framework that is used to provide insights and understanding of the research problems when a researcher needs to define the problem more precisely (Malhotra 2007), particularly in the subject area where the knowledge is limited and there is no clear comprehension about a phenomenon (Churchill and Iacobucci 2010). Exploratory research is qualitative in nature, flexible, and unstructured (Burns and Bush, 2002). The sample is small, nonrepresentative, and selected to produce maximum insights, which is regarded as tentative and serves as input to advanced research (Malhotra 2007).

As a matter of fact, researchers often try to explain new phenomena of a specific field/s and where little or somewhat limited research has been done so far. These types of thinking involve much more than just the variables to study, and the concept needs to be further explored. Then, an exploratory approach may be needed since the concept is new, and existing theories do not apply to a certain context or sample being studied (Morse 1991). With the help of qualitative methods, several researchers followed the interpretivism paradigm and employed narrative, case study, grounded theory, or ethnography strategies of enquiry to explore the phenomenon (Burgess et al.,2006; Christopher, 2005). As Creswell and Creswell (2018) described, the qualitative approach is mainly practiced when researchers collect meanings from participants, focus on a single phenomenon, bring personal values and position themselves into the research, study the context of participants, or validate the veracity of findings where the mixed methods approach could provide a rational for mixing quantitative and qualitative approaches.

3.3.2 Explanatory

Explanatory research is a research framework that is used to determine, evaluate, and select the best procedure to take with a primary objective to test specific hypotheses and relationships in questions (Malhotra 2007). Explanatory research is distinct from exploratory research in a way that the information required is clearly specified, and that the research is quantitative in nature, more formal and structured (Churchill and Iacobucci 2010). This type of research uses a large and representative sample to obtain conclusive findings which are used as input prior to decision-making (Malhotra 2007). There are two types of research in this approach: descriptive and causal. Descriptive research is used mainly to identify relationships between two or more variables being studied (Aaker et al., 2011). It requires a clear specification of what, why, where, when and how the research is done (Churchill and Iacobucci, 2010). Meanwhile, causal research is broadly used to determine cause-and-effect relationships in experiments (Churchill and Iacobucci 2010) or in investigations of the relationships between causal factors and predicted outcomes (Hair et al. 2010).

3.3.3 Mixed Methods.

Turing to mixed methods involves conducting quantitative and qualitative data collection, analysis, and interpretation in a study that investigates the same phenomenon (Onwuegbuzie and Leech 2006). According to Johnson and Onwuegbuzie (2004) the mixed methods approach combines its strategies of inquiry based on inductive, deductive, and abductive logic in order to discover patterns to test the theories and hypotheses, and to uncover and rely on the best of a set of explanations in understanding the findings, which may be useful when either quantitative or qualitative approach alone is inadequate to ultimately understand the research problems.

Furthermore, with the mixed methods approaches, social science researchers often follow pragmatism philosophical assumptions which provide a bridge between the quantitative and qualitative paradigms (Onwuegbuzie and Leech 2006; Gammelgaard 2004). They typically employ open-ended and closed-ended questions, predetermined and emerging approaches, and quantitative and qualitative data collection and analysis techniques (Creswell and Creswell 2018).

3.3.4 Overview of Mixed-Methods in Sustainability/SCM/SSCM

The research topic of this thesis is related to SSCM, which is situated within the field of sustainability and SCM. Therefore, the following sections outline the use of mixed methods and its feasibility in these related fields.

In sustainability research, Choudhary et al. (2019) suggest that the use of mixed methods has the potential to improve the quality of research when investigating complex empirical scenes. Furthermore, both Ayan et al (2022) and Verma et al (2021) provide evidence for a better understanding of sustainability, particularly for emerging economies. For example, Bhutta et al (2021) explore the potential relationships between innovation capacity and SCM practices using both narrative review and survey approaches in the service industry of Pakistan and find that the credibility of environmental sustainability is still in the imagination and supplier relationships act as the main antecedent. Similarly, Verma et al. (2022), through a systematic review and also an analytical hierarchy process, highlighted how some empirical issues of Indian industries are evolving around Industry 4.0. Meanwhile, Ayan et al (2022) acknowledged the importance of both bibliometric analysis and thematic mapping, which could provide a better understanding of blockchain technology, especially in an empirical scene for Turkey.

More recently, Valmohammadi and Hejri, (2023) revisited the potential of mixed methods while proposing a green process model for Iranian software industry using both systematic literature review and structured equation modelling. Similarly, Uribe

et al (2023) also used systematic literature review for content validity and structured equation modelling for construct validity to analyse the sustainable performance of the Colombian hospital industry. A summary of previous studies on SSCM and related topics that used mixed methods for empirical analysis is presented in Table 3.3.

Authors	Topic/s	Mix-Methods		Context	Field/s
		Qual	Quan		
Grant et al., 2023	SCM	SLR, case study	Survey	Finland UK	Various
Sarache et al., 2023	SSCM	SLR-Content validity	Construct validity-structural equation modeling	Colombia	Hospital
Valmohammadi and Hejri, 2023	Sustainability	Systematic literature review, interviews	SEM (PLS-SEM)	Iran	software industry
Faisal, 2022	Circular supply chain	Sequential design interpretive structural modelling	Mediating relationships (PLS-SEM)	Qatar	Industry 4.0
Ayan et al., 2022	Sustainability	Bibliometric analysis, content analysis	Thematic map	Turkey	Blockchain
Verma et al., 2022	Sustainability	systematic literature review	Analytical Hierarchy Process (AHP)	India	Industry 4.0
Bhutta et al., 2021	SSCM	Narrative review	Survey (SEM-Cluster analysis)	Pakistan	Service industry
Choudhary et al., 2019	Sustainability	Interviews, content analysis	Hierarchical modelling, multi-attribute decision making	UK	Various
Esmael., 2019	Socially responsible SCM	Narrative review	Survey-hierarchy-based model	Gulf countries	SME

Table 3.3: Previous studies on SSCM/related SCM have used mixed methods.

3.3.5 Rationale for using mixed methods

As mentioned earlier, it is essential to decide which method to follow, as this will determine how the research will be conducted based on the research questions. Several SSCM researchers have highlighted the credibility of mixed methods,

especially when the research problems and questions are multifaceted and complex in nature (Grant et al., 2023; Esmael, 2019). It is clear that manufacturing-based garment factories typically operate with an expanded set of stakeholders and a highly disruptive institutional environment, which necessitates the adoption of a range of perspectives from a philosophical and methodological perspective, particularly mixed methods of data collection and analysis.

To support the adoption of mixed methods, Faisal, (2022) illustrated a strong argument about how both qualitative and quantitative studies complement each other, especially when using the empirical mode to generate robust theory. In this sense, social scientists typically use open-ended questions, text or image data, and emergent approaches. In particular, Voss et al. (2002) pointed out that several SCM concepts and theories (e.g., lean-to-manufacturing strategy) were actually developed through qualitative research, and Soltani et al. (2014) showed how the qualitative approach can be a bridge between scientific knowledge and solving a practical problem in the OM field, which is one within the SCM field. These arguments highlighted the importance of research objectives when selecting a research approach. In addition, research purposes also serve as the basis for selecting a research framework and the information needed to solve research problems (Saunders et al. 2012). In the literature, the classification of research frameworks has been widely discussed, including exploratory research and conclusive research, with the latter consisting of descriptive research and causal research (Cooper and Emory 1995; Malhotra 2007; Sounder et al. 2009).

3.3.6 Approach for this study

By reviewing the discussion above, the most appropriate research approach for this research is the mixed-method approach because it fits most with the research questions of this research provided with some rationales. First, both quantitative and qualitative approaches have their own weaknesses. Thus, a mixed methods approach can neutralize the weaknesses of each approach and can provide the best approach to solve the research questions by gaining the advantages from a data sources

triangulation (i.e., to seek justification of findings from different methods) (Jick 1979; Creswell and Creswell 2018). Second, since this research falls into both exploratory and conclusive research frameworks, as well as the intermediate theory, employing either quantitative or qualitative approaches only can be problematic, such as producing less-convincing results and reducing the potential of obtaining a deeper understanding of the topic being studied (Edmondson and McManus 2007).

In addition, Edmondson and McManus (2007) also argued that when research falls into the intermediate theory stage, using only quantitative approaches can lead to problems such as a lack of reliability and validity of new constructs and measures, while using only qualitative approaches may provide insufficient support for the new theories or relationships being proposed. Thirdly, the use of mixed methods allows the researcher to use the findings from one method to inform and complement the other. Finally, in terms of the contextual literature, none of the papers to date have used mixed methods, which will allow a methodological contribution to be made by being one of the few studies to use a mixed methods approach. Therefore, these reasons support the assertion that the use of mixed methods is most appropriate for this research.

The following discussion of research designs and methods is based on the mixed methods approach used in this research.

3.4 Research designs.

According to Creswell and Creswell (2018), there are three primary research designs for the mixed methods approach in the social sciences field: convergent/convergent parallel mixed methods, explanatory sequential mixed methods, and exploratory sequential mixed methods. Convergent mixed methods allow the researcher to merge quantitative and qualitative data to provide a thorough analysis of the research problem. The researcher typically collects both quantitative and qualitative data at the same time and then compares the information to interpret the findings.

Explanatory sequential mixed methods allow the researcher to collect quantitative data in the initial phase, analyse the findings, and then further explain the quantitative findings with the qualitative data collected in the next phase. Research with a strong quantitative orientation tends to use this type of design. In contrast, exploratory sequential mixed methods allow the researcher to begin the investigation with a qualitative phase to explore the views of the research participants. The qualitative data is then analysed and used to specify features that need to be further examined or tested in the quantitative phase (Creswell and Creswell 2018).

As this research aimed to explore the views of manufacturing-based stakeholders as the research participants and want to obtain top management's understanding of SSCM practices (via semi-structured interviews) and lower- management's insight from the shop floor's sustainable practices (via surveys) and use the participants perceptions about employee engagement in SSCM practices as well as performances, and conceptualised the constructs around SCM filed, parallel convergent mixed methods will be the most suitable and recommended design for this research, as described by Creswell and Creswell 2018. With this in mind, the researcher began the research by involving both qualitative and quantitative data collection and analysis techniques (see Figure 3.1).

3.5 Research methods

In terms of research method, the two main options (i.e., semi-structured interview and survey) have been used in data collection (see Figure 3.1). Hence, the research started with two semi-structured interviews and with a small number of relevant survey cases; both of them are then analysed to inform questionnaire items for border semi-structured interviews and surveys. The following paragraphs highlight the design and development of semi-structured interviews and survey questionnaires and all relevant justifications as research methods. The discussion around the selections of methods (i.e., semi-interview, questionnaire survey) and associated methodological bias is justified in the following sections.

3.5.1 Semi-structure interview

In social science research, a semi-structured interview is the most frequently used method. It is the interactional exchange of dialogue (Mason 2005), and it is the most natural thing in the world (Silverman 2010). The foundations of interviews and interviews are the interpretations of the data derived from social scientists that maintain and generate conversations with people about specific topics or themes. Additionally, through this method, the researcher yields a rich insight into respondents' biographies, experiences, opinions, perceptions, attitudes, and feelings (May 2011). This data collection method is very suitable for exploratory and inductive research, and is very well suited to its purposes (May 2011). Furthermore, in response to business and management contextual research, the semi-structured interview is often considered the is one of the best data collection methods, specifically where the identification of social and organisational realities involved (Easterby-Smith 2012). A distinctive advantage of semi-structured interviews is that this format of interview approach is flexible in nature and helped to evaluate the exploratory data (Bryman, 2012).

As the research aim is to identify the underlying stakeholders' forces of the Bangladeshi garment industry, semi structured interview methods fill the necessities (Bryman, 2012). Moreover, this method will also meet the needs of answering the research questions RQ1, RQ2 and RQ3 (See 1.6) which are exploratory in nature.

3.5.2 Survey

Surveys are considered the most efficient, accurate, and inexpensive way of collecting information about a given population. Over the years, the survey research technique has become scientific and accurate (Zikmund 2003). The use of a survey provides systematic measurement and offers the possibility of replicating the study in other contexts. Another reason for the ability to replicate the study is that researchers are considered external; in this sense, regardless of who conducts the study, it would be

expected to generate the same results. A survey could provide more appropriate and accurate managerial implications when conducted correctly. An important feasibility of this study is the survey questionnaire is to ask each interviewee the same standardized questions, where the order of questioning is fixed, and wording is usually specific and also provides little scope for probing or deviating from the specified agenda (May 2011). Moreover, survey can measure facts, attitudes, or behaviours, and the collected quantifiable data can implement hypotheses which created an opportunity to answer RQ4 (see 1.6).

Hence, as this study aims to collect data about a population (i.e., lower-level management of garment factories who manage the garment worker's day-to-day operational activities), it is more appropriate to use a survey questionnaire for data collection.

3.5.3 Methodological bias

The researcher was aware of the possibility of method bias present in this study. Anticipating that, this research minimised the effects of bias through a careful design of the research procedures (MacKenzie and Podsakoff 2012). The researcher avoided these conditions by: translating the questionnaire from English to Bangla using a back-translation procedure; avoiding ambiguous or unfamiliar terms; using clear and concise language; simplifying complex questions and vocabulary; pretesting the questionnaire to ensure it is written at a level the respondents can comprehend (will be discussed in Step Nine); and selecting respondents who have the experiences relevant with the issues of interest (i.e., respondents from top-level management and respondent from lower-level management of garment factory). Mention that for the semi-structured interview, the mode of data collection was mixed (bilingual), whereas for the survey, the mode of data collection was basically Bangla, although some English phrases (i.e., sustainability, supply chain management, operations) were used in English format to reduce the complexity.

3.6 Research Ethics

Ethical issues cannot be ignored because they directly relate to the integrity and quality of research and related fields (Bryman, 2012). Therefore, before focusing on the details of the data collection methods of this thesis, questions related to research ethics must be discussed.

3.6.1 Overview of research ethics

According to Hay (2016, P 30) 'to behave ethically in …. research requires that you and I act in accordance with notions of right and wrong- that we conduct ourselves morally. Ethical research is carried out by thoughtful informed and reflexive [researchers] who act honourably because it is the right thing to do, not just because someone is making them do it'. Typically, ethics issues are popular in medical science, because of the harm that experiments might bring to participants, which is also related to the financial power of the funding bodies, such as drug companies (Easterby-Smith et al. 2012). This phenomenon is also applicable to social science research. According to Israel and Hay (2006, P 3), 'Ethical behaviour helps protect individuals, communities, and environments, and offers the potential to increase the sum of good in the world. As social scientists trying to 'make the world a better place' we should avoid (or at least minimize) doing long-term, systematic harm to those individuals, communities, and environments'. Consequently, researchers must consider ethical aspects during the research process, anticipate ethical issues involved, and think about how to overcome them.

Moreover, in empirical research several participants are involved such as the researcher, research respondents, supervisors, participating organisations, funding bodies, etc. All of them interact with each other throughout the research process. As Zikmund (2003) described, researchers have the right to seek information, whereas research respondents believe they have the right to maintain privacy. Ethical considerations are important aspects in a sense, in one side ethical matters play an

important role in collecting data with an affirmation that the interests of participants are not compromised throughout the research process (Bryman & Bell 2007) whereas on another side, this also creates a scope for identify new insights about knowledge. In particular, where primary data collection involved human research participants, ethical consideration played an important role.

3.6.2 Ethical considerations for this study

This research study was designed in accordance with the Cardiff Business School policy on the ethical conduct of research involving human participants, human material and human data. The primary focus is to protect the safety, rights and dignity of all participants who are involved with the research process and also foster an environment where research is conducted to the highest ethical standards. To start with the ethical process, an application was submitted after a discussion with the primary supervisor to review the purpose of the investigation, the questions, and the associated risk factors. Both questionnaires, that is, interviews and surveys, along with a consent form and a participatory information sheet, have been submitted to the Ethics Approval Committee. A country risk factor analysis has also been carried out to protect researcher rights and safety.

According to ethical requirements, the confidentiality of the research respondent was ensured through appropriate ethical procedures. With this in mind, interview respondents were assured of their confidentiality, anonymity, and privacy through a participatory information sheet. A Data Protection Act, guided by Cardiff Business School, was also provided. All collected data were kept strictly confidential and could only be accessed by the researcher, and the supervisors were mentioned throughout the process. It is also mentioned that the collected data will be securely stored at Cardiff Business School for at least five years. For the survey questionnaire, the voluntary nature of participation was emphasised. Several considerations, such as participants, could withdraw their response at any time or refuse to answer any question. A consent form was attached with an overview of the research aim and is enclosed with the questionnaire pack. The participatory information sheet, the consent

letter, and the approved ethics certificate are included in the appendix (see Appendix 6).

3.7 Research sample

Typically, in mixed methods research, an organized sampling plan is needed to verify each selected sampling participant by researcher (Etikan, Musa, and Alkassim 2016). As Cavana et al., (2001) described 'sampling plan decisions relate to identifying and selecting an appropriate unit of analysis such as an individual person, groups, organisation(s), industry, specific programmes, and activities'. In line with this argument, the primary motive of this research is to examine SSCM forces across manufacturing-based stakeholder groups, particularly for the garment industry to highlight the indispensable effects of employee engagement in shop floor settings. However, this study is limited to manufacturing-based stakeholders in the research setting of Bangladesh. Mention that, investigating SC stakeholders is a very long and complicated process as it is hard to get access to and obtain data from further low-levels of stakeholders (Bhakoo and Choi, 2013). Furthermore, the COVID-19 pandemic affected research procedures several times, that is, changes in research settings, limited the number of research participants, and limited the category of SC partners. Hence, for this research, manufacturing stakeholder groups that are actively associated with sustainable practices and performance on the garment factory shop floor have been chosen as the main analysis unit. However, this is consistent with the aim and focus of this study, which is to examine available SSCM forces and how employee engagement enables shop floor SSCM practices across the supply chain.

For this study several criteria have been applied to select manufacturing factories of Bangladesh. First, the selected factory must be a manufacturing factory in Bangladesh. Secondly, the selected factory needs to have 'LEED' certification from the legal authority in Bangladesh for their operational activities. Third, the selected factory must follow 'ACCORD' and 'Alliance' for its social practices. In addition, several more criteria have also been applied to select research participants. Initially, as these

factories already have certain certifications as ‘Green factory ‘and ‘LEED factory’ for their current operations and sustainable practices, it implied that the respondents from these factories are aware of the research term like ‘sustainable’, ‘sustainability’, ‘supply chain management’, ‘sustainable supply chain management’ etc. Hence then, the research sample are categorised into two distinctive categories- respondents for semi-structured interviews, and respondents for questionnaire survey.

3.7.1 Semi-structured interview

In social science research, the major sampling approach is purposive sampling (Bryman, 2012). The purpose of the sampling is to strategically sample participants so that those samples relate to the research questions. In other words, research questions should indicate which categories of people should be the focus of attention and therefore be tested (Bryman, 2012). As the research aim is to identify stakeholder forces, which influenced the garment shop floor’s SSCM practices as well as performances, the highly experienced factory professionals were selected. Additionally, the research questions are also surrounded by the nature of the inbound garment stakeholders and their sustainable practices. Accordingly, the semi-structured interviews were conducted with the top level of management, who are directly related to the decision-making phase of shop floor sustainable practices and have the most knowledge of the garment business.

Therefore, based on several criteria recommended by Soundararajan & Brown (2016). First, the respondent’s level of involvement and relevance to the research context (i.e., employed by a manufacturing-based garment factory in Bangladesh). For example, the respondents needed are stakeholders of the garment industry in Bangladesh, including factory owners, BGMEA (Bangladesh Garments Manufacturing and Exporters Associations) officials, union leaders, social workers, managing directors, senior managers, middle managers, junior managers within manufacturing-based garment factory/factories. Second, their level of awareness related to the aspects of SSCM practices and performances in the research context. Third, practical accessibility. Fourth, their willingness to participate in the process. Based on the above

considerations, the purposive sampling technique is deemed appropriate for mixed-method research since it requires participants from information-rich factory which illuminate the questions being investigated (Patton et al., 2015).

3.7.2 Survey

Turning to the design of the survey sampling frame, a sampling frame of the survey population needs to be defined that most closely represents the population of the context being studied. This study is focused on Bangladesh, where the garment industry contributes 81.82% to the total export of Bangladesh in 2021-22 and Bangladesh accounts for 6.3% of global garment exports (Statista, 2021). Given such identities, it might be advantageous to develop a sampling that represents the population number of LEED-based garment factories by district base. However, the lists of such populations do not exist and thus caused difficulty in creating a sampling frame based on that criterion. Therefore, instead of selecting such a sampling frame, the researcher selected a sampling frame that focuses only on respondents who meet the selection criteria of the respondents, i.e., lower-level management stakeholders of the Bangladeshi garment industry chosen depending on the respondent's active participation in shop floor activities. For instance, the supervisor, line manager, and technicians of the garment operation line (i.e., within the respective production division of your factory/factories) who have direct command of garment workers, as well as responsibility for workers' supervision.

Hence then, Given the lack of lists of sample size, the most visible something method to use in this research was snowball sampling. Snowball sampling is also referred to as chain referral sampling (Biernacki and Waldorf, 1981). Snowball sampling is useful in studies where respondents are not easily identifiable (Bailey 1994) because it allows the researcher to reach respondents recommended by initial gatekeepers (i.e., semi-structured interview participants). However, snowball sampling can cause sampling bias and is likely to generate a homogenous sample that may not represent the population (Bailey 1994; Babbie, 2004; Chisnall, 2005). This is because the initial participants are likely to recommend the researcher to respondents based on social

networks (Brown 2005) and subjective choices of the initial participants (Atkinson and Flint, 2001). However, sampling bias in snowball sampling can be reduced by acquiring referrals from several different social groups rather than only one group, to increase the representativeness and diversity of the sample (Emmanuel 2009). Similarly, the snowball bias may be addressed by initiating several distinct referrals and generating a large sample (Atkinson and Flint 2001). Therefore, to reduce the snowball sampling bias, the researcher carefully selected the initial participants to start the referral chains, of whom they varied in their demographic profiles to generate nonhomogeneous research participants and increase the representativeness of the sample.

A detailed description of the sample size requirement is presented in the quantitative analysis chapter (see 5.4.1.1).

3.7.3 Access to the research participants

Establishing preliminary communication with potential participants and obtaining access to the interview was a difficult task, both personally and organisationally. For example, one of the personal restrictions is that some inbound top-level managers are suspicious of research investigations. Consequently, in the aftermath of the Rana Plaza disaster, especially as a result of the normative climate, there may be prejudices about the social preference of the interviewees. Several measures have been taken to reduce the possibility of interviewees being influenced by the motivation to display themselves in accordance with sustainability standards. First: participants were assured that their agreement to participate in the research process was optional. Second: an approach was adopted to ask both positive and negative questions to interviewees during the conversation. Third: concerning the problem of anonymity, the interviewees were informed that their identities, positive and negative responses would not be disclosed under any circumstances. Fourth: questions are carefully formulated to avoid socially desirable responses, rather than focusing on specific answers. Finally, follow-up and probing indirect questions were asked of interviewees during

open discussions. A sample of a participant information sheet and a consent form is provided in Appendix D and E.

Additionally, some managers indicated interest, but due to their other personal commitments, they did not agree to participate. Regarding organisational management restrictions, several managers requested their superiors' official permission to participate in research. Furthermore, it is difficult to find time to interview due to the busy work schedule of garment owners and managers. For example, some managers confirmed after two months of repeated communication that they were involved in this study. Therefore, the process of finding relevant participants and obtaining their consent has proven to be time-consuming and laborious. Furthermore, some garment managers are more cautious about the lower levels of management involvement and performed crossmatch between survey questionnaires and garment owner permissions, especially highlighting the sensitivity issues in the aftermath of the Rana Plaza disaster.

Once both types of research participants (i.e., semi-structured interview and questionnaire survey) were identified, the researchers adopted several approaches to recruiting interview respondents and survey respondents. First: the main aim was to get the contact email addresses of top-level garment management of garment suppliers from BGMEA and BKMEA. Second: the corporate website of Bangladesh's suppliers on the list was also used to locate the contact numbers of the participants. Third: social networking websites such as Facebook and LinkedIn are used to recruit potential research participants, as these forums are very useful for obtaining personal and professional information about participants. Finally, the researcher's personal connections played an important role in recruiting interviewees for this research. Thus, a database was finally created, with contact details of potential participants from clothing suppliers and other relevant stakeholders. Surprisingly, the recruitment of survey participants was easier than that of interview participants, as the top level of management already had an understanding of the research aim and objectives of the research.

After identifying the appropriate potential participants and their contact details, 60 formal invitations were sent via email to garment owners and top-level managers to ask for their participation in the interviews, introduce the research project and include information sheets and consent letters. Once the relevant participants had agreed to participate, interviews were held. Interestingly enough, a significant number of top-level garment managers involved agreed to participate through referrals.

3.7.4 Place and time horizon

As this research sets out to capture the current stakeholder forces which predominantly influence the sustainability implementation of the Bangladeshi garment industry, an inductive approach was adopted for this study. Data collection took place in the major garment manufacturing regions in Bangladesh - Dhaka City, Gazipur, Narayanganj, Ashulia and Mymensingh –from late November 2019 to February 2020. Specifically, by following the parallel convergent mixed methods, both types of data collection (i.e., semi-structured interview and questioning survey) were conducted simultaneously. For instance, the interview in the morning and the survey in the after afternoon and vice versa.

3.8 Data collection: semi-structured interview

The first research method used was the semi-structured interview. Details of the approach adopted are now provided and the results of this are reported in Chapter 4.

3.8.1 Developing of an interview guide

For the purpose of collecting data from sample participants, a structured interview guide was developed based on the literature review of sustainability, sustainable supply chain management and employee engagement. The operationalisation of the

semi-structured interview constructs that make up the refined measurement items are described individually in the following sections.

Sustainability: In 1957, Selznick used an institutional framework to explain how internal and external stakeholders' groups could enhance sustainable expectations in business performance, which was extended by DiMaggio & Powell (1983) and highlighted the environmental and social aspects of operations and expanded the institutional theory to define why the business needs to operate in a socially responsible way. These ideas were embraced by contextual researcher Huq et al. (2016). They have made a niche contribution to the examination of the stakeholder group, that is, regulatory authorities and government agencies that directly confirmed the rules and regulations of the social behaviour of garment manufacturers to measure the sustainability of the Bangladesh garment industry. Therefore, this study followed their measurement items with an additional focus on the potential benefits of having sustainable practices in shop floor activities.

SSCM practices and stakeholder forces: In 2015, Touboulic and Walker's conducted a review of the literature to explore the theories used in sustainable SCM and relevant theories, particularly highlighted to identify the SSCM enablers, which observed by Nath et al., (2018, 2020) and Chowdhary et al, (2020) later on. Both researchers used the views of Touboulic and Walker (2015) to identify a deeper understanding of the multitier SCM and the supplier side of sustainability of the Bangladesh garment industry as a research context. Therefore, this study has used their measurement items to analyse the forces of SSCM in the manufacturing-based stakeholders of the Bangladesh garment industry. Some additional questions were also added, to examine the consideration around stakeholders' engagement while working together with SC partners (e.g., to share resources like; techno-savvy employees and finance).

Employee Engagement in sustainable practices: In 2009, Berns et al conducted empirical research on organizations' managers' perceptions and highlighted the

importance of employee engagement, particularly they provide evidence of how employees' 'sustainable mindset' could bring a major development in a factory's SSCM practices. These views were slightly adopted by contextual researchers Azim et al., (2021) and Chowdhary et al (2017) and provide further evidence of how garment factory's internal employees could determine the level of compliance for better workplace engagement, thereby assisting sustainable practices in recombining and utilising their substantial influence. Both researchers also proposed more research on employee engagement, particularly how employee engagement can enhance shop floors' SSCM practices as well as SSCM performance. This research attempted to add to this, and listed questions like 'What you think about employee engagement in SSCM?' and 'How can they (i.e., employees) can engage with it (SSCM practices)?'

Although a detailed semi-structured interview guide is provided in Appendix A, the sample themes within the interview guide in relation to the research questions of this study are highlighted in Table 3.4.

Topics	RQ1	RQ2	RQ3a	RQ3b	RQ4
Respondent's background (nature of respondents)	√				
Stakeholders' forces (institutional)		√	√	√	
Perceptions about SSCM practices as well as performances		√	√	√	
Employee Engagements in SSCM					√

Table 3.4: A sample semi-structured interview guide in relation to the research questions.

3.8.2 Conducting the interview.

Participants were briefly explained the research aims and general information about the research such as the duration of the interview (i.e., approximately 70 minutes) and type of interview (i.e., semi-structured interview). Once they agreed to participate in the research, the researcher added them to the list of participants and arranged the interview schedules. Participants who agreed to be interviewed received documents

via emails, consisting of interview guide, informed consent declaration, and consent form (see Appendices D and E). These documents were crucial to ensure that participants were well informed about the research in general and how it would be conducted, as well as to obtain their consent.

Information to participants with interview guides was necessary to ensure their readiness to respond to questions when interviews took place. At the beginning of the interview questions, the purpose of the research is presented. The rest of the interview guides were also described in a short way to give an understanding of the content. Similarly, the informed consent declaration was also essential to ensure that participants were aware that this research was conducted ethically. With the declaration, the participants were informed that the interviews would be recorded using a voice recorder and that they could review the recording. They were informed that their participation was completely voluntary without involving monetary incentives and that they could withdraw from the interview at any time for any reason. They were also guaranteed that they had the right to prefer not to answer any questions and that both their identity and their recording would be kept confidential or anonymous, following the General Data Protection Regulation 2018. After reading the interview guides and the informed consent declaration, participants were asked to voluntarily give their consent to participate in the interview by signing the consent form. Furthermore, the semi-structured method allowed researchers to continue a dialogue with participants, guided by interview guides, and followed by questions, probes, and comments as the interviews unravelled, which aimed to gather open data, to investigate the ideas, feelings, thoughts and perspectives of the participants on the topic being studied (DeJonckheere and Vaughn 2019).

3.8.3 Qualitative data analysis

The researcher viewed qualitative data as a set of procedures that involves subsequent steps to follow and multiple stages of analysis to conduct. The following

paragraphs discuss the steps to analyse qualitative data (i.e., data from interviews) recommended by Creswell and Creswell (2018).

3.8.3.1 Organising and preparing data for analysis.

This step involves organising and preparing raw data such as transcription of interviews, typing field notes, optically scanning materials, cataloguing visual materials, and sorting the raw data according to sources of information (Creswell and Creswell 2018). At this stage, the researcher organised and prepared the interviews that were stored in audio file format as raw data to be transcribed. The interviews were individually transcribed in a question-answer format.

3.8.3.2 Reading through all data

Once the transcripts have been prepared, the researcher rigorously and systematically reads the text to obtain the overall information and meaning. This overall information was attained by understanding the general ideas of what the participants were saying and the tone of the ideas. Emerging categories or themes were identified by understanding possible meanings and their connection with developing themes as the researcher read the transcripts repeatedly. Toward the end of this rigorous process, the researcher stopped reading and analysing the text when major themes had been identified and no new themes emerged (Marshall 1999, p. 419). The researcher used manual colour coding boards to identify the relevant themes and nature of stakeholders.

3.8.3.3 Coding of the data and generating themes.

Rossman and Rallis (2012) define coding as the procedure of organising data by classifying text or images gathered from data collection into categories and labelling those categories with a name or term. The coding process was adapted from Creswell

(2002) (see Table 3.5). The process started by reading through all the text, which was done in the previous stage, followed by identifying important information to generate many segments of text. These segments of information were named to create large number of categories (e.g., 30-40 categories). The researcher then identified redundant and overlapped categories and reduced them to a smaller number of categories (e.g., 15-20 categories). Finally, the researcher identified the most important categories from these reduced categories and extracted them into a few categories that captured the main themes of the qualitative findings.

Initial read-through text data	Identify specific segments of information	Label the information segments to create categories	Reduce overlap and redundancy among the categories	Create a model that incorporates the most important categories.
Many pages of text	Many segments of the text	30-40 categories	15-20 categories	3-8 categories
Initial read-through text data	Identify specific segments of information	Label segments of information to create categories.	Reduce overlap and redundancy among the categories	Create a model that incorporates the most important categories.

Table 3.5: Qualitative coding process (adapted from: Creswell 2002)

3.8.3.4 Representing and interrelating the themes

Once the major themes have been identified, the researcher represented the themes using a narrative passage which is the most popular approach to reveal the qualitative findings (Creswell and Creswell 2018). The narrative passage allowed the researcher to discuss a chronology of events, subthemes, multiple perspectives of participants, quotations, and interrelations between themes.

A further detailed illustration of the coding process is given in Chapter 4 (see Figure 4.2).

3.8.3.5 Nature of the identified stakeholders

As described earlier, this research study reported a couple of subdivisions of themes covered under inbound stakeholders, namely top-level management, lower-level management, proprietor, textile provider, enabler and influencer depending on their SC operational activities. Moreover, several findings suggested that sustainability practices of a typical form are mostly bound by the job responsibility of inbound stakeholders (Giunipero et al., 2012; Walker et al., 2008). This opinion also goes with the very case of the Bangladeshi garment industry. Interestingly, some stakeholder groups, like education supporters, indicated that the implementation of sustainability practices is also related to institutional perspectives. While the others, like- legislative bodies influence sustainability roles and regulations as one of the key drivers for SSCM. Below is an example of illustrative statistics and reference code of semi-structured interviews.

Pseudonym	Job title	Interview code	Stakeholder group	Duration (min)	SCM area
Mike	Chief operating officer	PF1-TM	Top-level	50	Production
Liam	Head of the supply chain	PF3-PO	Proprietor	42	SCM head
Will	Junior Manager Compliance	PF2-BM	Lower- level	19	Production/ Compliance
Penny	Assistant Manager	PF4-BM	Lower- level	36	Quality assurance
Steve	Store Manager	PF5-BM	Lower- level	42	Warehouse

Table 3.6: Example of an intensive interview's illustrative statistics and reference code.

Furthermore, Table 3.7 presented an overview of the interview participants, along with a clarification, of their job position within the factory management chain and the

number of total interview respondents. Moreover, more details on the associate data analysis technique and findings are presented in Chapter 4.

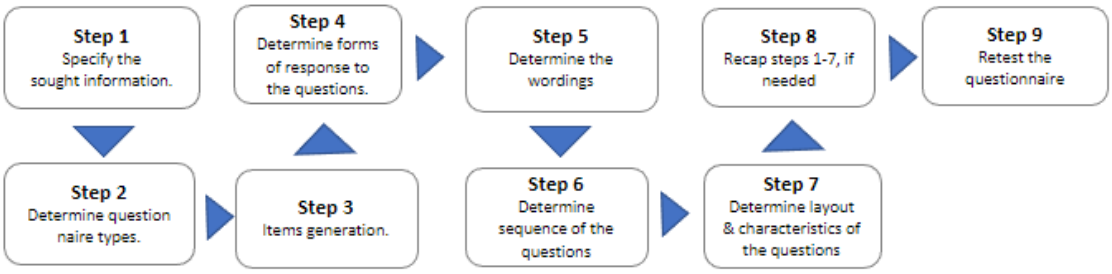
Stakeholder group	Clarifications	Examples of Job Roles	N. of participants
Garment manufacturer: top-level management	Personnel who worked as a decision maker for an individual manufacturing process.	Logistic head, senior executive of research and development.	16
Lower-level management of the garment manufacturer:	Personnel who work to guide the subordinate employee or workers	Line manager, technician, quality checker.	11
Proprietor	Owner of the garment/textile factory	Director, department head	4
Textile provider	Personnel who are directly related to the thread and yarn production	Maintenance of facilities, textile factory manager.	3
Enabler and influencer	Personnel who directly related to rules and regulation on the authority	Legislative bodies, distributors.	3

Table 3.7: Overview of the interview participants.

3.9 Data collection: Survey

The second research method used was a questionnaire survey. Details of the approach adopted are now provided, and the outcomes from this are reported in Chapter 5. However, the development of the questionnaire for this investigation followed the nine-step procedure recommended by Churchill and Lacobucci (2010). Figure 3.2 illustrates the questionnaire development process employed in this research.

Figure 3.2: Development of the survey questionnaires (adapted from Churchill and Lacobucci, 2010).



3.9.1 Step 1: Specify the sought information.

The details of required information related to the research aim and the research questions are proposed in Chapter 1. Depending on the literature review of Chapter 2 and the theoretical framework, the interview questionnaire was composed to seek participants from the top level of the garment factory management. The semi-structured interview questions were constructed around sustainability, sustainable practices, sustainable supply chain management, and sustainable performance. On the other hand, the survey questionnaire was composed to seek participants responses from lower-level of management, who are basically involved with garment worker's operational activities and the constructs are SSCM practices, stakeholder's decisions, employee engagement and firm performances (i.e., social performances, economical performances, environmental performances, and supply chain disruptions). Additionally, both the demographic profiles and organisational profiles were also included in the questionnaire to obtain insight and understanding of the respondent's knowledge and individual characteristics.

3.9.2 Step 2: Determine the types of questionnaires.

After indicating the information to be sought from the questionnaire, the next process is to decide the type of questionnaire and the method of survey execution. Saunders et al. (2009) classified questionnaire administration into two types: self-administered questionnaires and interviewer-administered questionnaires. The self-administered

questionnaires are filled out by the respondents themselves (i.e., administered and collected by post, hand, or email or internet), while the interviewer-administered questionnaires are filled out or recorded by the interviewer or researcher according to the responses of the respondents. In this research, only questionnaires administered by the interviewee were used to obtain data from the respondents. Mention should be made to the gatekeeper and further interview participants who have great reverential qualities to the communities involved in this research. These gatekeepers were contacted via email: An official key person from BGMEA and two key persons have been chosen from the top level of management through personal contact.

Background information regarding SSCM, and the Bangladeshi garment industry was collected in multiple ways including a literature review, connecting with stakeholders, and informal discussions. The semi-structured interview protocol and survey protocol were developed, to allow for both focus and flexibility and ensure that interviewees and survey participants had freedom to develop/choose their answers. A pilot study was conducted through Skype with two managers. From this, the importance of a bilingual approach was emphasised, to get a better understanding from the conversation. Therefore, the interview protocol was adjusted to include terms in Bengali. The complete interview protocol and survey protocol are given in Appendix B.

3.9.3 Step 3: Items generation.

After determining the type of questionnaire and method of questionnaire administration in Step Two, the next step is to generate the content of the questionnaire. Initially, the questionnaire items were developed from an extensive review of the literature dealing with the four constructs (i.e., sustainability, SSCM practices, stakeholder's forces, employee engagement) for qualitative and four constructs (i.e., SSCM practices, stakeholder decisions, employee engagement and firm performance) for quantitative methods being studied. Some of these items were adopted from different contexts and modified to fit the context of the Bangladeshi garment industry. The following tables, i.e., 3.8 to 3.12, provide details of specific construct items, description, associated

reference, theoretical perspective, adopted themes and their theoretical elements. In addition, items generated from stakeholder theory are referred to as ST and institutional theory is referred to as INT.

Adopting items from previous studies is advantageous as the items were developed and empirically tested (Bourque and Fielder 1995), and it allows the researcher to compare the items from another research (Bryman and Bell 2011). In addition, the pilot study provides rich information and insight from the experiences of the respondents in the phenomenon studied. Turning to the operationalisation of the survey questionnaire constructs composing the refined measurement items are described individually in the following paragraphs and associated tables.

3.9.3.1 Measurement items related to sustainable practices (SP).

Sustainable practices are categorised into 12 items. Table 3.8 summarised the measurement of a scale for the SP construct. The specific items and their references for these items are presented in Table 3.8.

Construct	Items	Description	Reference	Theoretical perspective	Themes/s	Theoretical element/s
Sustainable practices (SP)	SP1	Factory maintains good sustainable practices	Xu et al. (2013)	Other	Operational activities	GSCM
	SP2	Factory follows standards for sustainability (i.e., ISO 14001) quite	Govindan et al (2015)	Supplier selection mechanisms	Ethical reasoning	Normative (ST)
	SP3	Factory provides workplace safety training regularly.	Zorzini et al., (2015)	Multi stakeholder's perspective	Compliance	Coercive (INT)
	SP4	Factory ignores eco-friendly raw materials for production.			Eco- sourcing	Mimetic (INT)
	SP5	Factory provides a standard of living and regulated overtime wages for workers.	Ehrgott et al. (2011)	Stakeholder Theory	Compliance	Instrumental (ST)
	SP6	Factory uses a limited number of hazardous/harmful/toxic materials.			Operational policies	Governance mechanisms
	SP7	Factory efficiently consumes natural energy (i.e., use of sunlight, natural air).	Yadlapalli et al., (2018)	Other	Infrastructural legislation	Governance mechanisms

SP8	Factory neglects waste management	Huq et al. (2014)	Other	Operational policies	Sustainability
SP9	The factory strictly breaches health and safety standards (i.e., building fire safety) strictly.			Health & safety	SSCM
SP10	The factory does not use child labour.			Govt regulations	SSCM
SP11	Factory discrimination amongst workers.	Hoque et al., (2020)	Other	Discernment	Power Dependency (ST)
SP12	Factory has favourable employee initiatives (i.e., health care, insurance schemes).			Compliance	SSCM

Table 3.8. SP items in the survey questionnaire and their relevant references.

3.9.3.2 Measurement items related to SSCM practices (SSCM).

SSCM practices are categorised into 12 items. Table 3.9 summarised the measurement scale for the SscmP construct. The specific items and their references for these items are presented in Table 3.9.

Construct	Items	Description	Reference	Theoretical perspective	Theme/s	Theoretical element/s
SSCM practices (SSCM)	SscmP1	The factory has a strong commitment to SSCM from the managers.			Operational policies	Coercive (INT)
	SscmP2	Management is not familiar with other factories' knowledge and skills of SSCM.	Nath et al (2020)	Institutional theory	Knowledge Sharing	Mimetic (INT)
	SscmP3	Management does not believe in gift giving as bribery between partners.			Ethical reasoning	Normative (ST)
	SscmP4	We have strong alliances with our supply chain partners.	Kannan et al., (2002).	Supplier selections	Collaboration	Mutual Interest (ST)
	SscmP5	Supply chain partners help our factory improve our network.		Multiple stakeholders	Networking/communications	Mutual Interest (ST)
	SscmP6	Supply chain partners deliver sustainable audits to ensure internal SSCM.	Kannan (2018)		Audit	Descriptive (ST)
	SscmP7	Supply chain partners encourage our factory to ensure a better work/life balance	Nair et al., (2015)	Other	Awareness	Social sustainability
	SscmP8	Supply chain partners maintain transparency within the SCM network	Mausumi and Rahman, (2018)	Stakeholder Theory	Clarity	Mutual Interest (ST)
	SscmP9	Management introduces employee compliance and auditing systems with other factories.	Huq et al. (2016)	Stakeholder theory	Compliance	Instrumental (ST)
	SscmP10	Supply chain partners ensure that other factories do not use child labour.			Familiarity of stakeholder's	Descriptive (ST)

	SscmP11	Supply chain partners pay their workers a living wage.	Reinecke and Donaghey (2021)	Other	Compliance	SSCM
	SscmP12	Factory discrimination among the workers.			Discernment	Power Dependency (ST)

Table 3.9. SSCM items in the survey questionnaire and their relevant references.

3.9.3.3 Measurement items related to stakeholder decisions (SD).

Stakeholder decisions are categorised into 12 items. Table 3.10 summarised the measurement scale for the SD construct. The specific items and their references for these items are presented in Table 3.10.

Construct	Items	Description	Reference	Theoretical perspective	Theme/s	Theoretical element/s
	ST1	We know who our stakeholders are.	Large and Gimenez(2011)	Other	Familiarity of stakeholder's	Descriptive (ST)
	ST2	The factory has a large number of stakeholders compared to most of our competitors.	Kabir et al., 2020)	Stakeholder Theory	Familiarity of stakeholders	Descriptive (ST)
	ST3	Stakeholders have a direct influence on our operation.	Sauer and Seuring (2018)		Stakeholder authority	Coercive (INT)

Stakeholder participations/ decision (SD)	ST4	Stakeholders are unfamiliar with our training schemes.		Institutional Theory	Compliance standards	Coercive (INT)
	ST5	Stakeholders have specific activities for community participation and development.	Sayed et al (2017)	Institutional logics	Networking	Normative (INT)
	ST6	We feel peer pressure from our stakeholders to increase our working performance.	Rafi-Ul-Shan et al (2018)	Other	Peer-pressure	Job satisfaction
	ST7	We adjust our activities according to our stakeholders' demands.			Peer pressure	Job satisfaction
	ST8	Our factory's regular culture is to be productive all the seasons.	Gimenez and Sierra (2013)	Other	Operational Polices	SSCM
	ST9	We get extra monetary benefits for seasonal (i.e., pick-up time) work.			Compliance	SSCM
	ST10	Governing bodies regularly check-up our work to ensure health and safety standards.	Huq and Stevenson., 2020	Institutional Theory	Government regulations	Coercive (INT)
	ST11	Governing bodies regularly visit us to make us aware of the new regulation.			Government regulations	Coercive (INT)
	ST12	We are unable to talk with supervisory bodies about our concerns.	Cao and Zhang (2011)	Other	Discernment	Power Dependency (ST)

Table 3.10: ST items in the survey questionnaire and their relevant references.

3.9.3.4 Measurement items related to employee engagement (EE).

Employee engagement is categorised into 17 items. Table 3.11 summarised the measurement scale for the EE construct. The specific items and their references for these items are presented in Table 3.11.

Construct	Items	Description	Reference	Theoretical perspective	Theme/s	Theoretical element/s
Employee Engagement (EE)	EE1	Participating strongly in the growth and development of our factory.	Azim et al., (2021)	Other	Proactive attitude	Growth (SSCM)
	EE2	Management works for our empowerment.	Chowdhary et al., (2013)	Other	Empowerment	Job satisfaction
	EE3	Management practices fair behavioural norms for everyone.			Management support	SSCM
	EE4	Management provides constructive feedback on our performance.	Chowdhary et al., (2020)	Other	Management support	SSCM
	EE5	We feel liberal while doing our work and socialising.	Akhter et al., (2017)	Other	Employee empowerment	Job satisfaction
	EE6	Management appreciates, encourages, and supports our psychological performance.'			Management support	SSCM
	EE7	The working conditions are more satisfactory than those of our competitors.			Decent work	Social Sustainability

EE8	The factory has little space between our workstations.			Decent work	Social Sustainability
EE9	Managers provide positive feedback.	Soundarajan & Brammer, (2018)	Other	Management support	SSCM
EE10	We have a proactive attitude towards our work responsibilities.			Proactive attitude	SSCM
EE11	We feel a sense of pride working there.			Sense of accomplishments	Job satisfaction
EE12	We do not get enough help in our work, at peak times.			Management support	SSCM
EE13	Our motive is to increase our success along with our organisational prosperity.	Thomsen et al., (2012)	Other	Pro-active attitudes	SSCM
EE14	We feel pressure from other factories to increase our performance.			Peer pressure	Job satisfaction
EE15	Management has a little mechanism for our empowerment.			Management support	SSCM
EE16	We feel stressed out while working there.	Akhter et al., (2017)	Other	Decent work	Social Sustainability
EE17	We are solely responsible for our sustainability performance.			Sense of responsibility	SSCM

Table 3.11: EE items in the survey questionnaire and their relevant references.

3.9.3.5 Measurement items related to firm performances (FP).

Firm performances are categorised into 17 items considering, the environmental performances (EnvP), the economical performances (EcoP), and the social performances (SocP). Table 3.12 summarised the measurement scales for these three constructs. The specific items and references to these items are presented in Table 3.12.

Construct	Items	Description	Reference	Theoretical perspective	Theme/s	Theoretical element/s
Environmental Performance (EnvP)	EnvP1	The factory is efficient in using resources (i.e., electricity).	Goebel et al. (2012)	Other	Energy consumptions	SSCM
	EnvP2	The factory is struggling to provide sustainable raw material consumption.			Sustainable sourcing	SSCM
	EnvP3	Management is not in compliance with current environmental laws.	Klassen and Vachon (2003)	Other	Eco-management	SSCM
	EnvP4	We are pleased with the current environmental reputation of our factory.	Kannan, Govindan & Rajendran (2014).	Other	Eco-reputation	SSCM
	EnvP5	We are pleased with the environmental impact and risk of our factory to the general public.			Company image	GSCM
	EnvP6	Factory can do better in terms of environmental sustainability.			Eco-approach	GSCM

Economical Performance (EcoP)	EcoP1	Factory shares a great part in producing our owners' equity.	Gereffi et al., (2016)	Other	Economic viability	Social Sustainability
	EcoP2	Factory provides a higher profit margin than other factories.			Competition	Social Sustainability
	EcoP3	The factory has a higher sales volume than the similar kind of other factories.			Image	Social Sustainability
	EcoP4	Factory has a prestigious brand name among our other factories.			Brand name	Social Sustainability
	EcoP5	Management is satisfied with our factory's market share.	Irfan et al (2018)	Other	Economic viability	Social Sustainability
Social Performance (SocP)	SocP1	We are pleased with management in terms of awareness of sustainability initiatives	Baskaran, Nachiappan and Rahman (2011)		Management support	Sustainability
	SocP2	Management is inattentive to our performance.			Management support	Sustainability
	SocP3	Management works with our union to create awareness and protection of worker rights.		Other	Compliances	Sustainability
	SocP4	We are satisfied with the management in terms of community involvement and development.			Community development	Sustainability
	SocP5	The total condition of our factory is favourable for sustainable development.	Ehrgott et al. (2011)	Other	Image	Social Sustainability

Table 3.12: Firm performances items in the survey questionnaire and their relevant references.

3.9.4 Step 4: Determine the forms of response to the questions.

Typically, in quantitative research, four types of scales: nominal, ordinal, interval and ratios have been used by social science researchers (Bryman & Bell, 2007). For this study, a nominal scale has been adopted for demographic information and an interval scale has been adopted to measure constructs. There are two types of interval scales: rating and ranking have been used for measuring the attitudinal response of the participants toward the research topic (Sekaran & Bougie, 2010). Specifically, the rating scale capture the participants' responses within the provided response category (Sekaran & Bougie 2010), where the respondent can communicate internal states such as attitudes, feelings, or beliefs more accurately (Churchill 1979). In this research, the opinions of the respondents about the constructs were collected based on rating scales.

A 7-point Likert has been employed in order to provide respondents with opinions for articulating their information. Mention that, in SC research, Likert scales have been used commonly by several social science researchers (Yadlapalli et al., 2018; Swafford Ghosh & Murthy, 2006; Yusuf et al., 2004). With this scale, a respondent has the opportunity to express either a favourable or unfavourable attitude towards the object of interest (Cooper & Schindler 2006). Furthermore, for quantitative analysis, Likert scales are recommended for the implementation of data analysis procedures (Tabachnick & Fidell 2011; Hair et al., 2010). Respondents were instructed to indicate their level of agreement with items based on a 7-point Likert scale, which consisted of numerical values indicating the following: ‘1 = Strongly Disagree’; ‘2 = Somewhat Disagree’; ‘3 = Disagree’; ‘4 = Neither Agree nor Disagree’; ‘5 = Agree’; ‘6 = Somewhat Agree’; and ‘7 = Strongly Agree’. The respondents were instructed to tick (√) their responses to the statement indicated with their numerical values.

3.9.5 Step 5: Determine the form.

The vocabulary issue is a common problem that many researchers encounter with regard to the questionnaire wording because most of them are relatively better educated than the research respondents (Churchill and Iacobucci, 2010). Moreover, item ambiguity, complex questions, lack of verbal or cognitive ability, education, and lack of experience about the topic being studied can cause method bias which significantly influences reliabilities, validities, and covariation issues between latent constructs (MacKenzie and Podsakoff 2012).

3.9.6 Step 6: Determine the sequence of the questions.

The semi-structured interview questionnaire is divided into five parts in total, with an initial statement about the research aim of this study. **Part One** is related to the background/general information about the overview of the respondent and the organisation to provide evidence about the compatibility of the respondent. **Part Two** and **Part Three** related to the queries around 'sustainability', 'shop floor sustainable practices', 'benefits of having sustainable practices', 'SSCM', and 'stakeholder decisions'. **Part Four, is** consistent with questions reflecting on 'employee engagement in sustainable practices', 'moderating forces related to SSCM', 'employee engagement in SSCM' and **Part Five** (i.e., probing questions).

However, the survey questionnaire for this study was divided into six parts in total. **Part One** aims to gather information on the respondent profile (i.e., position, level of education, working department, employment years) and organisation profiles. Respondents were asked to indicate their responses in relation to themselves and their organisations by taking the boxes provided. **Part Two** and **Part Three,** are related to the independent variables of sustainability practices and the level of SSCM practices. **Part four** is associated to the moderating variables of stakeholder decisions and **Part five** is associated to the mediating variable relation to employee engagement. The final **Part Six** consisted of questions reflecting the construct of the

dependent variables related to firm performances, i.e., social performance, economic performance, environmental performance, and supply chain disruptions.

3.9.7 Step 7: Determine layout & characteristics of the questions.

As Churchill (2002) described, 'the look and layout of the questionnaire played an important role in influencing the willingness of the respondents to participate in and complete the survey' and the accuracy of the responses (Malhotra 2007), both questionnaires were designed using plain text with a white background to avoid eye fatigue. Particularly, both types of participants were requested to sign in the associated consent form before the actual interview/survey. Besides, in the interview question, each section used bullet points to distinguish that subject theme, and in the survey questionnaire, each part is separated by using the layout of the table to minimise confusion. Furthermore, each part was presented on an individual A4 size page to maintain the participant's concentration. Some probing/follow-up questions, i.e., 'Can you confirm whether SSCM is important for you?' and 'Can you confirm whether you are willing to engage your employee more in SSCM procedure?' were also used at the end of the interview questions to signpost the conversation.

3.9.8 Steps 8 and 9: Recap steps 1-7, retest the questionnaires and pilot study.

Once the complete questionnaire draft was ready, the researcher re-examined steps one to seven in terms of sequence, look and wording. Hence then, pretesting the questionnaire was taken, which is a crucial step in the research process as it can identify potential issues with the sequence and wording of the questionnaires in the actual data collection condition (Parasuraman, Grewal and Krishnan 2004). Before the questionnaires were pretested to the final research participants, the questionnaires were subject to a pre-test evaluation by a member of senior academic staff, and ethical approval from the Cardiff Business School Research Ethics Committee (see Appendix G) was collected.

A pilot study was conducted through Skype with two managers. From this, the importance of a bilingual approach was emphasised, to get a better understanding from the conversation. Therefore, the interview and survey protocol were adjusted to include hybrid terms, both in Bengali and English. The complete interview and survey protocol is given in Appendices A and C.

3.9.9 Conducting the survey.

Likewise, the interview respondent, the gatekeeper of the interview also acted as the gatekeeper for the survey respondents. The surveys were conducted simultaneously with semi-structured interviews. With every visit to that specific factory, the typical sequence has involved, i.e., conducting the interviews with top level of management at the start of the day, and conducting the survey at the end of the day and vice versa. As survey respondents have a direct influence on the garment worker's day-to-day operations, they are likely to be busier at pick hour (i.e., 10-3). As the interview has taken place earlier in the survey, and the top management already has some knowledge about the research topic, this gave the researcher a little bit of leeway in conducting the survey. For example, some top management helped to distribute the questionnaires among the survey respondents at the beginning of the working hour, and also help to collect the questionnaires at the end of the working hour. A follow-up for the survey was a little bit crucial as the types of respondents were going to be changed the next day. The below Table 3.13 listed the quality criteria that ensure the research rigor for survey (Lincoln and Guba 1985).

Criterion	Way of addressing
Respondent consent	• At the beginning of the questionnaire, the purpose, the selection of the participant and a declaration of consent were introduced.
Integrity	• Pre-approved protocols followed, ensuring no data breaches.
Respondent anonymity	• The gatekeeper was assured that the survey would not be completed online. • Envelopes were provided for paper copies of the survey so that responses could not be viewed by the gatekeeper.

Credibility	• Survey conducted over a period between 2019 and 2020 • Each sample has been personally entered by the author • Non-response bias was calculated by comparing the data from the first and last groups of respondents.
Understanding	• Initial findings cross-checked with supervisors. • An initial draft was presented at the academic conferences
Confirmability	• A rigorous coding procedure has been followed (please check Figures 5.4 and 5.7).
Fit	• Multiple levels of analysis were adopted to addressed research validity and reliability

Table 3.13: Quality criteria for evaluating research rigor i.e., survey.

3.9.10 Quantitative data analysis

Data analysis is conducted in four stages: demographic profile, data preparation (i.e., missing data, assessment of outliers, assessment of normality, assessment of common method variance, social desirability bias) measurement model validation, and structural model evaluation (Hair et al., 2010). For this research, Statistical software such as Statistical Package for Social Sciences (SPSS) 27 and PROCESS Procedure for SPSS Version 4.0 was used to measure statistical analysis of the data. Detail of the application of the survey method, sample size requirement, demographic profile, organizational profile and associate data analysis technique, and findings was present in Chapter 5.

To answer Research Question 4 and to cross-match with the themes identified from the qualitative analysis (see Chapter 4), a rigorous quantitative data analysis took place (Chapter 5). In particular, the conceptual framework was analysed with the PROCESS Macro analytical tool, which was framed around two basic sections (i.e., evaluating the variables and assessing the hypothesised relationship). For the evaluation of variables, a series of analyses observed: construct reliability, inter-variable correlation analysis, exploratory factor analysis, internal consistency via validity, variance inflation factor for multicollinearity test, estimation of structural model and estimation of measurement model. Subsequently, a path analysis was used to

examine the structural relationships between the composite variables. Henceforth, to assess the hypothesised relationship, with the use of PROCESS Macro the mediation relationships between stakeholder decisions and firm performance were measured where employee engagement acted as a mediator. Particularly, the mediation analysis highlighted - the 'which' way employee engagement could mediate the relationship between stakeholder decision and firm performance.

To observe the relationships, both model 6 and model 8 of PROCESS MACRO have been used that showed that the mediator (employee engagement) also moderates the direct effects (stakeholder decision on firm performance via SSCM practices). The difference between Model 6 and Model 8 is that the mediator is moderating the direct relationship between dependent and independent variables. In particular, while mediation analysis focuses on how a causal effect operates, moderation analysis is used to address, when or under what circumstances, that effects exist or do not exist and in what magnitude (Hayes and Rockwood, 2017). As Hayes (2015) suggested, the successful answering such questions for moderated mediation analysis are as- 'Under what circumstances does X affect Y? Or how does X affect Y?'' This argument goes with the fourth research question of this study's, - how Employee Engagement enables the SSCM practices?

3.9.11 Nature of the identified stakeholders

As described earlier, this research study reported a broader category of lower-level employees of the Bangladeshi garment industry, who are particularly involved with the garment worker's day-to-day shop floor operations. As Walker et al (2008) described, the sustainability practices of a typical firm are mostly bound by the job responsibility of stakeholders, this viewpoint is also line with the very case of the Bangladeshi garment industry. To identify a deeper understanding of shop floor sustainability practices, understanding the lower-level employee's job responsibility is a must-do. The below (Table 3.14) is an example of illustrative statistics and the reference code of the survey.

Identification number	Job title	Respondent Code	Department
L1	Line manager	PF16	Cutting
Q1	Quality controller/ inspector	PF8	Knitting
M1	Manager's assistant	MF15	Dying
S1	Supervisor	MG9	Sewing
Ss1	Supervisor subordinate	MF10	Finishing

Table 3.14: Example of survey respondent's illustrative statistics and reference code.

Furthermore, Table 3.15 presented an overview of the survey participants, along with a clarification, of their job position within the factory management chain and the number of total survey respondents. As described earlier, the clarification of employee job responsibilities is also significant to some extent, as several researchers highlighted employees as an important inbound stakeholder (see Table 2.6, Chapter 2) and their operational responsibility is related to the institutional perspectives of the garment shop floor (Huq et al., 2020; Giunipero et al., 2012). Moreover, more detail about the demographic profile and organization profile, associate data analysis technique, and findings was presented in Chapter 5.

Job Position	Clarifications	Number of participants
Line manager	Personnel who ensure that production lines are properly balanced for target output.	15
Quality controller/ inspector	Personnel who coordinate with the quality manager so that defective or faulty goods are not produced.	25
Manager's assistant	Personnel who are in charge of supervising line managers (i.e., specific sections), monitoring inventory and creating visual displays for buyers.	12

Supervisor	Personnel who are directly related to the coordination of manufactured products (i.e., fabrics, accessories, packaging, storing). He also established work methods to meet deadlines with other sections.	51
Supervisor subordinate	Personnel who what under the command of sections' supervisors and responsible for individual lines i.e., handling materials for fabric selections.	17
Technician	Personnel who typically work with the selection of suitable fabrics, i.e., organic fabrics and oversee fabric testing and sample fittings.	5
Compliance officer/welfare officer	Personnel who assist in implementing and maintaining the factory's policies and regulations in compliance with all applicable employment laws and regulations.	5
Floor manager	Personnel who have responsibility for the day-to-day management of a specific department's floor i.e., sewing, packaging etc.	11
Compliance subordinate	Personnel who work under the compliance officer particularly help to monitor the floor to check all kinds of compliance issues and motivate workers to maintain personal safety.	14
Store In-Charge	Personnel who maintain all finished products of a specific floor (i.e., sewing floor, cutting floor) are stored accurately and also maintain the distribution for the next floor (i.e., packing floor).	5
Computer operator/ office assistant	Personnel who record day-to-day operations of an individual line of a single floor (i.e., sewing), and also report to the supervisor.	7

Table 3.15: Overview of the survey participants.

3.10 Summary of the Chapter

This chapter provides background information on the various research paradigms available for conducting social science research, as well as associate research design. This chapter justified the choice of convergent mixed methods as well as the philosophical position of the conducted research. Clarification of choosing semi-structured interviews and survey methods is also provided to indicate that it is the right choice for this research. Validation of data analysis is also provided, specifically the need for thematic analysis for qualitative research and statistical analysis for quantitative research, in line with addressing the research questions developed in Chapter 1. This chapter also provided cues for the next chapters, i.e., Chapter 4 - thematic analysis for qualitative research and Chapter 5 – survey analysis (i.e., mediation and moderated mediation techniques) for quantitative research. Finally, ethical considerations were also described.

CHAPTER 4

Qualitative analysis

4.1 Overview

Having developed a preliminary understanding of the Bangladeshi garment industry from literature and conveyed the primary data collection process, this is high time for deeper understanding and identifying what actual participation arrived. The main research goals behind this circle of enquiry were centered around the identification of inbound stakeholders (RQ1), stakeholders' forces related to SSCM practices (RQ3a) and performances (RQ3b) are the focal point of this Chapter. In order to achieve these research goal, it seems that a number of queries, such as- the narrative of stakeholders' types, the operating sustainable practices, and if there are any inconsistencies/conflicting practices need to be identified as well. This is how the deep digging began, and this chapter presents the qualitative analysis and associate findings from this study.

To begin with, an overview of the theoretical foundations was given to set the scene, and then the second phase revisits the way of qualitative data collection methods (i.e., semi-structured interview). Gradually, the qualitative findings related to the cycle of inquiry were presented. In particular, more specific queries related to the research questions such as RQ1, RQ2, RQ3a and RQ3b are articulated at the end. The key themes and subthemes related to sustainability forces that emerge from the interview data are described hence. Thus, the overreaching objectives of this chapter are as follows:

- Literature foundations: Scholarly views of sustainable practices and stakeholders' performance
- Managing sustainable relationship in SSCM: Stakeholders' sustainable performance in line with sustainable forces of the Bangladeshi garment industry
- Way forward: Exploring existing sustainable forces from contextual literature.
- Application of methods: a brief overview of semi-structured interviews with a highlight of research quality evaluation.
- Findings: Analysing the thematic code and identifying existing forces related to the internal and external surroundings of the factory (i.e., supporting, hindering).
- Discussion: A brief discussion of the nature of the stakeholders in the office and the available conflicting forces resented.

Table 4.1: Subsequent objectives of Chapter 4.

4.2 Background

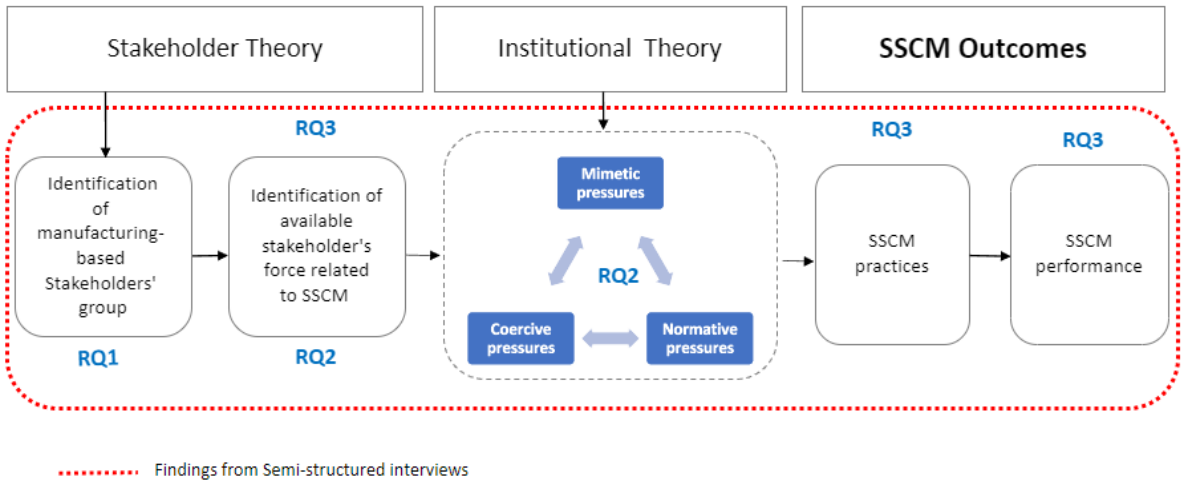
Recent years have seen significant research interest in the implementation of SSCM in the garment industry, especially in developing countries with challenging institutional contexts (Nath et al., 2019; Huq and Stevenson, 2020). SSCM has become an essential theme for the garment industry, due to the increased sensitivity of the industry to environmental protection and social responsibility (Lu et al., 2020; Kannan, 2018). The goal of sustainability not only supports firms in achieving economic viability, but also in retaining a competitive advantage. Although achieving a successful sustainable SCM strategy requires a firm to consider the views of multiple stakeholders (Govindan et al., 2013; Dahlmann et al., 2008), much of the existing literature on the garment industry in developing countries focuses on one specific stakeholder group.

Stakeholder theorists such as Strurer et al. (2005), Halter and de Aeeuda (2009), and Matos and Silvestre (2013) explain 'why' firms face extra pressure to become sustainable over time and 'how' effective management of stakeholder relationships becomes a key component for implementing sustainability practices in business. Researchers also argue that organisations might achieve good value for their multiple stakeholders to help successfully implement sustainable practices (Huq et al., 2016;

Stubbs and Cocklin, 2008). On the contrary, ineffective management of stakeholder relationships and abortive sustainability practices might lead to serious negative impacts on the bottom line, which, in turn, cause reputational damage for the focal firm (Epstein, 2008). More specifically in SSCM, previous literature has identified diversified stakeholder groups to describe the relationships between distinctive pressures and the subsequent implications for supply chain performance (Matos et al., 2013; Rebs et al., 2019).

However, the specific characteristics of the Bangladeshi garment stakeholders and the early findings of the literature suggested that the identification of a diversified stakeholder group and their sustainability practices was a possible way to identify the available forces of SSCM. This somewhat diversity of the SC stakeholder group could help to further indicate the improvement of the SSCM themes, as well as the institutional aspects of SSCM practices. For example, 'What is the most/least considerable factor in stakeholder's decision making while thinking about sustainability'? Or 'What is the most dominant factor in ensuring sustainable practices?' However, these questions might be answered precisely if a clear understanding about interviewed participants job responsibility is acknowledged and how their decision-making power can improve sustainability practices. Therefore, the following enquiry cycle has been developed around the discussion of sustainable practices and the relationship with management decisions and the performance of stakeholders. In continuation of Figure 2.1, the basic theoretical framework is the qualitative analysis of this thesis, precisely the identification of stakeholder group, and the integration of SSCM practices into garment SSCM performance is shown in Figure 4.1.

Figure 4.1: Theoretical framework for semi-structured interviews.



4.3 Literature foundations

In this section, a brief overview of sustainable practices and stakeholder performances is presented. Both streams of literature help to identify the further sub-research queries and the identified questions are presented in **Chapter 1**. In particular, sustainable practices are discussed more deeply, in order to get the impression of sustainable forces as well as performance related to the manufacturing company like a garment factory.

4.3.1 Managing sustainable practices.

Sustainable practices are the implementation of sustainability matters that not only enhance the internal achievement of sustainable development goals but also empower outside performance (Nguyen et al., 2020). Practices are often operationalised as the triple bottom line, with business success measured in three spheres: environmental, economic, and social. Economic sustainability captures the organisation's commercial value, environmental sustainability measures how the firm's physical resources are deployed to influence environmental strength, and social responsibility encompasses

the wellbeing of people in the supply chain as well as in society (Huq et al., 2021; Marshall et al., 2014). However, a sustainable business requires the implementation of all three, which sometimes seems quite hard to find. For example, Body Shop, a cosmetics manufacturer that trades on its environmental credentials, but is simultaneously criticised for social offences (Purkayastha and Fernando, 2017) and clothing companies such as Nike, Gap, and H&M that have long faced allegations of poor worker conditions (Distellorst et al., 2017). The Clean Clothes Campaign (2009) binds them to follow a specific 'code of conduct' that is supplemented by regular audits of the social and environmental performance of their stakeholders (Ablander et al., 2016). Consequently, modern business recognised the importance of managing sustainable practices even better, in the present scenario (Hasan et al., 2018).

4.3.2 Sustainable practices and stakeholder forces.

However, previous research on sustainable practices has placed a strong emphasis on the sustainable activities of the stakeholders of individual firms and the initiatives of their SC partners (Gold, Seuring and Beske, 2010). Collaboration with stakeholders has been established as a sustainable practices related to better organisational performance (Pagell and Wu, 2009). Different types of sustainable practice, such as environmental awareness, social sustainability, and economic viability, require stakeholders to work together and exert force on each other (Youn et al., 2013). For example, time sensitivity when making deliveries and cost sensitivity between suppliers require strong cooperation and expanded transparency across all SC partners (Anner et al., 2013). Furthermore, compliance practices and government legislation have been considered a path to follow to achieve sustainable performance (Huq et al., 2020; Nath et al., 2020; Hoque et al., 2020). However, compliance is often negatively perceived as associated with coercive forces towards stakeholder management (Boyd et al., 2007). Furthermore, for the garment supply chain, manufacturing countries like Bangladesh are often scrutinised for ethical procurement practices (Huq and Stevenson, 2020) and especially for environmental and social aspects (Zorzini et al., 2015). Social issues such as the health, safety and well-being of workers, the human rights of employees, and the welfare of communities have been identified as critical and directly affecting the sustainable performance of a firm (Nath

et al., 2020; Huq et al., 2014). Environmental practices including reducing carbon emissions, tree plantation, noise reduction, and the use of renewable resources in operations remain vital (Steurer et al., 2005). However, most garment SSCM studies have focused on how retail buyers affect the implementation of sustainable practices and standards (Huq and Stevenson, 2020; Ehrgott et al., 2011), although sustainable perceptions of other stakeholders have played a role in organisational sustainable practices (Huq et al., 2020). Thus, these practices are included in this study, as previous research suggests that the characteristics of specific groups impact the willingness of the focal company to adopt sustainable practices (Kassinis and Vafeas, 2006).

Generally, firms consider diversified factors in their operational activities that help to run sustainable practices. These factors could be recognised as sustainable enablers (Walker & Jones, 2012) or sustainable motivators (Sajjad et al., 2015). In this research, these sustainable factors are replicated as sustainable forces. To clarify the implication of these types of forces, a distinguishing is also observed, like internal forces and external forces, which Walker et al. (2008), identified as internal drivers and external drivers (Walker & Jones, 2012). These forces can be considered internal or external and this study will now examine each of these in turn.

4.4 Contextual Literature

4.4.1 Internal forces practiced by Bangladeshi Stakeholders.

Previous contextual researchers identified a variety of internal forces that can contribute to the implementation of sustainable practices. These are summarised in Table 4.2. Specifically, While considering the sustainability practices in garment premises, a common starting point is ‘compliance’ which has been recognized by multiple researchers. For example, MacCarthy and Jayarathne (2012) considered compliance culture as a sustainability practice, comparing two garment retailers and identifying that the supermarket retailer showed a minimum engagement in

compliance while the leading brand provided a higher level of proactive engagement to avoid public scrutiny. Similarly, Nath et al. (2019) provided a broader framework of 46 owner-managers' viewpoints, with compliance initiatives, efficiency, and competency as significant factors within the factory premises. In the same way, Huq and Stevenson (2020) provided a summary of the cases of seven developing countries, listing compliance as an institutional pressure for sustainability practices.

Internal stakeholder forces	Forces definition	Examples of research in the Bangladeshi garment industry	Other references
Compliance	On-site verification activity including environmental and social inspection, to ensure factory compliance, as well as evaluation of third-party suppliers.	Huq and Stevenson, 2020; Nath et al., 2019; Hoque et al., 2020	MacCarthy and Jayarathne, 2012
Ethical sourcing	Supplier evaluation includes inspections of products at each point in the supply chain of a business for ethical business practices.	Nath et al., 2021; Huq and Stevenson, 2020	Blowfield, 2000
Health & safety standards	Regulations and procedures intended to prevent accidents or injury in the workplace.	Sarkar et al., 2020; Huq et al., 2014; 2021	Zorzini et al., 2015
Employee well-being	The state of mental and physical health of employees results from dynamics within and sometimes outside the workplace.	Phan et al., 2020; Sajjad et al., 2015	Rahman et al., 2016

Firm's resources	The capability of an individual firm to accept innovation and developments for maintaining sustainable practices.	Sajjad et al., 2015; Diabat et al., 2014	Steurer et al., 2008
Lean manage ment	A continuous improvement process in work and people management, primarily reducing production times as well as response times from suppliers and customers.	Hoque et al. 2020; Fouji et al., 2021	Nabelsi and Gagnon, 2016
Auditing	A list of criteria that clarifies several steps of garment production, like material selection, process techniques, packaging, etc.	Hoque et al., 2020 Chowdhury et al., 2020	Rahman and Haque, 2016
Techno logical advance ment	The use of new technologies or automation to become more accurate and efficient, which also enhances capability in the production process	Goworek et al., 2012; Nath et al., 2019	Carter and Rogers, 2008

Table 4.2: Internal stakeholder forces in the Bangladeshi garment industry.

Looking at internal forces in a wider sense, ethical sourcing is often considered an invisible side of sustainability implementation. For example, Nath et al. (2021) provide evidence of 33 multi-tier suppliers and showed how ethical sourcing allowed the management of both social and environmental aspects from the upstream side of the supply network, and could improve economic and environmental performance. **Health and safety standards** in factory premises, **training & development,** and good working conditions are also reported as vital elements for social sustainability (Nath et al., 2021; Kumar et al., 2020). Sarkar et al. (2020) also supported this view with empirical evidence and contextualised **health and safety standards** as a green-orientated business strategy (Phan et al., 2020). Furthermore, empirical evidence of these forces also includes cost concerns (Oelze et al., 2017), top management concerns (Rafi-UL-Shan et al., 2018) and reputation management (Rahman et al., 2016).

Moreover, lean management as a concept has emerged with the development of a shorter fashion life cycle, as a way of coping up with the competitive market conditions (Hoque et al., 2020). This is driven by changes in buyer expectations (Alvarez et al., 2010), brand reputation while ensuring compliance (Oelze, 2017), and requiring the shortest possible lead time (Habib et al., 2020). These forces are often shaped by the firm's resources (Diabat et al., 2014) and the ability to meet buyer expectations by improving productivity. Technological advancement is also being deployed by manufacturing firms (Goworek et al., 2012). Nath et al. (2019) described technological advancement as a 'single entity' that could enhance the production process and force manufacturers to adopt new operational strategies to meet the current competitive demand for fast fashion. Mention should also be made of the importance of auditing (Hoque et al., 2020) while debating the pressures on manufacturers while keeping up with the demand of retailers. Both Chowdhury et al. (2020) and Rahman and Haque (2016) highlight the co-evaluation of manufacturers' procurement strategies and supplier selections while advocating the importance of auditing in sustainability practices.

4.4.2 External forces practiced by Bangladeshi Stakeholders.

Turning to external forces, previous contextual researchers also listed a variety of forces, these are summarised in Table 4.3. Looking at the SSCM practices of garment manufacturers more widely, the researchers showed that holistic consideration within a specific country is quite common. For example, both Sajjad et al. (2015) and Yadlapalli et al. (2018) draw attention to government legislation as a significant factor that propels the manufacturer to embrace SSCM. Yadlapalli et al. (2018) also explore how collaboration can support the implementation of sustainability practices. This is supported by Phan et al. (2020), who highlight the importance of collaboration between stakeholders with social performance determined by facilities in the workplace and the wider community, and financial performance measured by organisation profitability and growth.

External stakeholder forces	Forces definition	Examples of Bangladeshi garment industry research	Other references
Governmental legislation	Mandates are related to sustainable practices enforced by governmental authorities.	Yadlapalli et al., 2018	Sajjad et al., 2015
Codes of conduct	A set of rules outlining the responsibility or practices of a business organisation.	Rahman and Haque, 2016	Samanta et al., 2017
Training and development	The action of teaching a person a particular skill to ensure growth and progress.	Habib et al., 2020.	Rahman and Haque, 2016
Collaboration	The way in which two or more supply chain partners work together to achieve a static goal.	Kumar et al., 2020; Phan et al., 2020; Yadlapalli et al., 2018	Pagell and Wu, 2009
Knowledge sharing	The exchange of expertise between supply chain partners and its benefits includes retaining intellectual assets and improving productivity.	Phan et al., 2020	Cheng, Yeh, and Tu, 2008
Social responsibility	A state of knowledge and understanding that something is happening or exists in the supply chain that might interfere with sustainability practices.	Huq et al., 2016; Chowdhary et al., 2020	Youn et al., 2013
Environmental assessment	The evaluation of the environmental consequences of a programme or	Nath et al., 2021; Chowdhary et al., 2020	Steurer et al., 2005

	actual project before the decision to proceed with the proposed action.		
Third-party audit	Confirmatory assessment activities were performed by a third-party organisation and provided the regulatory object and the business interests in that object.	Huq and Stevenson, 2020; Yadlapalli et al., 2018	Ehrgott et al., 2011
Stakeholder perceptions and engagement	Stakeholder's involvement in the identification, analysis, planning and implementation of sustainable activities to achieve a certain outcome.	Phan et al., 2020	Kannan, 2018

Table 4.3: External stakeholders forces in the Bangladeshi garment industry.

Focusing on the operational performance, Rahman and Haque (2016) propose a concept of degradation of fabric wastage which supports a comprehensive view of the garment industry's environmental assessment within which the sustainability requirements operate. A key feature of their investigation is the inspection of code of conduct between environmental and social responsibility. The code of conducts will typically encompass a range of operations, and therefore an interruption in one of these may have impacts elsewhere. As an example, Habib et al. (2020) highlights the co-evaluation of factory training and development programs with the supplier as a form of knowledge exchange that improved sustainability performance.

Significant research has been conducted focused on third-party audits. There are many different actors who constantly interact with firms around sustainability requirements, including retailers, customers, NGOs, unions, government, and other SC actors (Kannan, 2018). Therefore, it becomes essential to recognise stakeholder perceptions and engagement (Phan et al., 2020; Huq et al., 2016). This is particularly important for social responsibility and economic performance, which connects different practices together (Pagell and Wu, 2009).

4.5 Application of methods: semi-structure interview

4.5.1 Research Design

As this research sets out to capture the current stakeholder forces which predominantly influence the sustainability implementation of the Bangladeshi garment industry, an inductive approach was adopted for this study. Data collection took place in the major garment manufacturing regions in Bangladesh - Dhaka City, Gazipur, Narayanganj, Ashulia and Mymensingh –from late November 2019 to February 2020. Qualitative data were collected in the form of face-to-face in-depth semi-structured interviews with various garment and textile stakeholders, particularly employees from garment manufacturing companies. For data analysis, thematic analysis (Braun and Clarke, 2006) was used since it offers flexibility to analyze detailed accounts of textual data using a step-by-step framework.

4.5.2 Interview Protocol and pilot study

Background information regarding SSCM, and the Bangladeshi garment industry was collected in multiple ways including a literature review, connecting with stakeholders, and informal discussions. A semi-structured interview protocol was developed, to allow for both focus and flexibility and ensure that interviewees had freedom to develop their answers. A pilot study was conducted through Skype with two managers. From this, the importance of a bilingual approach was emphasized, to get a better understanding of the conversation. Therefore, the interview protocol was adjusted to include terms in Bengali. Questions were constructed around sustainability, sustainable practices, SSCM, and sustainable performance. The full interview protocol is given in Appendix A.

4.5.3 Selection of interview participants

Participants in this study were purposively selected (Patton, 2015) based on several criteria recommended by Soundararajan and Brown (2016). First, the level of involvement and relevance to the research context was important. The main focus was garment and textile manufacturers in Bangladesh, although Bangladesh Garment Manufactures and Exporters Association (BGMEA) officials and Bangladeshi academic experts were also included. Second, it was important for the participants to have a level of awareness related to various aspects of sustainable practices. For manufacturing firms, there was a focus on those who followed legislative rules like Leadership in Energy and Environmental Design (LEED) for infrastructure, ACCORD, and Alliance regulations for compliance, along with their SCs partners. A third consideration was practical accessibility, given the potential for geographical dispersion of participants. Finally, participants needed to be willing to participate in the research process voluntarily.

During interviewing, a snowball sampling technique suggested by Miles, Huberman, and Saldana (1994) was used to gain access to additional potential participants through referrals. The first points of access were BGMEA officials and a LEED-certified garment manufacturer, through email. These initial participants referred the researchers to other potential interview subjects with whom they had a personal or professional connection. Subsequently, 35 interviews were conducted across a variety of different manufacturing activities, such as yarn production, weaving, knitting, compliance, logistics and quality control, as well as supporting activities such as facility maintenance. Each interview lasted between 25 and 70 minutes, with the interviewer taking an audio recording and written notes. The interview process ended when the responses became repetitive and reached theoretical saturation (Soundararajan and Brown, 2016). Detailed information about the interview participants, along with the categorisation, was given in Table 4.4.

Serial	Mnemonic (Participants' reference)	Job Title/Position	Experience (years)	Firm type	Stakeholder group
1	EN1	Designer	5+	Merchandising company	Enabler
2	PF1-TM	Manager, HR & compliance section	10+	Garment manufacturer	Top-level management
3	PF2-TM	Chief operating officer	1+	Garment manufacturer	Top-level management
4	PF3-TM	General manager production	10+	Garment manufacturer	Top-level management
5	PF4-BM	Assistant compliance manager	5+	Garment manufacturer	Lower-level management
6	PF5-BM	Assistant merchandising manager	1+	Garment manufacturer	Lower-level management
7	PF6-BM	Store supervisor	10+	Garment manufacturer	Lower-level management
8	MD- O	Owner and head of logistics	20+	Garment manufacturer	Proprietor
9	MD-TM	Executive, logistics department	5+	Garment manufacturer	Top-level management
10	BD- O	Owner	20+	Garment manufacturer	Proprietor
11	BD1-TM	Senior Manager HR Compliance	1+	Garment manufacturer	Top-level management
12	BD2-TM	General Manager of Quality	5+	Garment manufacturer	Top-level management

13	BD3-BM	Assistant of senior manager, Merchandising	5+	Garment manufacturer	Lower-level management
14	BD4-BM	Assistant Manager, Administration	10+	Garment manufacturer	Lower-level management
15	DBL1-TM	Chief Operating Officer	5+	Textile & garment manufacturer	Top-level management
16	ET1-TM	Head of Production	10+	Textile manufacturer	Textile provider
17	ET2-TM	General Manager of Operation	3+	Textile manufacturer	Textile provider
18	FT1-TM	Assistant of operation manager	5+	Garment manufacturer	Lower-level management
19	FT2-BM	Assistant general manager (Yarn Production and Dying)	Less than 1	Garment manufacturer	Lower-level management
20	FT3-TM	General manager (Seamless Operation)	10+	Garment manufacturer	Top-level management
21	EN2	Assistant professor	1+	Academician	Influencer
22	MF-O	Owner and administration head	20+	Garment manufacturer	Proprietor
23	MF1-TM	Deputy general manager	5+	Garment manufacturer	Top level management
24	MF2-BM	Factory in-charge	10+	Garment manufacturer	Lower-level management

25	MF3- BM	Store manager	1+	Garment manufacturer	Top level management
26	MF4-TM	Head of the supply chain department	5+	Garment manufacturer	Proprietor
27	LS- O	Director of the company.	20+	Garment manufacturer	Proprietor
28	LS1-TM	Head of the operation	5+	Garment manufacturer	Top level management
29	LS2-TM	Senior General manager, merchandising section	15+	Garment manufacturer	Top level management
30	LS3-TM	Executive officer, compliance	5+	Garment manufacturer	Top level management
31	LS4-BM	In-charge, compliance	10+	Garment manufacturer	Lower-level management
32	MG1-TM	Manager, merchandising department	1+	Garment manufacturer	Top level management
33	MG2-TM	Deputy manager, packaging	10+	Garment manufacturer	Top level management
34	MG3-BM	Section in charge, store & packaging	5+	Garment manufacturer	Lower-level management
35	MG4-BM	Line manager, compliance	1+	Garment manufacturer	Lower-level management
36	MG5-TM	Section head, compliance	5+	Garment manufacturer	Top level management
37	EN3	Vice president	1+	Legislative body	Influencer

Table 4.4: Detail information about the interview participants.

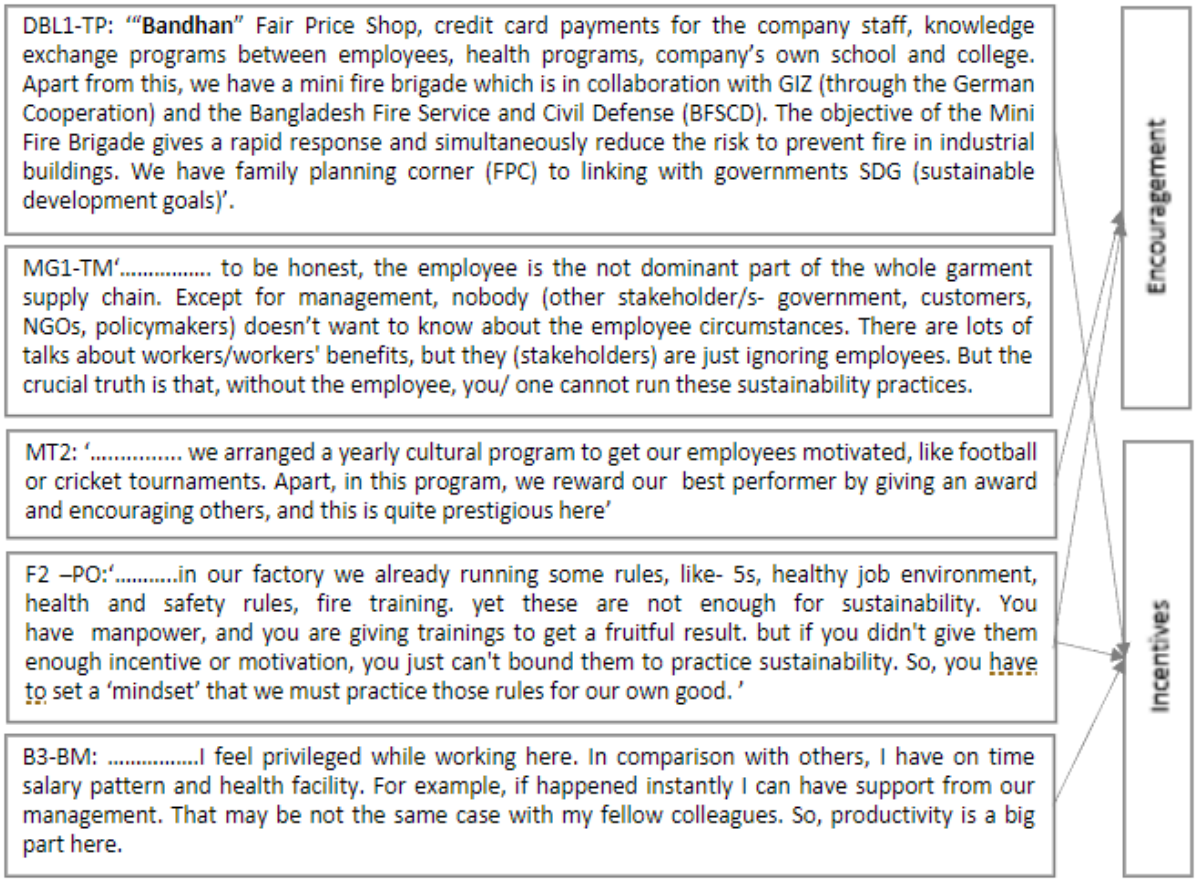
4.5.4 Unit of analysis

This study followed a step-by-step thematic analysis process similar to that suggested by Braun and Clarke (2006), Creswell (2014) and Miles, Huberman, and Saldana (2014). The thematic analysis allows the researchers to identify themes relevant to the research questions (Joffe and Yardley, 2004); and also allows quasi-quantification (i.e., how many participants mentioned a specific theme) to be combined with the meaning of the particular context (Braun and Clarke, 2006).

The unit of analysis followed each stakeholder as an individual opinion generator, e.g. at the individual level rather than at the firm level. Ultimately, these will influence the collaborative knowledge of lower-level management as well as top-level management disseminated throughout the hierarchy of the stakeholder group. It will also reflect the identification of RQ1 (i.e. who are the inbound stakeholders in the Bangladeshi garment industry?) and RQ2 (i.e. how do these stakeholders exert institutional pressure to implement SSCM performance?).

Initially, the audio clips were transcribed and cross-checked with the written notes and within the research team to check continuity and reliability. The transcription file was then coded using open coding, with codes developed and modified as the coding process progressed. Figure 4.2 provides an illustration of the coding process. For instance, the quote by F2-PO was coded as ‘incentives’ and ‘encouragement’.

Figure 4.2: Illustration of coding process (i.e., employees' involvement in SSCM).



Abductive reasoning was followed throughout the coding process: first, the initial coding within the first set of two interviews from different factories was cross-checked by the research team to identify any recurring initial codes and their relationship to the research questions. A manual post-it note code chart was created and, following this stage, the remaining interviews were coded. Having done the coding, then clustering them into themes has been taken place.

Nevertheless, some of the sub-themes, such as lower level of inbound stakeholders, came from the literature and some did not and were essentially derived from the data, such as social recognition. Gradually, all the sub-themes were then further consolidated into broader themes, such as supporting or hindering forces, to support the content of the study. It is worth noting that the data analysis developed by moving back and forth between the literature and the empirical data. In the end, all themes were grouped as either internal or external forces.

The final stage involved reviewing the codes based on the research questions and consolidating them into first-order and second-order themes. Quotes from participants were highlighted as evidence to identify relationships between stakeholder practices and sustainable decision-making power authority. These thematic findings were also compared to the garment SSCM literature to identify new insights distinct from existing knowledge.

4.5.5 Research quality evaluation.

As Strauss and Corbin (1990) stated, ‘the rigour and trustworthiness of a research outcomes stem from the strict implementation of procedures.’ This study follows the criteria drawn from interpretive research to ensure trustworthiness and rigor (Stubbs and Cocklin, 2008), as outlined in Table 4.5.

Criterions	Way of addressing
Credibility	• Interviews carried out over a period between 2019 and 2020. • Across all interviews, the average duration is 47.5 minutes. • The author personally visited each and every sample personally. • The first set of transcriptions was cross-checked with supervisors. • Appropriate amendment was made while necessary.
Transferability	• Coded file was checked and compared with transcription and coded files, through highlighting the spreadsheets.
Dependability	• The participants provided numerous examples to support their opinions. • For consistency, the explanations of the coded file were cross-matched across factories by the authors.
Integrity	• A rigorous coding protocol was followed. • Initial coding was performed manually using a colour-coded board to guide the evaluation. • The first set of interpretations was cross-checked with the supervisors. • The consent form was signed by all participants.
Validity	• The first findings were cross-checked with the supervisors. • The first findings were presented to pilot participants who confirmed rationality. • An initial draft was presented at the academic conference.

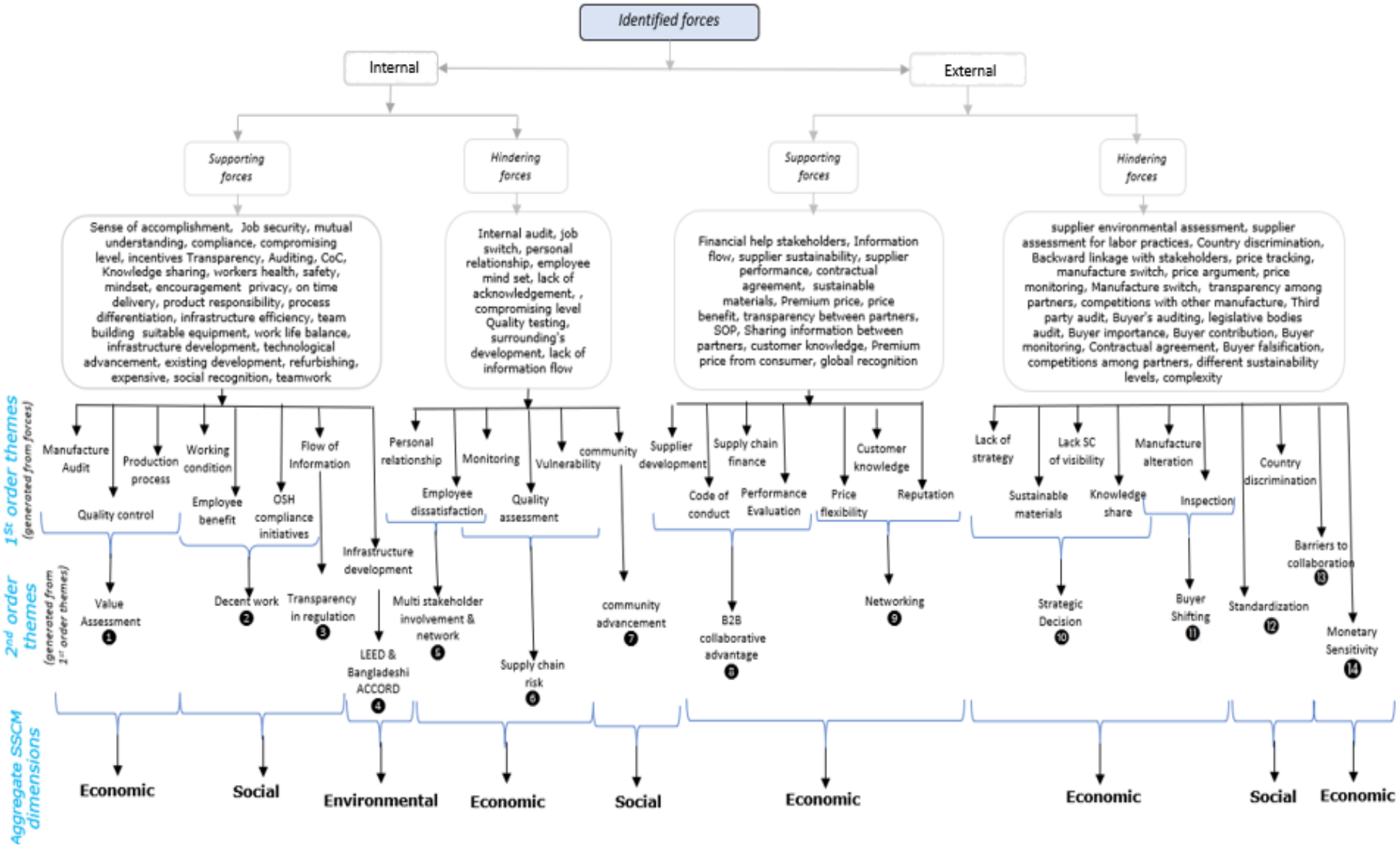
Table 4.5: Criteria for evaluating trustworthiness and rigor i.e., interview (adapted from Lincoln and Guba, 1985; Strauss and Corbin, 1990; Stubbs and Cocklin,2008).

4.6 Findings

To provide clarity in the findings, the central concept: internal and external stakeholder practices was highlighted throughout the process. Therefore, a categorisation between the forces was identified as supporting forces (i.e., encouraging sustainability practices) and hindering forces (i.e., creating obstacles for sustainability practices). All

emerging codes are illustrated as related to the practices of stakeholders of the Bangladeshi garment industry. In addition, the reported forces have been structured by first-order and second-order themes. In particular, the findings have also revealed some emerging forces that could influence sustainable practices in the Bangladeshi garment industry. There are some forces that could also create conflicts between environmental, economic, and social sustainability goals. An overall narrative of raw thematic coding; and the sample illustrative quotes were presented in Figure 4.3 and in Table 4.6.

Figure 4.3: Initial thematic coding.



- Chronology of identified forces.

First-order themes	Illustrative quotes from respondents	Second-order Themes
Internal Supporting Forces		
Manufactures audit (11 participants)	I think, ours' [manufacturers'] auditing team greatly shaped our supplier selection procedures…. although it is kind of forced by the buyers or else …. compliance wouldn't have happened (MG4-BM).	Value Assessment (19 participants)
Product responsibility (5 participants)	'We need to maintain our product quality to keep our buyers, like an exact match with the code of conduct……'(BD2-TM).	
Use of organic material (7 participants)	'To become more sustainable, particularly from material perspectives. We can offer to the buyer that we have organic material options in production' (LS1-TM).	
Supplier selection (9 participants)	'While we select our partners (manufacturer, supplier, wholesaler, retailer) we need to follow the orders [from the buyer], like- from whom we can collect our materials and whom not' (FT2-TM).	
Working conditions (7 participants)	The garment sector is changing continuously. If you ask, a couple of years ago, there was an abundance of workers, but now the scenario is quite the opposite. The compliance is not only for the buyers now, but workers also checked in between the factories about the working condition, salaries, and other benefits (LS4-BM).	Decent Work (16 participants)
Employee benefit (8 participants)	'We have our own fair price shop, credit card payment systems, knowledge exchange programs between workers and monthly health and safety training…Apart, we have company owned school for	

	our children. And these motivate us to stay focused. (FT3-TM).	
Compliance initiatives (16 participants)	'…All types of rules, like ACCORD or ALLIANCE… to maintain workers' safety and benefit, …… This is not only applied to the legislative issue now, the competition among factories is also quite severe now. Everyone tries to improve their [standards] to attract skilled employees and as well as buyers [retailers] (LS1-TM).	
LEED regulation (5 participants)	'……. It takes lots of investment to renovate the old building as well as employ technological advancement to apply for the LEED certification…….'(MD-O).	
Building new infrastructure (8 participants)	'It takes lots of investment to renovate the existing building…….' (DBL1-TM).	Organizational structure (15 participants)
Latest automation (4 participants)	……as well as employ automation to apply for the governmental certification…….'.(DBL1-TM).	
Infrastructure efficiency (10 participants)	'Particularly, we have washing and dyeing facilities and in every three months, we need clearance from regulatory bodies….' (ET2- TM).	
Bangladeshi ACCORD and alliance (5 participants)	'…certifications, like Bangladeshi ACCORD and Alliance are setting some standards to maintain social compliance (EN1).	
Lean management (7 participants)	we need a supply chain head in our factory who can embed the structure. Like-we have the grey section, yarn section, dying section and accessories section. in order to get better performance, we have to	

	maintain a lean performance among them (LS4-BM).	Information flow (13 participants)
Knowledge sharing (8 participants)	we are quite strict when you talk about information sharing, like- we normally do not share our R&D section with others (BD2-TM).	
Process transparency (6 participants)	……if we have coordination with our retailers …... we can adjust, reschedule our requirements quickly and be prepared for ……...occasional changes'(PF5-BM).	
Community well-being (6 participants)	'As you know, I'm not a local here [Gazipur - factory situated]. I came here for a job, and there are hundreds like me. They [top management] created houses and schools for our living. These ultimately enhance the community structures (BD3-BM).	Community advancement (6 participants)
Social welfare (2 participants)	'Our motive is not only sustaining our factory's environment but also maintain[ing] the surrounding locality's sustainability. Say, the local tea stall opened at 8 o'clock cause…. our factory's gate opened at that time. A major part of that shop's customers is our hundreds of employees, who work with us (PF2-TM).	
Hindering forces (internal)		
Stakeholder perception (19 participants)	'World Bank provides loans with low-interest rates; we have tax exemptions from government. Basically, it depends on the higher stakeholder like- what they think about us while adapting sustainability activities' (MF-O).	

Sustainability requirements (9 participants)	'it's a chain of supply and while we select our partners (manufacturer, supplier, wholesaler, retailer) we need to follow sustainable development requirements which ultimately helps us to sustain in future' (DBL1-TM).	Internal stakeholder involvement (21 participants)
New/Reinvestment (6 participants)	'Our cost of living is getting higher day by day while the profit level is really becoming narrow. At this point, new investment for being sustainable (especially for compliance) is really crucial for the garment investors' (LS-O).	
Return on investment (value of sustainability practices) (4 participants)	'If we can't measure the profitability form sustainability activities or can't have any visibility…. we may be then, will not be enthusiastic to practice it further' (BD4-BM).	
Third-party involvement (6 participants)	The inspection is typically regulated by a third party [a businessperson or company who works on behalf of the retailer] (ET2-TM).	
Trust (4 participants)	'We have a strong reputation in the field [export garment market] and most of our current buyers have been doing business [outsourcing] with us for a long time. They have faith in us and are happy with our current compliance assessment.' (LS-O).	
Mock compliance (5 participants)	'Our main strength is our two green factories……. sometimes to keep up with the order, we might have outsourced some materials which may not follow sustainability requirement properly' (MF1-TM).	
Personal relationship in	We need to update our clearance certificate [ETP] every couple of months, the auditor might have not	

auditing (5 participants)	profoundly checked every single time. He/she believes us…. (ET1-TM).	
Personal relationship in recruitment (2 participants)	‘Sometimes, we use our network to recruit a skilled employee rather than job application or others’ (MD-TM).	
Employee dissatisfaction for lack of appreciation (3 participants)	‘I am ranking seven out of 10. we are a little bit behind from [….] company. They have employee gratuity but here we have a larger salary pack but no long-run incentive.' (LS3-TM).	Employee dissatisfaction (4 participants)
Employees’ jobs switch (2 participants)	‘If we don’t follow these [social incentives for employee recognition] we can’t just keep our skilled employees. They will switch to another factory.’(PF2-BM).	
Vulnerability (12 participants)	I feel non-compliant factories will not sustain any more in the businesses, competitions are not only in Bangladesh rather it’s from all south Asia’ (EN1).	
Supply chain disruption (6 participants)	‘As a knitting manager, if I know my monthly requirement of grey cotton then I can set up my performance. Further, I don't need to store grey fabric. Or if I have some surplus from the previous year, maybe I can inform the yarn section regarding that. so that they can adjust the requirements. for dying. But any disruption in between the channel could hamper the production process’ (FT1-BM).	Supply chain risk (12 participants)
Supplier assessment (4 participants)	‘Some participants, we do [a] cost calculation, like we have [a] labelling department but we're not using that - instead we outsource [the] labelling section.	

	And this kind of supplier, maybe [doesn't] follow sustainability requirements.' (MF3 -TM).	
Supporting forces(external)		
Buyers' led inspection (20 participants)	'Typically, buyers [retailers]send a inspection team before proceeding the order, or they [retailers] gathered information from the reputed garment company. Either way, before approaching they inspect every detail of ours' (MG1-TM).	B2B collaborative advantage (23 participants)
Performance evaluation (10 participants)	'It's all about the evaluation of our performance, if our practices enhance our order quantity and profit, maybe then we can have a successful supply chain management.'(MF2-BM).	
Supply chain finance (9 participants)	'Monetary consideration is important, specifically across the supply chain. We have to look out for our partners. If I can maintain a profit margin, maybe then I can help my suppliers……. like- to practice [compliance]' (PF3-TM).	
Sustainable materials (5 participants)	'We have organic fabrics, like- you said sustainable materials, but these are more expensive than the regular ones.' (ET2- TM).	
Customer awareness (3 participants)	'After Rana Plaza, customers are more aware of the procurement process…. Specifically, when we talked about the 'Made in Bangladesh' brand' (EN2).	
Price flexibility (3 participants)	'We provide options, like- we have these [from noncompliance factory] kind of button, and we have these [compliance factory] …. which want you [retailer] want.' (MF2-BM).	Networking (3 participants)

Organisational reputation (2 participants)	'Due to the sustainability reputation- workers have become more committed and loyal to the management. They feel some sort of empowered while working in our factory. (PF5-BM).	
Hindering forces (external)		
Price uncertainty (6 participants)	'Market is volatile, the price actually depends on the competitors' rate and as well as the availability of the raw materials' (MD-TM).	Monetary sensitivity (16 participants)
Price variation among garment manufactures (4 participants)	'…. there is no unity between our garment factories, specifically on price. Everyone wants to keep the orders- if possible, with minimum profit' (BD2-TM).	
Price disagreement (5 participants)	There is a big price discrepancy between compliance and non-compliance factory, a compliant factory can't win over non-compliant… some buyers still chose them due to their lower price point (MD- O).	
Legislative role play (2 participants)	'…...sometimes we [factory union] create pressure on the management to make a certain change which is good for us [workers]' (MG3-BM).	
Buyer shifting (5 participants)	We update [audit reports] ourselves for our own betterment, if a buyer [retailer] pays a sudden visit, we don't want to lose him [retailer]. They shift without any random reason. And we don't want to fall for that. (FT2-BM).	
Logistics based decisions (7 participants)	We, actually, don't have any common practice for supply chain or compliance, factories adapted their practices according to the buyers' [retailers'] requirements. (LS-O).	Managements' strategic

		decision (7 participants)
Local government policies (5 participants)	Local government can play an important part in sustainability practices, but as you can see, there is no campaign until it's a life-threatening incident. After Rana Plaza, factory management is more aware of LEEDs regulations. (LS3-TM).	
Knowledge share (2 participants)	'We are adopting compliance practices because our neighbors [fellow factory] are doing these. Before that, we actually didn't adopt these practices'(MF3-BM).	

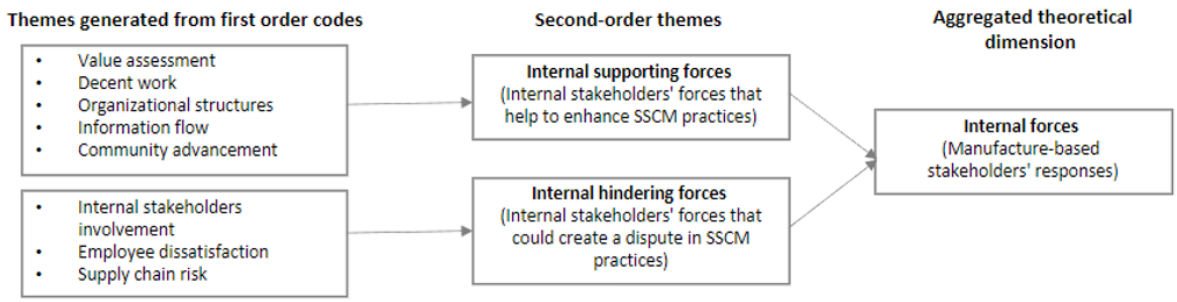
Table 4.6: Key themes related to sustainable forces.

4.6.1 Internal forces

4.6.1.1 Internal supporting forces

As shown in Figure 4.3, basically there are two broad categories-internal forces and external forces, which subcategories as supporting and hindering forces. If the focus is drawn to internal forces, Figure 4.4 is a summarised version of themes and the associated aggregated dimensions.

Figure 4.4: Thematical coding for internal forces.



To begin with, there are a significant number of forces from internal stakeholders that influence the implementation of SSCM in the Bangladeshi garment industry. For example, 'value assessment' is a significant force from internal stakeholders to use sustainability practices, and this theme relates to manufacturers auditing for quality checking of converting fabric and thread into finished garments, perceived by both top and lower management (cited eleven times). For instance, proprietor BD1-O commented:

> '*We maintained our value throughout the process, and we need to ensure a standard in production quality, like an exact match with the code of conduct [retail buyers' requirement], providing visibility for our raw material providers to transporters and vice versa. These ultimately increase our cost consideration, but we assure superior quality.'*

The above-mentioned view supports the assertation that management value assessment characteristics influence business practices which are the basic requirements for sustainable corporate value. Similarly, stakeholder evaluation is also related to themes, such as buyer direction of supplier selection procedures to maintain internal compliance and quality, products. The above-mentioned view supports the assertation that management value assessment characteristics influence business practices which are the basic requirements for sustainable corporate value.

In a similar way, stakeholder assessment is also related to the themes, like buyers' directing supplier selection procedures to maintain internal compliance and quality, product responsibility for continuing time and consistency in finished products and use of organic materials. A manager FT2-TM remarked:

> *'…. it's a chain……and while we select our partners (manufacturer, supplier, wholesaler, retailer) we need to follow sustainable development requirements [from the buyer] which ultimately helps us to sustain in future.'*

This viewpoint demonstrated that retail buyers imposed sustainable assessment criteria as a precondition to gain production orders and in turn pressurized management to follow sustainable practices. In terms of **decent work**, the findings revealed forces including working conditions (cited seven times), employee benefits and compliance initiatives, like Organization Health and Safety (OHS) checklists and retail buyers' governance (cited sixteen times) worked together for better sustainable practices. As the manager FT3-TM stated:

> *'We have our own fair price shop, credit card payment systems, knowledge exchange programs between workers and monthly health and safety training…Apart, we have company's owned school for our children. And these motivate us stay focused.'*

The quote indicates that the different incentives taken by the management to ensure a safer workplace along with sustainable practices increase the commitment of employees to higher productivity, positively affecting the economic viability of factories. Another important force perceived as valuable by participants is **organisational infrastructure**, which represents themes including LEED regulations (cited five times) and building new infrastructure. Participant FT3-TM mentioned:

> *'……. you can't think about employing LEED regulation while you are using your existing building. It takes lots of investment to renovate the old building as well as employ technological advancement to apply for the LEED certification…….'.*

This assertion confirmed that LEED is expensive but at the same time might produce sustainable site development and infrastructure efficiency (cited ten times) including water efficiency, energy efficiency, indoor and outdoor environmental quality. On the other hand, Bangladeshi ACCORD and Alliances (cited five times) are legal agreements to ensure occupational health and safety standards for the workers. A line manager PF1-BM commented:

'…certifications, like Bangladeshi ACCORD and Alliance are setting some standards. So that we can compete in the same range with other companies globally. As you know Bangladesh is the 2nd largest exporter in the world and these certificates [are] the justification that we are following the global standards.'

This shows that after the terrible accident of Rana Plaza, Bangladeshi factory owners implemented different platforms for employee well-being and safety improvement, and these are closely related to the social dimension of sustainable practices.

Ten participants identified **information flow** as a significant internal force that deals with themes like sustainable knowledge sharing among SCs partners (cited eight times), lean management for logistics-based activities (cited seven times) and process transparency to allow, for example, the quick adaptation of product progression (cited six times). A sub-manager MT2-TM commented:

'…In order to get a better performance, we have to maintain lean management among these [production areas]. For example, if I know my monthly requirement of grey cotton in advance then I can set up my goals [depending] on the forecast, and I don't need to store any extra grey fabric. Similarly, if we have coordination with other sections we can adjust, reschedule our requirements quickly and be prepared for the sudden /occasional changes [from retail buyers].'

This viewpoint clearly supported that information flow among stakeholders has a positive impact on both the economic and social dimensions of SSCM.

Finally, five participants talked about their engagement in community well-being (cited three times) and effective commitment towards social welfare (cited two times); both

are related to the theme of community advancement. For example, the owner MF-O commented:

> *'Our motive is not only sustaining our factory's environment but also maintain[ing] the surrounding locality's sustainability. Say, the local tea stall opened at 8 o'clock cause…. our factory's gate opened at that time. A major part of that very shop's customer is our hundreds of employees, who work with us.'*

This revealed that the factory's social management practices improved surrounding development as well as enabled public development (Huq et al., 2016).

4.6.1.2 Internal hindering forces

While considering the overall internal hindering forces, several unfavorable themes for sustainable practices have emerged. Participants particularly mentioned internal **multi-stakeholder involvement** which is comprised of themes including stakeholder perception concerning new investment to meet sustainability requirements (cited nineteen times). As an illustration, owner LS-O commented:

> *'…honestly, we perceived sustainability as an expense, and it is quite the opposite of profit. But we are bound to [by retail buyers] follow these [sustainability] rules and all these regulations [ACCORD and Alliance] update frequently which requires new investment to meet them.'*

This implies that investment is really important, but at the same time, it becomes harder to justify. Similarly, participant PF2-TM remarked:

> *'….to get orders [from retail buyers] we have to follow all these LEEDS, ACCORD and Alliance regulations. But you know…. it's hard to get these [certifications] and we have to update these [certifications] regularly. If you want to build a*

brand-new factory, then maybe it is possible to employ [LEEDS rules] but for [an] existing one…. it's tough. And all of these [require] huge investment.'

This view pinpoints a few impediments to sustainable requirements. Firstly, considerable reinvestment is required for improved certifications relating to social sustainability, and retail buyers impose these assessment criteria as preconditions to gain production orders. Secondly, without having a strong financial base, environmental sustainability is difficult to employ. Finally, manufacturers are struggling with a small profit margin while considering the return value of sustainable practices. In addition to this, six participants mentioned audits by buyers along with third-party involvement as a hindering force. As an example, manger FT2-TM commented:

'…buyers visit the factory, audit inside and out whether we are following the sustainability requirements or not. But at the end of the day, they [retail buyers] squeeze the price. Sometimes, they place the order through a [third party] merchandiser who really doesn't care about compliance or anything….'

This view is important, as management brings lots of changes, particularly in compliance management due to maintaining sustainability as well as the monetary benefits. As an argument manager BD2-TM remarked: *'…in these days the cost of living is getting higher day by day while the profit level is becoming narrow. At this point, new investment for updated sustainable requirements is tight. Particularly, when new intervention is necessary…'* This insight outlined that updated requirements for sustainability are essential, but at the same time provide evidence of the necessity of new investment in business (cited six times).

The next theme when considering logistics-based difficulties is supply chain risk. Twelve participants pointed out vulnerability as an important theme when talking about supply chain disruption while six participants highlighted issues with outsourcing some production activities, like labelling. For example, participant MF3-TM commented:

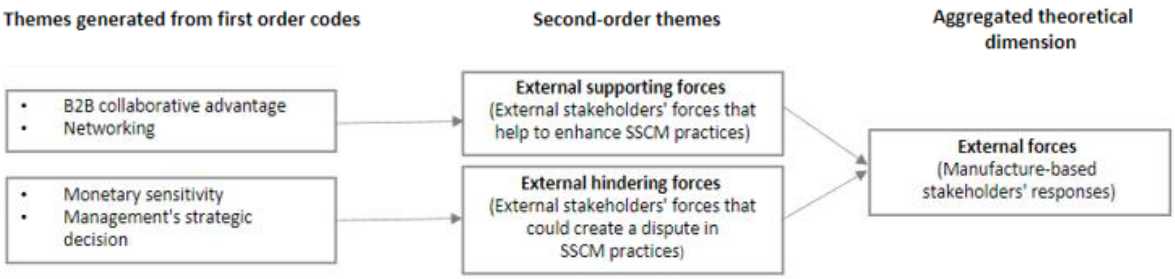
'Sometimes, we do [a] cost calculation, like we have [a] labelling department but we're not using that - instead we outsource [the] labelling section. And this kind of supplier, maybe [doesn't] follow sustainability requirements.' This view sheds light on the importance of suppliers' supplier sustainability practices and how primary manufacturers try to conceal the hidden secrets of sustainability disruption in order to secure profitability.

4.6.2 External forces

4.6.2.1 External supporting forces

Likewise, the internal forces, the summarized version of external forces and the aggregated dimensions gathered in Figure 4.5

Figure 4.5: Thematical coding for external forces.



As shown in Figure 4.5, the majority of these forces came as hindering forces. Particularly, two second-order external forces were identified, which supported the implementation of sustainable practices, namely **B2B collaborative advantage** and **networking**. Themes like buyers' led inspection (cited 20 times) and other stakeholders' performance evaluation (cited 10 times) are the most prominent here. These empirical findings suggest that manufacturers are encouraged by the assessment criterion of both buyers and external stakeholders (e.g., legislation bodies,

and governments) while imposing sustainable practices in the factory premises. Textile manager ET1-TM remarked:

> *'….even though we are certified producer[s], buyers inspect our automation, air quality, wastewater effluent and noise pollution frequently, specifically before finalizing an order. It kind of forces us to be updated.'*

In a similar vein, garment manager MF3-TM asserted:

> '*We have different certifications for different buyers. For example, we maintained BSCI and ISO 14001 certifications for US buyers. Sometimes, a specific type of buyer maintains certain regulations, and these are widely accepted by others [buyers], particularly for the UK, and we always try to maintain those at any cost. We also have to be careful while we are choosing suppliers' suppliers, like- from where we are getting our materials. It's like a pictorial representation before getting orders.'*

These views suggested B2B collaboration between stakeholders such as certification bodies and buyers could enhance sustainable practices through inspection, but at the same time, manufacturers have to be careful with their outsourced suppliers. Several participants also put forward the significance of supply chain finance (cited nine times) and sustainable materials (cited four times). As evidence, a supply chain manager of EN3-TM: *'…[retail] buyers gave us a sample before placing an order and we needed to deliver the exact type. Sometimes they [retail buyers] help us with the R&D and shared the cost with us. For example, we covered 80% and the buyer covered 20% of the total expenses.'* Furthermore, a production manager DBL2-TM stated:

> *'All our big buyers have their contingency plan, say for 2025 or 2030. Maybe they will move to 100% or 50% recycled products in the coming season. So, we need to forecast their requirements and set our activities according to them.'*

This highlighted the fact that modern consumers are informed about the production procedures of high-street fashion brands, specifically how and where big brands outsource their products line from emerging countries. This awareness is related to the theme of customer awareness (cited three times) and compels retailers to go for recycled and organic product portfolios, and similarly binds manufacturers to go for organic product lines. In terms of **networking**, there are also two themes which prompted manufacturers to adopt sustainable practices: price flexibility (cited three times) and organisational reputation (cited by two participants). Particularly, manufacturers' reputations helped them to secure a higher profit margin. As participant PF3-BM noted: *'If you linked with us that means you are following all rules and regulations appropriately, and buyers don't need to be worried regarding sub-supplier compliance conditions etc. This is some kind of uplifting [recognition] of your image for the mass suppliers.'* This statement clearly suggests that not only do sustainable practices enhance the quality of the production inside the factory premises, but they also serve as a trademark for the factory.

4.6.2.2 External hindering forces

As for external hindering forces, we identified **monetary sensitivity** as one of the key reasons why stakeholders dissociate from sustainable practices. Several themes like price uncertainty (cited six times) and price variation among garment manufactures (cited four times) are most common here. For instance, a participant from FT4-TM commented:

> *'…there is no unity between garment factories. if I charge $2.00 for a tee shirt, my competitors charge $1.50 for that same tee shirt, and this creates uncertainty in orders''*

This also reflected by the themes like price disagreement leading to differentiations between countries such as Vietnam, India, and Thailand (cited five times) and

legislative role play (cited two times) relating to setting a standard rate for similar products. The same participant argues that:

> *'By contrast, Indian factories have unity in terms of a pricing point. They [stakeholders of India] fixed a rate for all garment companies and others [garment companies] have to follow it. But in Bangladesh, we don't have anything like that.'*

This statement was supported by other participants, including MG2-TM and LS2-TM, and these discussions also identified a link with buyer shifting (cited three times). Another comment from PF3- BM extended this argument with: *'The [garment] manufacturer is always the loser. If you give a 100% sustainable product, that doesn't matter. I gave you a lower price, that's what matters. Whether the raw materials are organic or not, he [the retail buyer] didn't consider that. At the end of the day, price is what matters.'* These comments revealed that the global market consists of various types of garment buyers, and some do not want to use sustainable materials, even when the buyers have the opportunity to do so. This leads to a lack of consistency in embedding sustainable practices in SSCM. Twelve participants also identified **management's strategic decisions** as a significant theme related to logistics-based decisions (cited seven times) and local government policies (cited five times). As an enabler EN2 remarked:

> *'…the major portion of the garment factories are established around Dhaka city, which caused [a] significant rate of air and water pollution… [the] government tries to push garment manufacturers away from [the] city area. But, if you consider transportation and other facilities, it may cause hindrance to the garment supply chain.'*

In a similar way, manager FT2-TM remarked:

> *'If we talk about transportation, we need to think about our drivers. Are they trained enough? Is it possible to deliver [promptly]? What about the route or zone? Another important thing is theft issues and maintenance of containers… The Bangladesh government is now maintaining a zone-based transport system for the garments industry, but that's not enough. We need to think about our ship [seaport] and cargo facilities.'*

This point showed garment manufacturers are aware of the severe impact of pollution and were considering their options while setting up an infrastructure but are still struggling to decide on an actual solution. A comment from an influencer EN3 compared this situation with other countries:

> *'[China] moved their industrial sites far from the city area. Our [Bangladeshi] government is trying to initiate the same phenomenon by imposing more tax, lots of rules and regulations, hurdles to authentication and surprise visits from legislative bodies, while established garment manufacturers want to build new infrastructure.'*

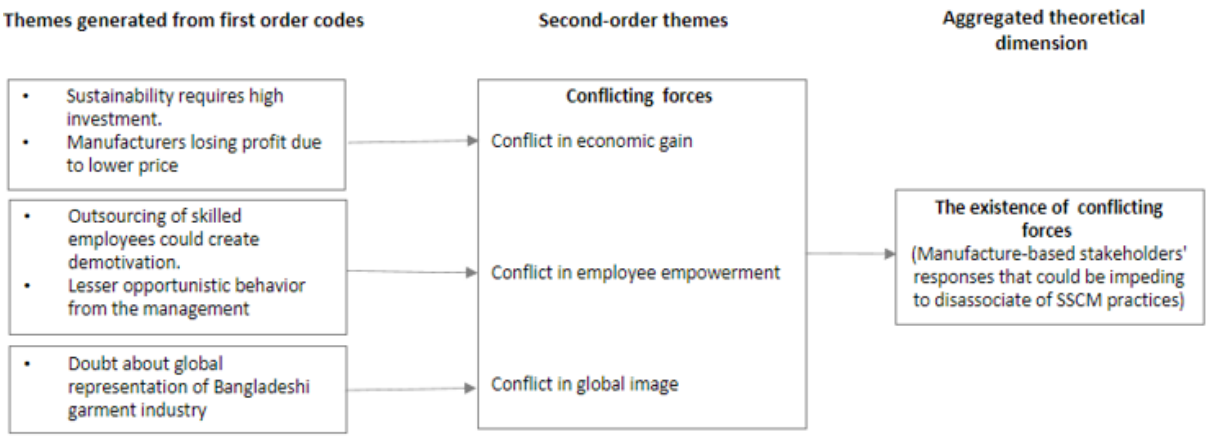
The last theme which also functioned as a hindering force is knowledge sharing amongst competitors (cited by two participants) - sometimes competitors don't want to share the details of current practices, specifically for the research and development phases to maintain the status quo in the market.

4.7 Contradictory/conflicting forces towards SSCM practices.

However, the overall findings showed that there exists a large number of supporting forces for successful sustainability implementation but, simultaneously, Figure 4.6

shows a number of forces are impeding stakeholders. Three main areas were identified from the interview data: (1) conflict in the cost of sustainability and economic gain; (2) conflict in standardisation and employee sustainability; and (3) conflict in economic gain and social image.

Figure 4.6: Thematical coding for conflicting forces.



4.7.1 Conflict in economic gain

Sustainability requires high investment, and manufacturers lose profit due to a lower price: investment vs profit margin.

Twelve participants suggested that garment manufacturers experienced financial difficulties while implementing SSCM. In evidence, the buyers didn't confirm any extra monetary benefit for sustainable initiatives. For example, manufacturers adopt different types of rules and regulations to enhance environmental and social sustainability through huge investments, yet then lose profits by not getting enough orders or an appropriate price point from buyers. As an example, the owner BD-O explained: *'…after Rana Plaza and Tazreen fashion accidents, we are investing a lot in health and safety standards, building up new infrastructure. We perceived that order quantity, as well as the price point, will be increased by buyers a little bit. But that does not actually come along… Price is at 15 the same level and at some point, it is quite*

down [than it was before], and the cost is growing… because of new infrastructure, rules and regulations, worker's salary and automation. And ultimately, [the] profit margin is shrinking up for shareholders.' This quotation reflects the contradictory view that there is a dispute between sustainability-related costs and economic gain. Garment manufacturers are struggling with cost-related decisions while integrating environmental and socially sustainable investment in their premises. Specifically, after the Rana Plaza and Tazreen Fashion accidents in 2013, factory owners carried out huge health and safety improvements to their workplaces but perceived they didn't derive a tangible monetary gain in return. This finding is somewhat supported by Nath et al. (2020), in that Bangladeshi stakeholders perceived sustainability-related costs as an expense but not as an investment. However, it may be that there are long-term benefits. A remark from a top- level manager also agreed with this viewpoint: '*We have to be visionary while thinking about sustainable practices…. the initial training and rebuilding will be expensive, but we can hope that the ultimate result will be fruitful. At least it will create a brand image and that will help to get more [orders from buyers].*' (LS2-TM).

4.7.2 Conflict in employee empowerment

Doubt about employee satisfaction: employee empowerment vs employee satisfaction.

Regardless, forces like working conditions, employee benefits and compliance initiatives related to factors of employee sustainability represent the second-order theme of 'decent work' (Soundararajan and Brammer, 2018). Despite numerous OHS (Occupational Health and Safety) compliance initiatives, progress on creating decent work is limited: *'…All types of rules, like ACCORD or ALLIANCE, talked about workers' safety and benefit, but what about us [middle managers]? Like, what will boost our engagement, or what will give us safety from [getting sacked] or anything…You need us…without us, you just cannot operate anything here".* (FT3-BM). This quote reflects dissatisfaction from some employees, which is an internal hindering theme. Research suggested that engaged and motivated employees played a vital role in sustainability

excellence (Diabat et al., 2014). Thus, improvements in employee social sustainability can significantly mitigate sustainability risks for manufacturing firms (Hoque et al., 2020). Apart from mitigating this, factories would be (or should be) motivated to increase employee social sustainability in the supply chain given that they are advised to abide by the Ruggie principles (2011). These principles require a variety of actions to uphold employee rights and treat employees as 'responsible corporate citizens' and employ recognition for all employees (Kuruvilla and Li, 2021).

Interestingly, three participants acknowledged 'outsourcing of skilled employees' and 'lesser opportunistic behaviour from the management' as significant hindering forces in sustainable practices. These findings uncovered that there is a significant dispute between domestic employees' perception and outsourcing of skills. The domestic employee sometimes perceived 'outsourcing of skilled employees' as a threat rather than an opportunity to learn, with EN2 commenting '… meritocracy should be given priority over national and racial identity'. However, an ET3-TM countered: *'…with proper training and motivation from higher management we can do better in our performance. For example, management can send the existing employees to get higher education and learn new skills from overseas or can arrange training programs more frequently instead of getting foreign employees…. but you know money is a fact. Training a new bunch [a line of employees] needs lots of investment'.* This statement extends previous research showing that, with the intention of earning greater profits, management sometimes pretended to be opportunistic (Nath et al., 2020) and that for productive sustainable performance, management should focus on domestic culture and cognition rather than other aspects (Montabon et al., 2016).

4.7.3 Conflict in the global image

Doubt about the social image: economic gain vs social image

Another significant conflict arises from how Bangladesh is perceived globally. In spite of having increasing numbers of LEED-certified factories, the global image/reputation

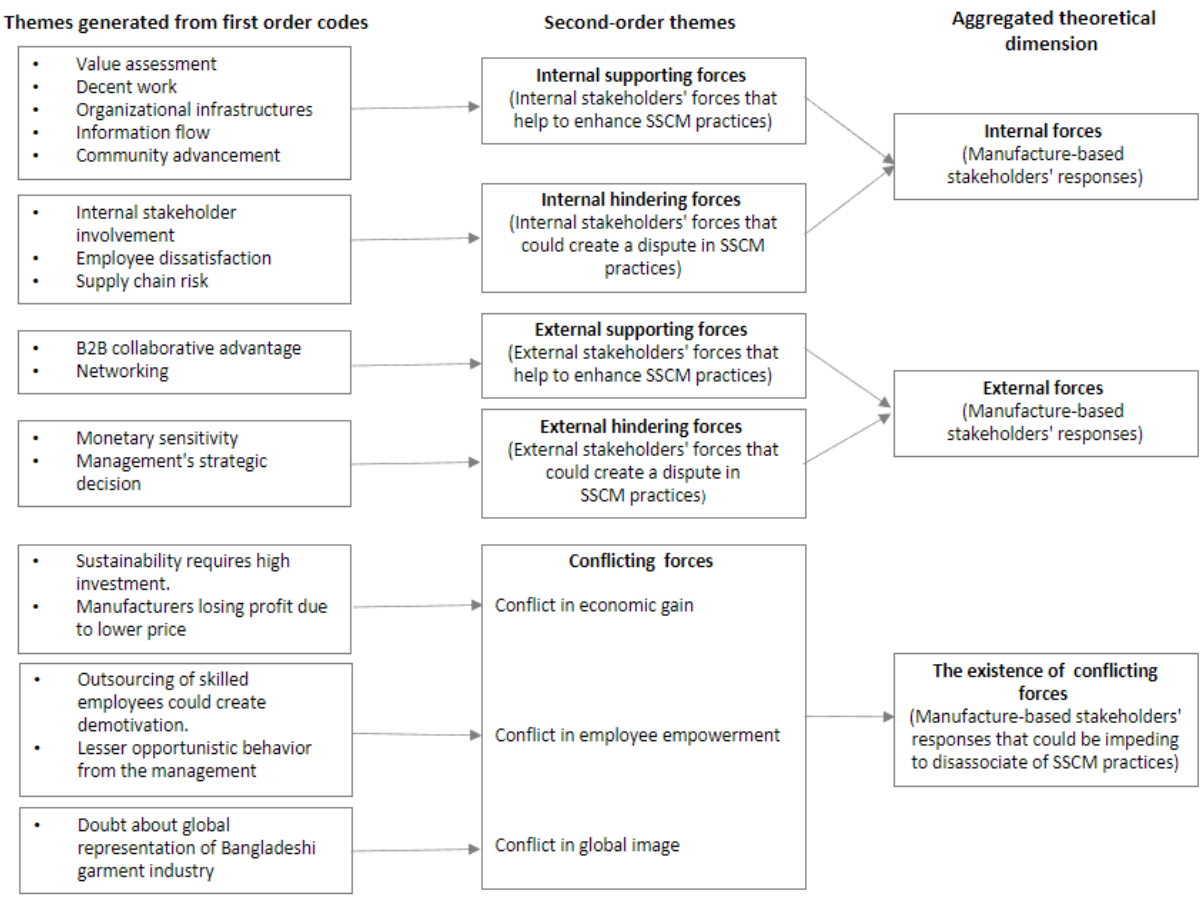
of the Bangladeshi garment industry has not changed much (The Daily Star, 2021). This leads to a disconnect between the global reputation of the Bangladeshi garment industry and the reality observed by stakeholders in Bangladesh: *'After the Rana Plaza accident, when buyers landed in Zia Airport [International Airport of Bangladesh] the first things came into the [buyer's] mind was that we are not practising social and environmental sustainability appropriately here. But if you see the global picture, [Bangladesh has] the highest number of LEED-certified green factories compared to other countries. But this has not really changed our image'*. (BD3-TM). Internal stakeholders are well-informed about the global garment picture and frustrated with this perception and see it as a possible hindering force for sustainable implementation. While Nath et al. (2020) suggested that confusion and a lack of awareness from stakeholder perspectives could be significant factors for dissociating sustainable practices, the evidence from this study confirms this to be the case.

To sum up, the identified stakeholders of the Bangladeshi garment industry encountered a wide range of internal and external forces (i.e., supporting and hindering) and challenges to the successful implementation of SSCM practices in their SCM. The finding also indicates that the majority of the stakeholders explained (cited by 23 participants) external supporting forces, such as- buyers led the inspection, performance evaluation, customer awareness, organisational reputation are more important for SSCM practices then value assessment (cited by 19 participants), which is an internal supporting force involved manufacturers audit, supplier selection, and compliance initiatives. In contrast, internal stakeholder involvement (cited by 21 participants), such as -stakeholder participation, reinvestment, and more compliance perceived as a more powerful hindering force rather than monitoring sensitivity (cited by 16 participants) which is an external hindering force, such as-price uncertainty, price disagreement and buyer shifting.

4.8 Discussion

The qualitative findings of this chapter examine the stakeholder forces that influence the implementation of SSCM practices in the Bangladeshi garment industry. The findings indicated that there are several important emerging forces, such as employee retention, sustainable finance, and transparency between internal SC partners, that evolved around the day-to-day operations of the garment shop floor. In particular, the qualitative findings highlighted the conflicting forces that could impede SSCM practice and performance. Figure 4.7 summarised the supporting, hindering, and conflicting forces discussed in the chapter.

Figure 4.7: An integrated framework for stakeholders supporting, hindering, and conflicting forces.



Firstly, based on stakeholder theory, the overall interview findings showed that the top level of management is mainly related to the strategic planning phase, which is mostly involved with the decision-making aspects of operational activities. Several important forces, such as value assessment, decent work, and organisational infrastructures perceived by the interview participants as internal supporting forces, are related to the aggregated theoretical dimension of internal forces of SSCM practices. On the contrary, forces like employee dissatisfaction and supply chain risk/disruptions are perceived as internal hindering forces. Furthermore, the qualitative findings suggest that top-level stakeholders understand that sustainable practices would be beneficial in the long term for a developing country like Bangladesh, although inbound stakeholders focused mainly on sustainable practices in response to economic logic.

Secondly, by focusing on institutional aspects of garment shopfloor's sustainability practices, inbound stakeholders perceived B2B collaborative advantage and networking as an external supporting force, which supports the empirical findings of prior studies Nath et al., (2019) and Jena et al., (2021) that garment factory' internal sustainable practices are strongly supported by the views of external SC partners, particularly from retailers/buyers. For example, garment owners are most interested in garment shop floor compliance practices in response to the production requirements of buyers. The findings revealed that mock compliance only works when the supplier has already reached some statutory standard. Although Nath et al. (2021) identified that employee empowerment may often be symbolic, the findings underline that active engagement can ensure sustainability practices on the garment shop floor.

Thirdly, the quality findings identified several areas where differences can arise: conflict in economic gain, conflict in employee empowerment, and conflict in the global image. In particular, the analysis highlighted the difference between existing employees' perceptions of sustainable views / practices. For example, domestic employees perceive the use of foreign employees as a hindering force for employee empowerment. Furthermore, several research participants also highlight the importance of the global image as a garment manufacturing country of Bangladesh

and highlighted the significance of economic gain while maintaining sustainable practices in garment shop floor operations.

In conclusion, the relationship between this stakeholder group and the issue studied must be determined, with particular attention to the relevance of stakeholder theory and subsequent institutional engagement. Moreover, all stakeholder groups reflect a deep commitment towards the SSCM forces, which in turn affects the SSCM performance of the individual factory as a whole. This implies that the use of these sustainable practices will shed light on SSCM dimensions, concepts, and relationships at the expense of others. This point will be further discussed in **Chapter 7.**

4.9 Summary of the chapter

This chapter investigates the sustainable forces to SSCM performance. The findings demonstrated that internal top-level management experienced more supporting forces than hindering forces up sustainable practices. As regards the conflicting forces, top-level management was cited more than low-level management. this is mainly due to the conventional viewpoint of stakeholder theory, which drives stakeholders, like- top-level management to be the decision makers of business operations and likely to embrace more SSCM practices as a way of maximising economic sustainability. It is suggested that, in the case of instrumental engagement, sustainability practices are perceived as an integrative way to the successful implementation of sustainable practices in the garment SCM. This may be because the low level of management mainly engages with the operational activities as well as institutional human expertise to comply with the implementation of SSCM practices. Moreover, the qualitative findings moderately completed the research aim, by answering the qualitative part of RQ2 (i.e., institutional pressures), RQ3a (i.e., stakeholder forces related to SSCM practices) and RQ3b (i.e., stakeholder forces related to SSCM performances). Finally, the findings of this chapter will be further expounded in detail with regard to institutional theory and stakeholder theory in the discussion Chapter.

CHAPTER 5

Quantitative Analysis

5.1 Overview

The main focus of this chapter is on employee engagement (EE) in sustainable supply chain management in the garment industry. To be precise, how employee engagement enables the SSCM practices in a contextual setting. To achieve this goal, the perception of lower-level garment employees regarding SSCM practices, as well as the employee engagement in sustainable practices, was highlighted through the survey method. Specifically, the relationship between SSCM practices and working condition of lower-level of garment employee is the focal point here.

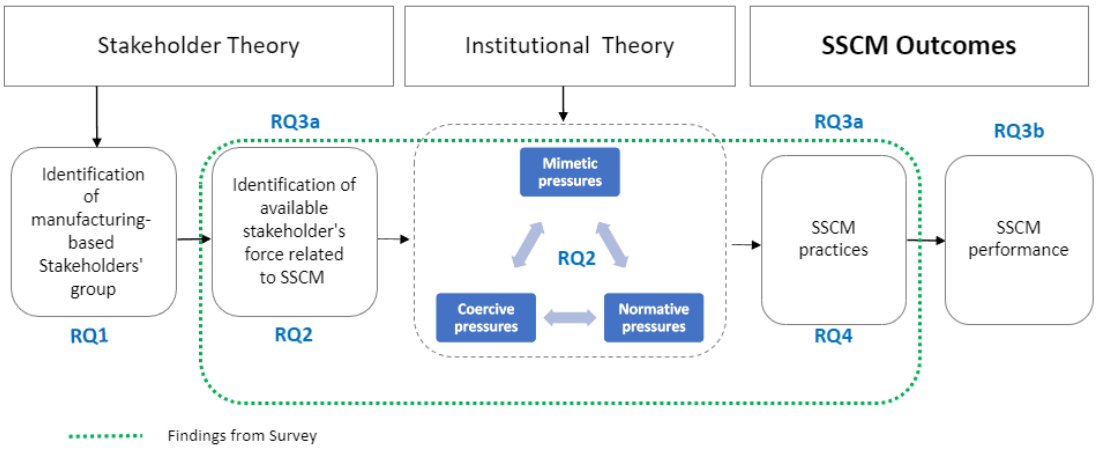
This first section of this chapter started with a reminder of the findings from the previous enquiry cycle, and then more specific research questions are proposed to guide the second cycle of the enquiry. The following subsections offer a deeper understanding of the theoretical backdrop to this cycle- namely, an overview of employee engagement (EE) theory, the role of EE in sustainable practices, and the relevancy between EE and SSCM from a manufacturing point of view. The face-to-face survey used as the primary mode of data exploration and diversification of shop floor/lower-level employees' engagement is explained in the following part. The next four sections present the findings. Thus, the overreaching objectives of this chapter are:

- Literature foundations: Scholarly views of employee engagement.
- Application of methods: A brief overview of survey analysis.
- Analysis techniques: A brief overview of statistical techniques that are used for quantitative analysis.
- Findings: Illustrations of demographic and statistical results related to sustainable practices as well as firm performances.
- Discussion: A brief discussion about the measurement of proposed hypotheses.

Table 5.1: Subsequent objectives of Chapter 5.

So far, the primary finding identified existing sustainable forces, which could support or hinder SSCM practices in the Bangladeshi garment industry. The findings from the previous cycle of enquiry highlighted the importance of two types of thematic responses towards SSCM- supporting (good-side) forces and hindering (bad-side) forces, which are currently used in the Bangladeshi factory premises. There are some conflicting (self-contradictory) forces- such as economic gain logic, employee empowerment logic and global image logic- are identified that perhaps could create trade-offs between SSCM practices and implementation. However, the previous cycle identified different top-level of management of garment factory premises and how they linked each other while implementing sustainability practices, and haven't actually focused on the lower-level of employee engagement. Hence, taking a stakeholder perspective appears fundamental to the question of how/whether or not garment shopfloor employees and their engagement could enable SSCM practices. Or more importantly, the research gap is to note- as a key stakeholder of sustainability practices in the factory premises-how shop floor employees' engagement can enhance the sustainability practices? Therefore, the following enquiry cycle has been developed around the discussion about EE and the relationship with SSCM practices with garment factory's employee's engagement. In continuation of Chapter 2 (see Figure 2.1), the basic theoretical framework is the quantitative analysis of this thesis, precisely the identification of the stakeholder group and the perception of lower-level employees about SSCM practices and their engagement in SSCM garment performance. The basic theoretical framework is shown in Figure 5.1.

Figure 5.1: Theoretical framework for the survey.



5.2 Literature foundations

The literature review begins by considering the factors that affect employees' engagement in the manufacturing industry, particularly highlighting a focus on shop floor employees' engagement in factory premises. This leads to definitions of EE, and the applications of the concept in understanding the regions, sectors, and garment industry.

5.2.1 An overview of EE.

When considering factors that influence EE in the garment industry, a common starting point is the model choice of literature. The extensive body of work stretching back to the early 1990s (Kahn,1990) has examined the factors considered by stakeholders within organisations when choosing the mode of management for the employees. For example, Macey and Schneider (2008) provide a summary of four distinct studies in the area of behavioural engagement, i.e., commitment, empowerment, effectivity and involvement while discussing the operational movements at a firm level, and generally ignore wider influences from other stakeholders, specifically from an external stakeholder's viewpoint.

In looking at the EE more widely, scholars holistically consider employees' **commitment** as a common behavioural management factor for every type of business, ranging from manufacturing to the service industry. For instance, Bowersox et al, (2000) highlighted that higher level of commitment among the organisational behavioural engagement requires strong financial and other beneficial opportunities that might have been offered by the competitors. Admittedly, Handfield, (2002) supported the argument involving trust as a reinforce. Furthermore, Morgan and Hunt (1994, p. 22) argued that "... when both commitment and trust – not just one or the other – are present, they produce outcomes that promote efficiency, productivity and effectiveness". It is reported that the biggest stumbling block to the successful EE, is the lack of trust (Sherman, 1992), and subsequently the trust is perceived as a cornerstone of the stakeholders' partnership (Spekman, 1988).

Focusing on the **empowerment** element, the organisation plays a key role in the performance of employees while interacting between the sectional and the levels of operations (Jackson et al., 2014). Lower-level management (i.e., who are in charge for operational activities) of several departments, such as- productions, processes, and compliance need more adoption than the top level of management (i.e., who are in charge for strategical decision), such as- human resource, finance, etc. For instance, Lengnick-Hall et al. (2013) highlight the coevolution of EE both at the top level and at the lower level, and supported that EE is necessary, but the relationship between empowerment and trust and the insertion of 'compliance issues' makes discussion of this relationship increasingly scarce, justifying the integration between different organisational and human resource behaviours.

Mention should also be made of **effectivity** in engagement. The concept is defined by Bakker (2011) as 'a positive, highly awakened emotional state with two features: energy, and involvement'. Here the focus is very much on a return to the engagement state over sustainable practices in factory premises, rather than looking at alternative sections in EE. Further, focusing on operational side, Soane et al. (2012) established a paradigm of EE that has three requirements: a work-role focus, activation and

positive affect, and highlighted the fact that EE is multifaceted construct, which evolve around the mixtures of commitment, loyalty, productivity and ownership. For example, Scott (2017) underlined that employees' non-engagement in their work leads to lower productivity and profitability. Therefore, many researchers place a strong emphasis on the identification of EE, as well as the understanding of its antecedents.

The broad overview of the EE literature already signals an opportunity for the identification of EE in an industry, particularly from a manufacturing perspective. Therefore, the intention is to draw on the results of the lower level of employees as a stakeholder of a manufacturing industry, such as the Bangladeshi garment industry, and to build a fuller picture about the relationship considered in this research.

5.2.2 Managing shopfloor stakeholders' participation through EE.

The significance of EE is widely acknowledged among researchers and practitioners alike. In certain areas like- garment shop floors, employees and their engagement are even considered likely to become absolutely essential, particularly-in the service industry where the survival and flourish depend mainly on the service of employees (Sun & Bunchapattanasakda, 2018). Whether or not that is the case, there is little doubt that the affirmative psychological state of an employee can be hugely beneficial (Xiao and Duan 2014). For instance, Xu et al. (2013) highlighted how highly engaged individual workers are typically enthusiastic, fervent, and energetic, and the worker's positive attitude towards the firm is manifest in different ways. Equally, by being dedicated to attaining work-related objectives at personal, team, and organisational levels, could uphold the personal gain of employee him/herself (Wellins and Concelman, 2005).

Although improved performance and productivity are at the heart of engagement, it cannot be achieved with a mechanistic approach that tries to extract discretionary effort by manipulating employee commitment and emotions. Cha (2007) emphasised that employees see through such attempts very quickly; they lead to cynicism and

disillusionment. On the contrary, engaged employees freely and willingly give discretionary effort, not as an 'add-on', but as an integral part of their daily activity at work (Sun & Bunchapattanasakda, 2018). Scott (2017) put forward the argument with assertation ‘is employee engagement something new, or simply old wine (long-standing management approaches) in new bottles (fashionable management-speak). Is it just the latest management fad?’ A key feature of this argument is also supported by Jackson et al. (2014), who discussed EE has a clear overlap with analytical antecedents such as commitment, ‘organisational citizenship behaviour’, job participation and job satisfaction, etc. In particular, Visamitanan et al. (2021) assessed that a successful EE could happen in two ways: 'organisations must work to engage the employee, who in turn has a choice about the level of engagement to offer the employer, and each reinforces the other’.

5.2.3 Managing sustainable practices through EE.

In terms of managing sustainable practices through EE, particularly in supply chain literature-there has been undertaken on some of the employee’s involvement in green supply chain as well as in SSCM literature, but researchers also emphasized the need of overall integration of employees, and their engagement related to sustainable practices (Namagement et al., 2019; Srivastava and Shree., 2019; Duthler and Dhanesh., 2018; Sarkis et al., 2011). For example, Namagement et al. (2019) showed that EE plays an important role in the implementation of any new practices in the factory premises, where motivation and rewards increase the participation of employees. Likewise, Srivastava and Shree (2019) also supported the argument and identified other practices, such as compliance initiatives, policies and openness of management could also bring positive involvement in EE. Conversely, Sancha et al (2016) characterized EE as ‘success’ in management practices that occur over a longer period of time. Furthermore, Dandage et al. (2019) supported this argument with a 'success' narrative, typically clarified as a reward for the employees engagement in SSCM practices, such as higher productivity, waste management, etc. This argument goes with the proactive attitude of stakeholder engagement towards sustainable practices, particularly in shop floor operations. As Ellinger and Ellinger

(2014) described, 'proactive attitude' towards work responsibilities is a core characteristic of sustainable practices, it is normal for shop floor employees to go beyond the requirements of their role to ensure they serve the firm to the best of their ability (Kumar and Rahman, 2015).

Overall, EE in a manufacturing context is complex, and it may be too idealistic to view them solely from the perspectives of the literature. There is an intrinsic interplay between EE and sustainable practices. Shifting from employee involvement to employee engagement, particularly through sustainable practices, thus lead organisation to significantly rethink the relationship between sustainable practices and EE (Duthler and Dhanesh., 2018). Some researchers have specifically identified the value of understanding both EE and sustainable practices in GSCM as well as in SSCM (Visamitanan et al., 2021; Nazir and Islam, 2020).

5.3 Revisit the proposed models.

Following the definitions of EE specified by Kahn (1990) and Macey and Schneider (2008), the researcher propose that EE could leverage the relationship between stakeholder decisions and organisation sustainable practices, which in turn improves firm performance. This study concentrates on the existing EE involvement through sustainable practices in the Bangladeshi garment industries, specifically in manufacturing industry orientation. In particular, the focus is on how/which way EE enables sustainable practices by empowering management to fully understand the existing shop floor operations and gain insight into resource recombination, through stakeholder decisions concerning sustainable. In general, manufacturers will be more likely to leverage EE to develop more sustainable practices to enhance firm performance with supportive decision-making. Considering the mediation role of EE, this study posits that shop floor sustainable practices will positively moderate the strength of the mediation effects of EE in the relationships between stakeholder decisions and organizational firm performance. Therefore, the basic model involved two categories- firstly, the effect of EE as a mediator, and then SSCM practices as

moderators in mediation between stakeholder decision and firm performance (i.e., social performance, economic performance, environmental performance, and disruptions). By considering complex relationships among stakeholder decisions and firm performances, this study adopted Hayes (2022) **PROCESS Macro** mechanism to explore the mediation and moderated mediation relationships. Figures 5.2 and 5.3 presented the basic observed models for this study (see Chapter 2, for the conceptual model and details of the hypotheses).

Figure 5.2: Basic mediation model (adapted from Hayes, 2022).

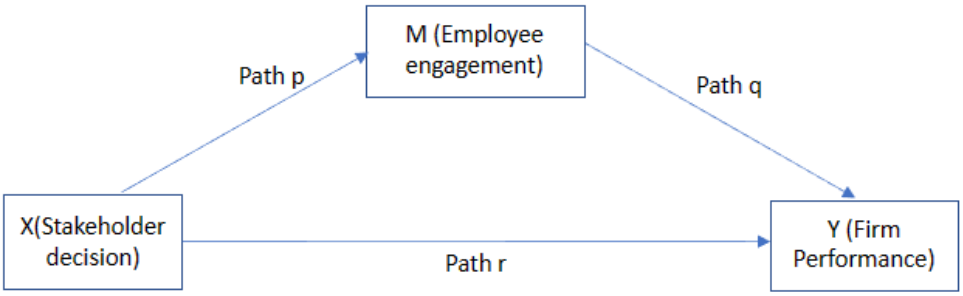
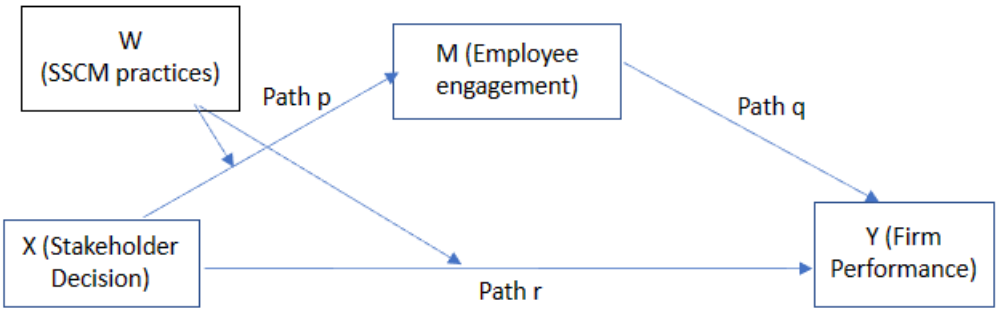


Figure 5.3: Basic moderated mediation model (adapted from Hayes, 2022).

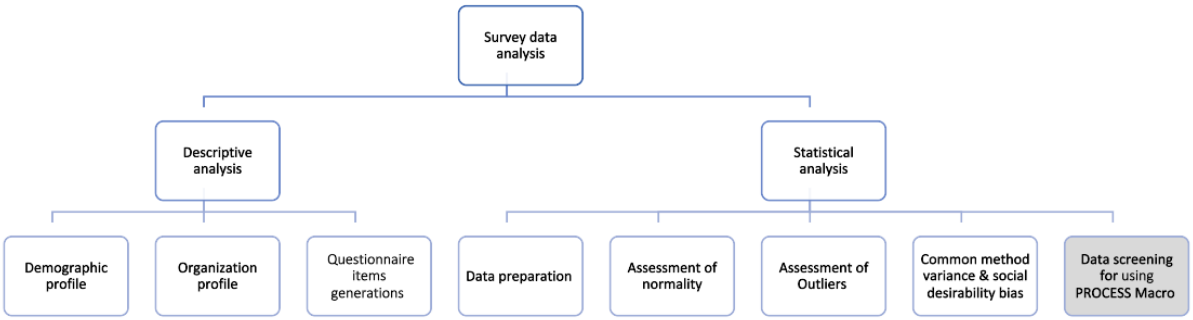


5.4 Application of method: survey

Although an extensive discussion about methodology and research design has been presented in Chapter 4, in this section more specific details about the quantitative data analysis applied in this circle of enquiry are provided. As the survey is the primary mode of collection of information from the research participants, particular attention has been paid to the hypotheses' development and their relevancy with the research questions. Statistical software such as Statistical Package for Social Sciences (SPSS) 27 and PROCESS Procedure for SPSS Version 4.0 were used to analyse the data.

The following sections will summarise the data analysis, which includes the highlights of the descriptive analysis and statistical analysis of the survey data, presented in Figure 5.4.

Figure 5.4: An overview of survey analysis.



5.4.1 Descriptive analysis

5.4.1.1 Sample size requirement

Researchers showed that the sample size should be large enough to address the research questions and to present the population fairly (Collis and Hursey, 2014). In particular, for quantitative analysis, the sample size played an important role in minimising the sampling error. Several researchers recommend the appropriate sample size for multivariate analysis (Collis and Hussey, 2014; Hair et al., 2010). For

instance- for confirmatory factor analysis and multiple correlation the sample size needed to be larger than 30 and less than 500 (Hair et al., 2010, Sekaran, 2003). For instance, Sekaran (2003) suggested that the sample size for multivariate analysis should be ten times the number of variables. This study used PROCESS Macro for mediation and moderated mediation analysis among the constructs, and to do so several multivariate analyses such as inter-variable correlation, EFA (exploratory factor analysis), CFA (confirmatory factor analysis) needed to demonstrate. Moreover, in this study, the second-order construct of the independent variables is formative and has three formative indicators for measuring the mediating construct. By following the ten-times sampling rules, the minimum sample required would be thirty in number to satisfy the first requirement of formative indicators. To support this argument, this study used four formative indicators stakeholder decisions, sustainable practices, employee engagement and firm performance for measuring the constructs. Therefore, depending on the ten-time rule of thumb, the minimum sample size needed is 40 in number. The G * Power software was used to measure the statistical power of this study's analysis, as suggested by Cohen (1992).

G* Power software can be used to determine the minimum sample size needed in order to reject the null hypothesis. To determine the recommended sample size for multivariate analysis, researchers can use the rule of thumb G* Power (Hair et al. 2014). In this study, the input parameters have a moderate effect size (f2) of 0.15 and a power value of 0.95 with 4 predictors. Figure 5.5 (a priori analysis) indicates that the minimum sample size needed for this study is 129. However, the sample size collected was 167, which is not much more than the minimum requirement, and thus post hoc analysis was suggested. From the post hoc analysis, the obtained power was 0.987 probabilities, suggesting that the same result would be likely to reoccur in the same setting (see Figure 5.6). This justifies 167 as a sufficient sample size to execute regression and factor analysis.

Figure 5.5: G* Power- Sample size measurement

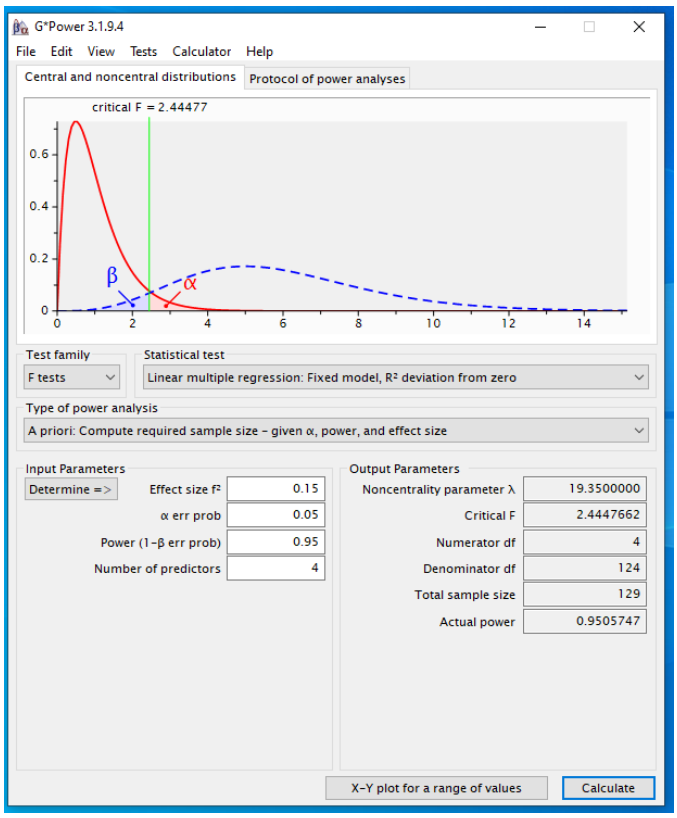
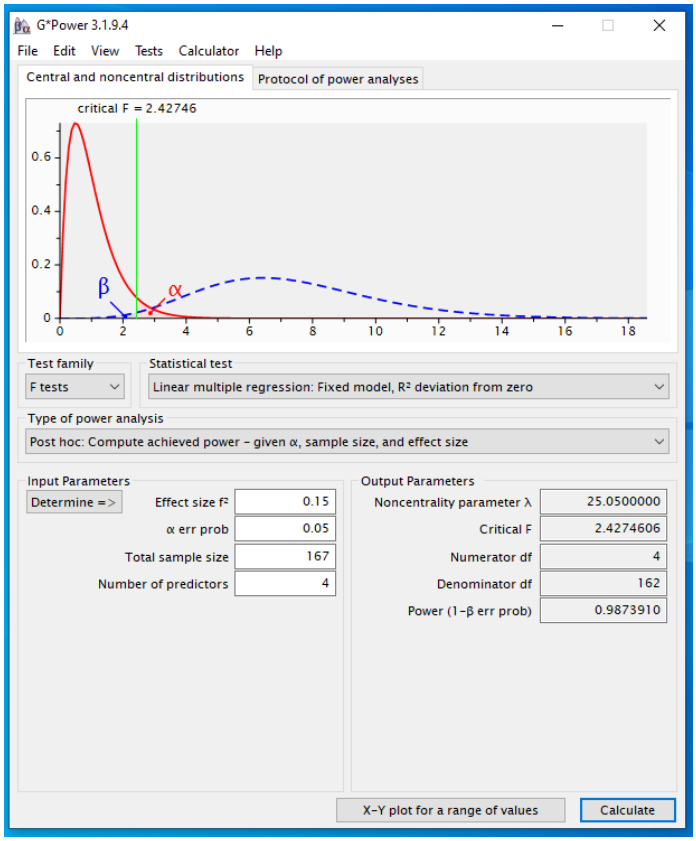


Figure 5.6: Post hoc analysis of G* Power- sample size measurement.



5.4.1.2 Demographic profile

Table 5.2 outlines an overview of the respondent's profiles, and highlights that nearly 35% of respondents are senior/ higher supervisors, nearly 15% are quality controllers and quality inspectors, closer to 10% are supervisors' subordinates, 9.5% are line managers, 8.3% are compliance assistance, and 7% are managers assistant within different sections of garment manufacturing factory. Therefore, the result shows that most of the respondents who answered the questionnaires are senior supervisors, who's key responsibilities involved maintaining discipline in a shop floor, such as line setting, machine selection, operator training, manpower requirement, target calculation, etc.

In response to the working areas/sections/departments, nearly 25% are working with the sewing section followed by nearly 19% in finishing, nearly 11% in human resource management/ compliance, nearly 10% in administration/IT, nearly 8% in cutting, 7% in quality assurance, and 5% in sample/ fabric selection. In relation to work experience in the manufacturing garment factory, nearly 39% of respondents have worked for 0 to 5 years, 5% have worked for 5 to 10 years, and 23% have worked for 11 to 15 years. The respondent's level of working experience demonstrates that they are aware of the challenges in the manufacturing industry, particularly from sustainable practices. Vice versa, only 4% of the respondents have worked for more than 20 years in a garment factory. Moreover, in relation to the level of education, the lower-level employees range from higher secondary to post-graduation, such as - 25.7% of respondents hold HSC (higher-secondary school certificate), 24.5% are graduates, and 23.9% are post-graduates. The job position of the respondents, the associated work sections, the level of education and the work experience therefore demonstrate that they are sufficiently knowledgeable to respond to the survey questionnaire.

	Observation	Percentage (%)
Job Position (working)		
Line manager	15	9.5
Quality controller/ inspector	25	15.5
Manager's assistant	12	7.1
Supervisor	51	30.5
Supervisor subordinate	17	10.1
Technician	7	4.1
Compliance officer/welfare officer	7	4.1
Floor manager	7	4.1
Compliance subordinate	14	8.3
Store In-Charge	5	3.5
Computer operator/ office assistant	7	4.1
Working department/ section		
Sample/ fiber selection	5	3.5
Cutting	13	7.7
Knitting	8	4.7
Dying	12	7.1
Sewing	41	24.5
Finishing	31	18.5
Quality assurance	12	7.1
HRM/ compliance	18	10.7
IT/ administration	15	9.5
Others (washing, packaging, storing, ETP maintains etc)	12	7.1
Working age (years)		
≤5	55	38.9
5 - 10	42	25.1
11 - 15	39	23.3
15 - 20	24	14.3
≤20	7	4.1
Level of education		
≥SSC	11	5.5
≤HSC	43	25.7
Graduate	41	24.5
Diploma	32	19.1
Postgraduate	40	23.9

Table 5.2: Respondent's profile

5.4.1.3 Organizational profile

In the context of the Bangladeshi garment industry, typically the varieties of garment production measure how broad the production line of an organisation is and, ultimately, the size of an organisation. Table 5.3 details on the product categories. Approximately 26% of respondents described that the garment factory basically produced various types of trousers and characterised them as medium size, while 13% of respondents described them as a large organisation, with denim fabric and garment production. In reference to ownership, the majority of the respondents, nearly 95%, recognised that the organisation is a domestic organisation and is run by a government association. Only 4% know that they are joint ventures, and those are foreign owned. These results are consistent with the industry statistics (Staritz, 2010) showed that most of the garment manufacturing organizations are Bangladeshi-owned firms. Another important identification is the dispersion of the location, according to BGMEA-Dhaka, Gazipur, Savar and Mymensingh have the highest number of garment factories in the country. Overall, the results of the organizational profile indicate that the respondent organizations represent the study population, and the garment shop floor employees of these factories can be seen as the most suitable respondents to address the questionnaire.

	Observation	**Percentage (%)**
Product category		
Trouser	44	26.3
Tee-shirt & polo shirt	37	22.1
Sweatshirts & joggers	14	8.3
Denim fabrics	22	13.1
Basic, tank top & others	15	8.9
All types of shirts	18	10.7
Kids wear	17	10.1
Business alliance		
Domestic/ National-owned	159	95.2
Joint venture	4	2.3
Foreign owned	4	2.3
Type of organization		
Garment manufacture	129	77.2

Garment & Textile manufacture	38	22.7
Geographical location		
Keoa	10	1.6
Shreepur	15	8.9
Valuka	16	9.5
Gazipur	17	10.1
Tongi	13	7.7
Khilket, Dhaka	16	9.5
Narayanganj	18	10.7
Kashimpur	15	8.9
Savar	18	10.7
Ashulia	16	9.5
Mymensingh	13	7.7

Table 5.3: Organizations' profile

5.4.1.4 Questionnaire items generations.

The focus of this section is on how respondents answered survey questions related to the construct of the research model (sustainable practices, SSCM practices, stakeholder decision, employee engagement, and firm performances). Table 5.4 presents the questionnaire items in terms of all the measures of the study. The responses to all the items were on a seven-point Likert scale in which 1= 'Strongly disagree' and 7 = 'Strongly agree'.

Construct	Items	Description
Sustainable practices (SP)	SP1	Factory maintains good sustainable practices
	SP2	Factory follows standards for sustainability (i.e., ISO 14001) quite
	SP3	Factory provides work-place safety training regularly.
	SP4	Factory ignores eco-friendly raw materials for production.
	SP5	Factory provides a standard living and regulated overtime wage for workers.
	SP6	Factory uses limited number of hazardous/harmful/toxic materials

	SP7	Factory efficiently consumes natural energy (i.e., use of sunlight, natural air).
	SP8	Factory neglects waste management
	SP9	Factory breaches health and safety standards (i.e., building fire safety) strictly.
	SP10	Factory doesn't use child labour.
	SP11	Factory discriminates amongst the workers.
	SP12	Factory has favorable employee initiatives (i.e., health care, insurance schemes
SSCM practices (SSCM)	SscmP1	Factory has a strong commitment to SSCM from managers.
	SscmP2	management is not familiar with other factory's knowledge and skills of SSCM.
	SscmP3	Management does not believe in gift giving as bribery between partners
	SscmP4	We have strong alliances with our supply chain partners.
	SscmP5	Supply chain partners help our factory to improve our network.
	SscmP6	Supply chain partners deliver sustainable audits for ensuring internal SSCM
	SscmP7	Supply chain partners encourage our factory to ensure a better work/life balance
	SscmP8	Supply chain partners maintain transparency within the SCM network
	SscmP9	Management introduces employee compliance and auditing systems with other factories
	SscmP10	Supply chain partners ensure that other factories do not use child labour.
	SscmP11	Supply chain partners pay their workers a living wage.
	SscmP12	Factory discriminates among the workers.
Stakeholder participation/ decision (SD)	ST1	We know who our stakeholders are.
	ST2	Factory has large number of stakeholders compared to most of our competitors
	ST3	Stakeholders have a direct influence on our operation
	ST4	Stakeholders are unfamiliar about our training schemes.
	ST5	Stakeholders have specific activities for community involvement and development.

	ST6	We feel peer pressure from our stakeholders to increase our working performance.
	ST7	We adjust our activities according to our stakeholders' demands.
	ST8	Our factory's regular culture to be productive all the seasons.
	ST9	We get extra monetary benefits for seasonal (i.e., pick up time) work.
	ST10	Governing bodies regularly check-up our work to ensure health and safety standards.
	ST11	Governing bodies regularly visit us to make us knowledgeable about new regulation
	ST12	We are unable to talk with supervisory bodies about our concerns.
Employee engagement (EE)	EE1	Participating strongly in our factory's growth and development.
	EE2	Management works for our empowerment.
	EE3	Management practices fair behavioural norms for everyone.
	EE4	Management provides constructive feedback on our performance.
	EE5	We feel liberal while do our work socializing.
	EE6	Management appreciates, encourages, and supports our psychological performance'.
	EE7	Working conditions are more satisfactory than our competitors
	EE8	Factory has little space in between our workstations.
	EE9	Managers provide positive feedback.
	EE10	We have a proactive attitude towards our work responsibilities.
	EE11	We feel a sense of pride in working there.
	EE12	We do not get enough help in our work, at peak time.
	EE13	Our motive is to increase our success along with our organizational prosperity.
	EE14	We feel pressure from other factories to increase our performance.
	EE15	Management has little mechanism for our empowerment.
	EE16	We feel stress while working there.
	EE17	We are solely responsible for our sustainability performance.
Firm performance (FP)	EnvP1	Factory is efficient in using resources (i.e., electricity).
	EnvP2	Factory is struggling in sustainable raw material consumption.
	EnvP3	Management is incompliant with current environmental laws.
	EnvP4	We are pleased with our factory's current environmental reputation.

Environmental Performance (EnvP), Economical Performance (EcoP), Social Performance (SocP)	EnvP5	We are pleased with our factory's environmental impact and risk to the general public.
	EnvP6	Factory can do better in terms of environmental sustainability.
	EcoP1	Factory shares a great part in producing our owners' equity.
	EcoP2	Factory provides a higher profit margin than other factories.
	EcoP3	Factory has a higher sales volume than the similar kind of other factories.
	EcoP4	Factory has a prestigious brand name among our other factories.
	EcoP5	Management is satisfied with our factory's market share.
	SocP1	We are pleased with management in terms of awareness on sustainability initiatives
	SocP2	Management is inattentive to our performance.
	SocP3	Management works with our union to create awareness and protection of worker rights
	SocP4	We are satisfied with management in terms of community involvement and development.
	SocP5	The total condition of our factory is favorable for sustainable development.

Table 5.4: Questionnaire items.

5.5 Preparation of data

Typically, statistical data preparation involves several preliminary evaluations to formulate data for assessing measurement and structural models. Data screening and cleaning are considered an important stage before proceeding with data analysis. The data cleaning process requires careful consideration, as it will significantly affect the final statistical results. The examination of data will provide critical insights into the data characteristics (Hair et al. 2010). To ensure the accuracy of the data entry process, a double-checking procedure was performed. The first step of the analysis involved validating all entries case-by-case, while the second step involved computing the descriptive statistics, maximum and minimum values, means, and standard deviations. Furthermore, to understand the properties of the data- missing data,

outliers, normality, common method variance, and social desirability bias were computed.

5.5.1 Assessment of Missing Data

In the survey, missing data occurs when respondents do not respond to one or more items in the questionnaire. As Cohen and Cohen (1983) suggested that missing data, up to 10%, may not cause any serious problems in relation to the interpretation of research findings, but the selection of a procedure to treat missing data depends on the pattern of missing data values. This argument is also supported by Hair et al. (2014), who highlighted that if the variables have missing data below 10%, then those missing values can be ignored without imputation. Furthermore, in the case of randomly distributed missing data, to improve data reliability, missing values should be removed. However, it is not advisable to remove missing data with a systematic pattern, as this may generate biased results.

Furthermore, the researchers showed multiple approaches to deal with the missing data. For example, deleting missing cases (Lee, Pandit, & Willis, 2013), setting zero to missing values (Richardson, Sloan, Soliman, & Tuna, 2005) or using both approaches to different variables (Bloomfield, Gerakos, & Kovrijnykh, 2017). To find missing data, this study applied SPSS version 27 software and found that there are no missing values for all variables. Therefore, all of the 167 responses collected can be considered for further analysis.

5.5.2 Assessment of Outliers

Outliers can result from several reasons, such as errors in data collection or entry, errors in sampling, motivated misreporting, and respondent intention. According to Garson (2012), outliers could be univariate or multivariate. Univariate outliers are data points with extreme values for a single variable. In this study, the variables were

measured by using a seven-point Likert scale ranging from ‘strongly disagree’ to ‘strongly agree’. Therefore, the answers of ‘strongly agree’ and 'strongly disagree', although they could cause extreme scale points, are not large concerns in this study.

There are several ways to detect outliers: by inspecting the scatter plots of standardised residuals or by examining Mahalanobis distance (d^2) statistics (Pallant 2011). Furthermore, Mahalanobis distance (d^2) statistics indicate the distance in standard deviation units between a set of scores (vector) for an individual case and the sample means for all variables (centroids) (Kline 2005). This study measured Mahalanobis for this study in AMOS and a few extreme observations were found. However, according to Stoimenova, Mateev and Dobreva (2006), observations with d^2 probabilities of 0.001 are not necessarily outliers, which can feature in the data distribution, and Hair et al. (2010) argued that even deleting outliers might improve the multivariate analysis but increase the risk of limiting generalisability. Hence, this study opted not to delete the outliers as the presence of a few outliers is not a major concern for the 167 samples, as suggested by Kline (2005).

5.5.3 Assessment of Normality

Normality examines whether the data are normally distributed across the sample and identifies excessively high or low values that can skew the overall result. According to Hair et al. (2010), deviation of data from normality may affect the interpretation of results. To comply with the regression procedure, an examination of data normality is required (Bai and Ng, 2005). The normality of the data is conducted by assessing the shape of the distribution or by observing the skewness and kurtosis values of the data at both univariate and multivariate levels. Skewness indicates the orientation of the distribution horizontally, that is, whether the data is distributed to the right, left, or center, whereas kurtosis indicates the peaks or flatness of the data compared to a normal distribution. According to Hair et al. (2010), if skewness and kurtosis are zero, then the data are perfectly normal, while any deviation from zero can indicate that the

data are not normally distributed. Data are considered normal if the range of skewness is within +1 to –1 and kurtosis +3 to -3 (Lewis-Beck, Bryman & Liao 2004).

The results of the normality test are shown in Table 5.5, which shows that the skewness values of a few items fall beyond the rigorous value range of +1 to - 1 (Lewis-Beck, Bryman & Liao, 2004). As many statistical tests, including regression, analysis of variance, and t-tests are not very sensitive to skewed data (Hair et al., 2014), it might be best to ignore them. Therefore, the skewed distribution would not influence the overall findings of the study.

	Mean	**Std. Deviation**	**Skewness**	**Kurtosis**
SP1	6.54	0.953	-3.236	12.871
SP2	6.46	0.938	-2.042	4.137
SP3	6.53	1.156	-3.463	12.820
SP4	4.20	2.568	-0.164	-1.743
SP5	6.46	1.255	-3.193	10.422
SP6	3.61	2.329	0.179	-1.566
SP7	5.43	2.226	-1.114	-0.386
SP8	6.01	1.757	-1.954	2.725
SP9	3.28	2.687	0.536	-1.598
SP10	5.60	2.365	-1.330	-0.094
SP11	2.67	2.306	1.063	-0.545
SP12	5.99	1.727	-1.916	2.754
SscmP1	5.87	1.474	-1.628	2.584
SscmP2	3.77	6.043	10.254	119.337
SscmP3	5.14	6.216	9.776	113.688
SscmP4	5.81	1.419	-1.278	1.276
SscmP5	6.01	1.316	-1.636	2.713
SscmP6	6.28	1.206	-2.369	6.348
SscmP7	6.37	0.934	-2.190	6.215
SscmP8	6.14	1.091	-1.740	3.959
SscmP9	5.69	1.661	-1.443	1.447
SscmP10	5.48	1.988	-1.181	0.087
SscmP11	5.73	1.635	-1.332	1.078

SscmP12	3.17	2.628	0.587	-1.511
ST1	5.42	1.789	-0.966	0.046
ST2	5.28	1.762	-0.908	-0.023
ST3	5.06	1.947	-0.870	-0.313
ST4	3.59	2.280	0.302	-1.352
ST5	6.03	1.421	-2.178	4.792
ST6	5.96	1.580	-1.944	3.278
ST7	6.38	5.931	11.131	133.629
ST8	5.77	1.744	-1.590	1.530
ST9	5.10	2.267	-0.853	-0.820
ST10	5.95	1.645	-2.012	3.256
ST11	6.10	1.411	-2.113	4.396
ST12	3.45	2.510	0.385	-1.569
EE1	5.41	1.681	-0.989	0.380
EE2	5.77	1.877	-1.529	1.048
EE3	6.02	1.416	-1.672	2.236
EE4	6.18	1.302	-2.175	4.732
EE5	6.12	1.311	-2.279	5.804
EE6	6.35	1.128	-2.409	6.927
EE7	5.95	1.650	-1.898	2.811
EE8	2.92	2.226	0.864	-0.806
EE9	5.96	1.586	-1.802	2.643
EE10	6.17	1.383	-2.234	5.092
EE11	6.38	1.258	-2.760	7.938
EE12	3.29	2.351	0.532	-1.368
EE13	6.21	1.368	-2.384	5.586
EE14	5.43	1.940	-1.162	0.114
EE15	3.46	2.360	0.456	-1.405
EE16	2.84	2.229	0.890	-0.739
EE17	5.31	1.978	-.999	-0.214
EnvP1	5.43	1.941	-1.207	0.249
EnvP2	4.19	2.275	-.135	-1.456
EnvP3	3.49	2.395	0.368	-1.486
EnvP4	5.96	1.500	-1.769	2.597
EnvP5	4.60	2.299	-.560	-1.271
EnvP6	6.21	1.172	-2.140	5.444

EcoP1	6.09	1.138	-1.404	1.948
EcoP2	5.75	1.532	-1.299	1.243
EcoP3	5.86	1.461	-1.494	2.066
EcoP4	6.39	1.175	-2.860	9.059
EcoP5	5.88	1.478	-1.567	2.190
SocP1	5.97	1.623	-1.928	3.046
SocP2	2.69	2.220	1.025	-0.535
SocP3	5.83	1.733	-1.759	2.125
SocP4	6.22	1.188	-1.696	2.330
SocP5	6.24	1.161	-1.766	2.741

Table 5.5: Descriptive statistics of all items.

5.5.4 Assessment of common method variance and social desirability bias.

Common method variance and social desirability bias have become important issues that influence the quality of survey data. Common method variance can be defined as "variance that is attributable to the measurement method rather than to the constructs the measure represent" (Podsakoff et al. 2003, p.879), whereas social desirability bias refers to the tendency of respondents to choose responses they believe are more socially desirable rather than choosing responses that are reflective of their own thoughts (Grimm 2010).

The self-reported nature of surveys may result in certain problems, such as common method variance, which lead to incorrect conclusions about the relationships between variables by inflating or deflating the findings (Craighead et al. 2011). This method of variance is considered a problem since it constitutes one of the main causes of measurement error. This issue is escalated when both the dependent and independent constructs are perpetual measures and are responded to by the same participants (Chang, Van Witteloostuijn & Eden 2010). Social desirability bias may exist when data are collected in the presence of the researcher and the respondents try to 'please' the researcher by providing acceptable responses (Grimm 2010).

Conway and Lance (2010) offer guidelines to overcome the problem of common-method variance and social desirability bias: i) to ensure validity, questions must be asked to respondents with relevant backgrounds; and ii) both the researchers and the respondents must sit at a fair distance apart in order to give the respondents space to fill in the questionnaire. For this study, both characteristics were observed, as the demographic profile (table 5.2 and 5.3) provided evidence of the relevance of the respondents to the study and a gatekeeper was involved between the researcher and the respondents, which was quite evident to be somewhat distant.

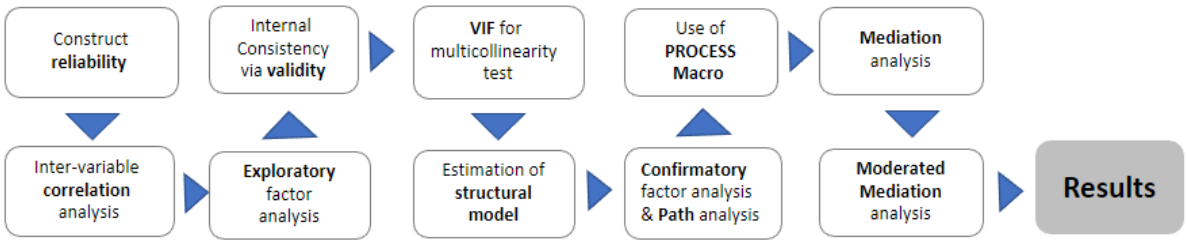
Additionally, both priori and posterior procedures were used to minimise and measure variance in this study. First, to minimise the effects of consistency in the questionnaire, items related to the independent variable were measured, followed by the dependent variables. Then, the presence of bias was tested in a posteriori analysis using Harman's one-factor test (Podsakoff et al., 2003). The results reveal that thirty factors emerge with the first factor, explaining 26.6 per cent of the overall variance. Since the first factor does not account for most of the variance (<50%), this indicates that the data is not affected by common method variance and social desirability bias (Harman 1967).

5.6 Data analysis using PROCESS Macro.

In this section, the conceptual framework is analysed with the PROCESS Macro analytical tool. It includes two main parts: evaluating the variables and assessing the hypothesised relationship path analysis. The results were analysed using the PROCESS Macro software programme with maximum likelihood estimation. To do so, this study followed five steps: step 1: construct reliability; step 2: inter-variable correlation analysis; step 3: exploratory factor analysis; step 4: internal consistency via validity; step 5: variance inflation factor for multi coloniality test; step 6: estimation of structural model (i.e., confirmatory factor analysis and path analysis to analyze the relationship between variables; finally step 8 involved with the use of PROCESS Macro to identify the capability of employee engagement mediates the effect of firm

performance. Subsequently, the moderated mediation effects of whether firm performance has been affected by SSCM practices and the role of employee engagement have been tested to explore the model further. A sequential demonstration was given in Figure 5.7.

Figure 5.7: Sequence of demonstrated analyses.



5.6.1 Assessment of construct Reliability

Reliability is the measure of the internal uniformity of the construct in the study. Reliability refers to the consistency of the measure of a concept (Bryman and Bell, 2011). Cronbach's alpha is one of the most common techniques used to test the internal reliability of multiple indicator constructs when factor analysis is used (Hair et al., 2014; Bryman and Bell, 2011). In this study, Cronbach's alpha was used to assess the reliability of scales, since it measures the internal reliability of a scale. In general, researchers agree that the Cronbach alpha value should be above .70 (Hair et al., 2010). However, according to Nunnally and Bernstein (1994), Cronbach's alpha is sensitive to the number of items in a construct. For example, the value of Cronbach's alpha can increase when the number of items for measuring a construct increases, even with the same degree of inter-correlation (Nunnally and Bernstein, 1994). Therefore, Cronbach's alpha value of 0.70 (Hair et al., 2014) or 0.60 (Nunnally and Bernstein, 1994) can be acceptable, especially in exploratory research or for constructs with a small number of indicators (Hair et al., 2010; Grafton et al., 2010; Cortina, 1993). Table 5.6 shows the results of Cronbach's alpha for all constructs in this study.

The results showed that all the constructs except the 'sustainability practices (SP) and the SSCM practices (SSCM) showed a score greater than 0.7, indicating the high reliability of all the constructs. Surprisingly, 10 items from SP, 4 items from SSCM, 1 item from ST, and 2 items from FP were reduced due to the very low Cronbach alpha. However, even though two items of SP and SSCM practices have Cronbach's alpha values of 0.694 and 0.684, Nunnally and Bernstein (1994) noted that Cronbach's alpha value could be low when a construct has a small number of items as a function of multidimensionality. This low reliability may negatively affect the validity of the measurement. However, measurement error does not necessarily result in attenuated correlations between variables (Nunnally and Bernstein, 1994). Therefore, two items from SP and eight items from SSCM were retained in this study.

Constructs	**Number of items**	**Mean**	**SD**	**Cronbach Alpha**
SP (sustainable practices)	SP11	3.22	2.665	0.694
	SP12	2.71	2.320	
SSCM (SSCM practices)	SscmP1	5.87	1.470	0.684
	SscmP4	5.92	1.355	
	SscmP5	6.04	1.212	
	SscmP6	6.24	1.243	
	SscmP7	6.34	0.948	
	SscmP8	6.14	1.038	
	SscmP9	5.65	1.694	
	SscmP11	5.76	1.561	
SD (Stakeholder decision)	ST1	5.53	1.723	0.713
	ST2	5.28	1.795	
	ST3	5.14	1.919	
	ST5	6.04	1.481	
	ST6	5.92	1.661	
	ST8	5.77	1.743	
	ST9	5.11	2.237	
	ST10	5.95	1.709	
	ST11	6.19	1.257	
	EE1	5.50	1.688	0.722

	EE2	5.75	1.900	
	EE3	6.01	1.374	
	EE4	6.14	1.274	
	EE5	6.10	1.222	
	EE6	6.31	1.121	
	EE7	5.93	1.668	
	EE8	2.80	2.155	
EE (employee engagement)	EE9	6.00	1.530	
	EE10	6.22	1.241	
	EE11	6.36	1.299	
	EE12	3.23	2.322	
	EE13	6.27	1.196	
	EE14	5.26	2.006	
	EE15	3.49	2.320	
	EE16	2.95	2.245	
	EE17	5.00	1.010	
	EnvP3	6.01	1.447	0.722
	EnvP4	6.03	1.256	
	EnvP5	6.11	1.301	
	EnvP6	6.13	1.119	
	EcoP1	5.78	1.479	
	EcoP2	5.88	1.445	
FM (firm performance)	EcoP3	6.32	1.003	
	EcoP4	6.42	1.120	
	EcoP5	6.00	1.390	
	SocP1	6.13	1.453	
	SocP2	2.76	2.260	
	SocP3	5.78	1.794	
	SocP4	6.38	1.006	
	SocP5	6.39	0.981	

Table 5.6: Reliability assessment for final list of variables.

5.6.2 Inter-variable correlation analysis

This section highlighted the measurement of the correlation of the variables using the Pearson product correlation technique. To be more specific, the focus was on the inter-variable relationship between quantitative variables, denoted as the correlation analysis. The analysis was also used to describe the strength and direction of the linear relationship between two variables. Specifically, there are two types of statistics that help to understand the relationship of variables, depending on the level of measurement and the nature of the primary data; (i) Pearson's product-moment correlation coefficient, denoted by ‘r’ and (ii) Spearman correlation procedures, denoted by 'rho' (Gotz, Liehr-Gobbers, and Krafft 2010).

For this study, Pearson ‘*r*’ has used, which is designed for both interval level (continuous) and dichotomous variables, and the correlation is expressed in the form of a coefficient. The results are typical values ranging from –1 to +1, called efficient values. Typically, a coefficient of +1 indicates that two variables are perfectly related in a positive linear manner, whereas a coefficient of -1 indicates that two variables are perfectly related in a negative linear manner, and a correlation coefficient of 0 indicates that there is no linear relationship between the variables. However, the value itself provides an indication of the strength of the relationship. Furthermore, a perfect correlation of +1 or –1 indicates that the value of one variable can be determined exactly by knowing the value of the other variable. And for a correlation of 0, this indicates that knowing the value of one of the variables does not provide any assistance in predicting the value of the second variable. To continue, each of the constructs and their relationship with the associative items have been investigated further.

	SP9	SP11
SP9	1	
SP11	0.088	1

** Correlation is significant at the 0.01 level (2- tailed)

Table 5.7: Construct 1, SP (stainable practices)

In Table 5.7 although Pearson product correlation of the SP construct's items was significant, but the result is found unfavorable (0.088). Moreover, due to the lack of sufficient additional items, the relationship cannot be measured in further calculations.

	SscmP1	SscmP4	SscmP5	SscmP6	SscmP7	SscmP8	SscmP9	SscmP10	SscmP11
SscmP1	1								
SscmP4	.143	1							
SscmP5	.279	.308	1						
SscmP6	.218	.287	. 264	1					
SscmP7	.110	.044	. 322	. 148	1				
SscmP8	.206	. 109	. 231	. 161	. 441	1			
SscmP9	.088	. 068	. 290	. 070	. 365	. 123	1		
SscmP10	.009	. 167	. 242	. 015	. 181	. 116	. 341	1	
SscmP11	.066	. 241	. 253	. 273	. 238	. 220	. 280	. 114	1

** Correlation is significant at the 0.01 level (2- tailed)

Table 5.8: Construct 2, SSCM (SSCM practices)

In Table 5.8, the 'r' values are below 0.5 for all items, which means there are significant relationships among SscmP items. Furthermore, all 9 items showed significant at p≤ 0.01, which indicated these constructs have proceed for further analyses.

	ST1	ST2	ST3	ST5	ST6	ST8	ST9	ST10	ST11
ST1	1								
ST2	. 373	1							
ST3	. 180	. 194	1						
ST5	. 308	. 201	. 185	1					
ST6	. 161	. 289	. 090	. 323	1				
ST8	. 309	. 268	. 123	. 135	. 046	1			

ST9	. 124	. 247	. 270	. 260	. 261	. 170	1		
ST10	. 149	. 081	. 148	. 036	. 326	. 170	. 392	1	
ST11	. 258	. 155	. 168	. 314	. 356	. 270	. 330	. 242	1

** Correlation is significant at the 0.01 level (2- tailed)

Table 5.9: Construct 3, ST (Stakeholder decision)

In table 5.9, the ‘r’ values are below than 0.5 for all items, which means there are a significant relationships among ST items. Furthermore, as all 9 items showed significant at the p≤ 0.01, which indicated these items have proceeded for further analyses.

	EE1	EE2	EE3	EE4	EE5	EE6	EE7	EE8	EE9	EE10	EE11	EE12	EE13	EE14	EE15	EE16	EE17
EE1	1																
EE2	. 415	1															
EE3	. 199		1														
EE4	. 170	. 592	. 419	1													
EE5	. 209	. 436	. 302	. 526	1												
EE6	. 156	. 361	. 253	. 506	. 384	1											
EE7	. 235	. 168	. 192	. 093	. 358	. 225	1										
EE8	. 098	. 052	. 013	. 046	. 022	. 037	. 284	1									
EE9	. 030	. 126	. 187	. 236	. 319	. 275	. 052	. 065	1								
EE10	. 022	. 031	. 056	. 103	. 192	. 396	. 093	. 042	. 471	1							
EE11	. 027	. 146	. 124	. 175	. 192	. 272	. 401	. 211	. 208	. 208	1						
EE12	. 034	. 090	. 149	. 013	. 105	. 094	. 033	. 457	. 030	. 024	. 227	1					
EE13	. 039	. 182	. 215	. 260	. 336	. 341	. 135	. 207	. 368	. 320	. 384	. 327	1				
EE14	. 023	. 197	. 153	. 256	. 477	. 211	. 116	. 089	. 184	. 182	. 031	. 085	. 227	1			
EE15	. 020	. 088	. 071	. 057	. 026	. 112	. 124	. 300	. 025	. 026	. 144	. 513	. 200	. 062	1		
EE16	. 003	. 009	. 007	. 022	.065	. 086	. 016	. 323	. 065	. 024	. 238	. 351	. 149	. 067	. 396	1	
EE17	. 174	. 137	. 130	. 252	. 206	. 244	. 096	. 167	. 198	. 095	. 024	. 158	. 072	. 256	. 152	.099	1

** Correlation is significant at the 0.01 level (2- tailed)

Table 5.10: Construct 4, EE (employee engagement)

Consequently, in table 5.10 that result supported that the EE items have a relatively positive relationship, and the ‘r’ values have been below 0.5 for all items, except EE4 (0.592) and EE5 (0.526). As both items were below 0.6, a decision has been made to keep them for the time being and it is necessary to check the relationship of the factors in the next stage.

	EnvP3	EnvP4	EnvP5	EnvP6	EcoP1	EcoP2	EcoP3	EcoP4	EcoP5	SocP1	SocP2	SocP3	SocP4	SocP5
EnvP3	1													
EnvP4	.310	1												
EnvP5	.076	.181	1											
EnvP6	.281	.243	.221	1										
EcoP1	.239	.337	.185	.224	1									
EcoP2	.377	.326	.085	.281	.326	1								
EcoP3	.307	.328	.050	.337	.424	.256	1							
EcoP4	.207	.330	.079	.221	.447	.326	.333	1						
EcoP5	.194	.079	.235	.321	.126	.302	.170	.207	1					
SocP1	.395	.137	.144	.082	.071	.380	.098	.227	.083	1				
SocP2	.006	.070	.181	.012	.108	.070	.016	.099	.076	.207	1			
SocP3	.270	.028	.042	.243	.167	.333	.256	.126	.308	.144	.036	1		
SocP4	.348	.271	.071	.099	.239	.377	.314	.384	.235	.390	.394	.348	1	
SocP5	.395	.310	.076	.117	.190	.402	.307	.367	.194	.395	.006	.270	.916	1

** Correlation is significant at the 0.01 level (2- tailed)

Table 5.11: Construct 5, FP (firm performance)

Consequently, the result in Table 5.11 supported that the items have a relatively positive relationship, and the ‘r’ values have been below 0.5 for all items, except SocP5 (0.916). Similarly, to the EE construct, a decision has been made to keep SocP for the time being and a check on the relationship of the factors in the next stage is needed. It

is also important to note that the Pearson correlation does not provide any information about cause and effect and does not speak of the influence one variable has over the other (Hair et al., 2014).

5.6.3 Exploratory Factor Analysis (EFA)

This section is undertaken to evaluate the measurement model by employing factor analysis to assess the validity, reliability, and unidimensionality of the measures. The popular choice of factor analysis is used as a data reduction technique and represents primary data in different components/ factors (Byrne, 2010). For this study's analysis, the factor analysis was used to investigate whether a number of variables of interest are related to a smaller number of unobservable factors. This is done by grouping variables based on intercorrelation among sets of variables. The focus was also given on determining the base of commonality among these variables, such as- how well do the items go well together in an individual construct. Hence then, a decision has been made to use factor analysis to summarize the underlying factors which also support our measurement model. Specifically, to check whether the data in theory stand true in practice based on the data we have collected.

According to Hair et al. (2014), this analysis can be used to confirm a prior established theory or to identify data patterns and relationships. Specifically, the relationships are confirmatory when testing the hypotheses of existing theories and concepts and exploratory when they search for latent patterns in the data in case there is no or only little prior knowledge on how the variables are related. For the data analysis, the researcher used exploratory factor analysis to search for relationships (i.e., variables with high correlations are grouped together) between the variables in an effort to reduce a large number of variables to a smaller set of composite factors (i.e., a combination of variables). When reporting, the final set of composite factors will give a result of exploring relationships in our data and the relationship, where they are found (if any).

For factor analysis, this study will use Kaiser-Meyer-Olkin (**KMO**) to measure sampling adequacy, which will examine the appropriateness of factors and **Bartlett's test of Sphericity** to examine the variables that are uncorrelated. Specifically, the **proportion of variance** (P value, from 0.5 -1) will be checked to indicate the appropriateness of the factors, whereas a low value (below 0.5) indicates the inappropriateness of the factor. Furthermore, a significant result (Sig ≤ 0.05) will indicate the variables are related enough to perform a meaningful analysis. To check commonality, the amount of variance a variable shares with all other variables being considered (Hair et al., 2010) whereas small values indicate variables that do not fit well with the factor solution and should possibly be dropped from the analysis. As a result, the values less than 0.5 will be removed to move forward for the next stage calculations. Hence froward, the Eigenvalues (eigenvalues over 1) and factor loadings of this study will be cross checked to select the factors for further study. Besides, the checked **Eigenvalues** (eigenvalues over 1) and **factor loadings** will help to select the associated factors for further study.

After following the above-mentioned criterions for SP construct, Table 5.12 showed based on the Eigenvalues, only 1 component extracted, so the solution of SP construct can't be rotated further. Whereas, for SSCM construct- 2 component extracted (Table 5.13), for SD construct- 2 component extracted (Table 5.14), for EE construct- 4 component extracted (Table 5.15), and for FP construct- 4 component extracted (Table 5.16).

Factor analysis for sustainability practices (null variables)		
	Round 1	Round 2
KMO	0.500	
Bartlett's test of Sphericity	1.585	
Eigenvalues	1 component extracted (1.101)	Only one component
P-value	.208	was extracted. This
Nonredundant residuals	1(100%)	solution cannot be
Items removes at end	SP11	rotated.
	SP12	
Result	Void	

Table 5.12: Construct 1, SP (stainable practices)

Factor analysis for SSCM practices (moderator variables)		
	Round 1	Round 2
KMO	0.700	0.739
Bartlett's test of Sphericity	172.549	185.258
Eigenvalues	2 components extracted (2.640, 1.235)	
P-value	≤.001	≤.001
Nonredundant residuals	15(71%)	17 (60%)
Items removes at end	SscmP2 SscmP3	SscmP10
Result	Component 1: SscmP1, SscmP4, SscmP5, SscmP6 Component 2: SscmP7, SscmP8, SscmP9, SscmP11	

Table 5.13: Construct 2, SSCM (SSCM practices)

Factor analysis for stakeholder decision (independent variables)			
	Round 1	Round 2	Round 3
KMO	0.694	0.672	0.629
Bartlett's test of Sphericity	187.803	174.232	137.282
Eigenvalues	2 components extracted (2.811, 1.223)		
P-value	≤.001	≤.001	≤.001
Nonredundant residuals	23 (63%)	19 (67%)	15 (71%)
Items removes at end	ST3	ST11	ST4 ST7
Result	Component 1: ST1, ST2, ST5, ST8 Component 2: ST6, ST9, ST10		

Table 5.14: Construct 3, SD (Stakeholder decision)

Factor analysis for employee engagement (mediator variables)				
	Round 1	Round 2	Round 3	Round 4
KMO	0.721	0.739	0.751	0.710
Bartlett's test of Sphericity	626.163	555.058	534.554	451.796
Eigenvalues	5 components extracted (4.294, 2.511,	4 components extracted	4 components extracted	4 components extracted

	1.386, 1.218, 1.1462)	(4.125, 1.212, 1.206, 1.011)	(2.294, 1.281, 1.052, 1.300)	(1.264, 1.421, 1.676)
P-value	≤.001	≤.001	≤.001	≤.001
Nonredundant residuals	64 (47%)	63 (52%)	59 (56%)	39 (50%)
Items removes at end	EE5	EE17	EE5	
Result	Component 1: EE1, EE2, EE3, EE4 Component 2: EE6, EE9, EE10, EE11, EE13 Component 3: EE8, EE12, EE15, EE16 Component 4: EE14			

Table 5.15: Construct 4, EE (Employee engagement)

EFA result for Firm Performance (dependent variables)		
	Round 1	Round 2
KMO	0.708	0.698
Bartlett's test of Sphericity	533.560	507.158
Eigenvalues	4 components extracted (4.132, 1.749, 1.456, 1.134)	
P-value	≤.001	≤.001
Nonredundant residuals	46(50%)	41(52%)
Items removes at end	Ecop5	None
Result	Component 1: SocP1, SocP3, SocP4, SocP5 Component 2: EcoP1, EcoP3, EcoP4, EnvP4 Component 3: EnvP5, EnvP6 Component 4: EnvP3, SocP2	

Table 5.16: Construct 5, FP (firm performance)

To proceed further, this study also used **Varimax Rotation with Kaiser Normalization** to minimize the number of variables with extreme loadings (high or low) on a factor. To summarise, the principal component method of EFA has been used for data extraction and data reduction; and a new set of factors have been created depending on the KMO, the proportion of variance, eigenvalues and varimax rotation with Kaiser normalization. Particularly, from reproduced correlation, the

Nonredundant residuals have been used to justify the model fit indices (less than 0.50). Furthermore, factor loadings have also been used from the factor matrix, to validate the research model; and AVE, composite reliability, and convergent reliability have also been used to justify the reliability of the measurement.

In conclusion of this section, all EFA was performed using a principal component analysis and varimax rotation. The minimum factor loading criteria was set to 0.50. The commonality of the scale, which indicates the amount of variance in each dimension, was also assessed to ensure acceptable levels of explanation. The results show that all commonalities were greater than 0.50.

An important step involved weighing the overall significance of the correlation matrix through Bartlett's test of Sphericity, which provides a measure of the statistical probability that the correlation matrix had a significant correlation among some of its components. All the constructs' results were significant, **X^2(n= 167) = Bartlett's test of Sphericity (p ≤.001)** which indicates the suitability for factor analysis. The Kaiser-Meyer-Olkin (**KMO**) measures of sampling (MSA) adequacy (see KMO results of all constructs) also indicates the appropriateness of the data for factor analysis. In this regard, data with MSA values above 0.600 are considered appropriate for factor analysis (Hair et al. 2014; Boudreau and Gefen 2004). Finally, the factor solution derived from this analysis yields 12 factors for the scale, which accounted for more than 50% of the variation in the data.

5.6.4 Assessment of internal consistency through Validity.

Internal consistency can be determined by the Cronbach alpha value or by composite reliability. Cronbach's alpha evaluates the degree to which the indicators measure the unidimensionality of a construct (Gotz, Liehr-Gobblers & Krafft 2010). A low alpha value represents the multidimensionality of the constructs. In our study, in the FP construct, there are two groups of items (i.e., EnvP5 & EnvP6, EnvP3 & SocP) that have an alpha value of 0.387 and 0.489 (see table 5.17), which are lower than the

value of 0.70 (Hair et al., 2014) or 0.60 (Nunnally and Bernstein, 1994). Nunnally and Bernstein (1994) noted that Cronbach's alpha value could be low when a construct has a small number of items as a function of multidimensionality. Note that both the groups have only two items, which can be acceptable, especially in exploratory research or for constructs with a small number of indicators (Hair et al., 2014; Grafton et al., 2010; Cortina, 1993). Furthermore, compared to composite reliability, Cronbach's alpha estimate reliability with lower bound values (Hair et al. 2012). Therefore, in this study, the researcher used composite reliability underlined by indicator outer loadings in order to report an accurate measure of internal consistency (Fornell & Larcker, 1981).

Component	Items	Factor Loadings	AVE	Composite reliability	Cronbach's alpha
	SscmP1	0.525	0.417	0.736969	0.602
	SscmP4	0.758			
	SscmP5	0.574			
SSCM	SscmP6	0.699			
(SSCM	SscmP7	0.853	0.465	0.772247	0.601
practices)	SscmP8	0.611			
	SscmP9	0.648			
	SscmP11	0.582			
	ST1	0.797	0.454	0.766251	0.600
	ST2	0.674			
	ST5	0.604			
SD	ST8	0.601			
(Stakeholder	ST6	0.633	0.519	0.654608	0.582
decision)	ST9	0.727			
	ST10	0.792			
	EE1	0.662	0.523	0.811658	
	EE2	0.866			
	EE3	0.596			
	EE4	0.742			

	EE6	0.555	0.337	0.739369	0.704
EE	EE9	0.653			
(Employee	EE10	0.798			
engagement)	EE11	0.558			
	EE13	0.631			
	EE8	0.694	0.530	0.817837	0.707
	EE12	0.772			
	EE15	0.758			
	EE16	0.690			
	EE14	0.841	-	-	
	SocP1	0.629	0.553052	0.828	0.680
	SocP3	0.567			
	SocP4	0.877			
	SocP5	0.869			
FP (Firm	EcoP1	0.731	0.484988	0.790	0.686
performance)	EcoP3	0.680			
	EcoP4	0.732			
	EnvP4	0.714			
	EnvP5	0.798	0.576082	0.482	0.387
	EnvP6	0.693			
	EnvP3	0.762	0.561914	0.440	0.489
	SocP2	0.752			

Table 5.17: Psychometric properties of the constructs.

To determine the indicator reliability, factor loadings of the items were measured. Factor loadings observed through Cronbach's alpha measure the correlation between the observed indicator variables. To achieve the reliability of the item of 0.5, a loading value of 0.707 is required (Hulland 1999). Several researchers (Hair, Ringle, & Sarstedt 2011; Peng & Lai 2012) have used the item loadings of 0.7 as a cut-off value for reliable indicators and deleted items with less factor loadings. However, if an item loading is between 0.5 and 0.7 and it does not affect the reliability of the construct, then the item is retained for further analysis (Hair et al. 2014; Ringle and Sarstedt 2011). In this study, all factor loadings are counted for the next step of the analysis.

In regard to **Composite reliability, it** presents the degree to which indicators measure a latent construct (Ringle and Sarstedt 2011). Composite reliability values may range from 0 to 1, and values closer to 1 indicate a higher level of reliability (Ringle, Wende & Will 2005; Hair, Ringle & Sarstedt 2011; Hair et al., 2014). According to Nunnally & Bernstein (1994), a composite reliability value between 0.50 and 0.90 is considered acceptable. In this study, the majority of the constructs have good composite reliability, ranging from 0.654 to 0.827 (see Table 5.17), demonstrating that issues related to internal consistency were not present in this study. The next consideration involved constructing the validity of the measurement model. To evaluate the validity of the construct, this study examined both the convergent validity and the discriminant validity.

For **convergent validity,** it is evident when each measurement item correlates strongly with its theoretically intended construct (Gefen & Straub, 2005). According to Hair et al. (2014), convergent validity is established when two or more items of the same construct are positively correlated. In this study, average variance extracted (AVE) was used to examine the convergent validity of the constructs (Fornell & Larcker 1981; Hair et al. 2014). AVE shows the average variance shared between constructs and their measures, relative to the amount of measurement error (Hulland 1999; Chin 2010). Fornell & Larcker (1981) suggested that when the AVE value is at least or nearly 0.5, convergent validity can be achieved. In this study, the majority of items were close to the threshold, except for 1 group from SSCM (i.e., 0.417067) and 1 group from EE (i.e., 0.33652). This view also goes with the previous argument of multidimensionality (Nunnally and Bernstein, 1994), which explained that the value could be low when a construct has a small number of items.

Regarding discriminant validity, while convergent validity requires a positive correlation between different items that measure the same thing; discriminant validity requires that there is no correlation between items that measure different things (Hair et al., 2014). According to Fornell and Larcker (1981), the AVE value of the variables should be greater than the squared correlation of that variable with any other variables in the model. Moreover, the discriminant validity can also be examined by comparing

the square root of AVE of the correlation between variables in the model (Hair et al., 2014). This study measured divergent validity through the square root of the AVE. Table 5.18 showed that all the AVE values are higher than any of the other correlations among the variables. Therefore, this result showed that the variables are different, and it confirmed the discriminant validity of the measurement scale, indicating that convergent validity is ensured (Fornell and Larcker, 1981).

	SSCM1	SSCM2	SI1	SI2	MV1	MV2	MV3	MV4	DV1	DV2	DV3	DV4
SSCM1	**.645**											
SSCM2	.396**	**.681**										
SI1	.396**	.191*	**.673**									
SI2	.223*	.291**	.000	**.720**								
MV1	.333**	.275**	.318**	.320**	**.723**							
MV2	.215*	0.115	.171	.132	.000	**.580**						
MV3	0.116	0.140	.193*	-.120	.000	0.00	**.728**					
MV4	.395**	.212*	.182	.332**	.000	0.00	0.000	0.000				
DV1	.342**	.348**	.218*	.389**	.320**	0.074	-.141	.333**	**.909**			
DV2	.600**	-0.003	.396**	0.149	.297**	.369**	.203	.270**	0.00	**.888**		
DV3	0.145	0.028	.078	-.051	.023	-.043	.346**	0.126	0.00	.000	**.694**	
DV4	.265**	-0.023	.044	0.018	.068	-.049	0.032	-.011	0.00	.000	.000	**.663**

Table 5.18: Correlations among the variables with AVE

Thus far, this study has covered the reliability and validity of selected variables of constructs. For measuring reliability, Cronbach's alpha was considered, which is a traditional approach, and the values are considered acceptable if they are between 0.7 and 0.6 (Kline, 2000). However, a major criticism with coefficient alpha is regarded as the positive relationship with the number of scale items; that is, increasing the number of the scale items could drive a higher value of Cronbach's alpha (Hair et al., 2010). Therefore, AVE and composite reliability are taken into account to measure the homogeneity and internal consistency of the constructs (Koufteros, 1999). For validity, the convergent and discriminate validity of the variables was considered for further analysis.

5.6.4.1. A significant consideration

Significant consideration is made about the EE14 **item** validity measurement**,** which has a higher factor loading of 0.841. In data analysis, a critical argument is often undertaken by the researchers that for Structural Equation Modelling (SEM) researchers often considered the relationships of the constructs, more specifically focusing on covariance explanation or prediction, depending on the theory treatment (confirmatory or exploratory), sample size availability, data types, construct types, and construct-item relationship etc (Hair et al., 2014). Item EE14 represents 'disruptions', which is a vital element for SSCM practices in the garment industry context. From a theoretical treatment perspective, EE14 represents an important outcome of 'peer pressure' and has a critical connection to **supply chain disruption** to SSCM practices, which also came across as an internal hindering force for SSCM practices in the garment industry (see Figure 4.4). The crux of the matter is that shop floor employees are often perceived 'peer pressure' as an obstacle to the compliance initiative (Chowdhary et al., 2014). From the construct perspective, both sample size and factor loading are important here, as researchers often showed that an indicator with an outer loading of 0.4 to 0.7 may also be retained. As Hair et al. (2014) suggested that construct indicator reduction involved data checking both with the AVE and Composite reliability, if these two measurements does not increase the values either of the two, then retain the indicator (Hair et al., 2014).

Both arguments supported the inclusion of EE14. In particular, Matsunaga (2010) argued that a single item construct may cause identification and convergence problems in covariance-based SEM, but this is not a problem in Ordinary List Square (OLS). As the final motive is to identify the moderated mediation relationships between constructs, a decision has been made to keep EE14 for mediation and moderation analysis.

5.6.5 Variance Inflation Factor (VIF) for multicollinearity test

Until now, the data analyses confirmed that the measurement of the constructs is reliable and valid; the next step is addressing the assessment of the structural model. Typically, the structural model coefficient for the relationship between constructs is derived from estimating a series of regression equations. However, the strong correlation between each set of components could create bias in point estimation and also in standard errors (Saratedt and Mooi., 2019). As a result, the structural model regression needs to be examined for potential multicollinearity issues.

Multicollinearity refers to the degree to which a variable can be predicted or accounted for by other variables in the conceptual model (Hair et al. 2012). In the context of formative indicators, multicollinearity is undesirable, as the two constructs may be measuring the same construct (Andreev et al. 2009; Bagozzi & Yi 2012). This also occurs when the correlations among the constructs are high. Similarly, multicollinearity is undesirable for formative constructs, as it distorts indicator weights and can cause bootstrap standard errors that trigger type II errors (Hair et al. 2012).

In order to address multicollinearity issues, the process is quite similar to assessing formative measurement models. Yet in regression analysis, the constructs scores of the predictor constructs in each regression are used to calculate the **variance inflation factor values (VIF)**. VIF indicates how much of an indicator's variance is explained by the other indicators of the same construct (Urbach & Ahlemann, 2010). In this study, IBM SPSS Statistics 27 was used to assess multicollinearity. VIF values greater than 5 are indicative of the probable collinearity issue among predictor constructs, but collinearity can also occur at lower VIF values of 3-5 (Becker et al., 2015). This study used a linear regression option with formative dependent and independent variables to calculate the VIF (Andreev et al., 2009). A rule of thumb states that a VIF greater than ten denotes a harmful level of multicollinearity (Henseler, Ringle & Sinkovics 2009). Specifically, Hair (2014) suggests that a VIF above 5.00 and tolerance values below 0.20 in the predictor constructs imply high collinearity.

Dependent variables	Other variables	Tolerance value	VIF	Significance level	Result
DV1	SSCM1	0.699	1.431	< 0.001	Significant
	SSCM2	0.861	1.161		
	SD1	0.736	1.359		
	SD2	0.817	1.224		
	MV1	0.999	1.001	< 0.001	Significant
	MV2	0.997	1.003		
	MV3	0.997	1.003		
	MV4	0.995	1.005		
DV2	SSCM1	0.699	1.431	< 0.001	Significant
	SSCM2	0.861	1.161		
	SD1	0.736	1.359		
	SD2	0.817	1.224		
	MV1	0.999	1.001	< 0.001	Significant
	MV2	0.997	1.003		
	MV3	0.997	1.003		
	MV4	0.995	1.005		
DV3	SSCM1	0.699	1.431	0.240	Although p value is insignificant, but VIF is in the range between 1 to 5.
	SSCM2	0.861	1.161		
	SD1	0.736	1.359		
	SD2	0.817	1.224		
	MV1	0.999	1.001	< 0.001	Significant
	MV2	0.997	1.003		
	MV3	0.997	1.003		
	MV4	0.995	1.005		
DV4	SSCM1	0.699	1.431	0.081	Although p value is insignificant, but VIF is in the range between 1 to 5.
	SSCM2	0.861	1.161		
	SD1	0.736	1.359		
	SD2	0.817	1.224		
	MV1	0.999	1.001	< 0.001	Significant
	MV2	0.997	1.003		
	MV3	0.997	1.003		

MV4	0.995	1.005

Table 5.19: Multicollinearity for the dependent variables.

As Hair (2014) suggests, the value for VIF starts at 1 and has no upper limit and the interpretation of VIFs are as follows: (i) a value of 1 indicates there is no correlation between a given predictor variable and any other predictor variables in the model; (ii) a value between 1 and 5 indicates a moderate correlation between a given predictor variable and other predictor variables in the model, but this is often not severe enough to require attention. And finally, (iii) a value greater than 5 indicates a potentially severe correlation between a given predictor variable and other predictor variables in the model. In this study, the coefficient estimates and p-values in the regression output are likely unreliable. In this study, from Table 5.19, none of the VIF values are clearly below the threshold of 5 and all the tolerance values are greater than 0.20. It can be concluded that multicollinearity among dependent variables is likely not a critical issue in the structural model, and the analyses can continue to examine the model with the extracted variables in the next stage.

5.6.6 Estimation of structural model

This section used both CFA and Path analysis using AMOS 27 statistical software to develop a basic structure model to focus on examining the relationships between constructs. To be particular, it is essential to understand how independent (stakeholder decisions), mediator (employee engagement) and moderator (sustainable practices) construct influence the dependent variables (firm performances), beforehand of mediation and moderated mediation analysis. Through CFA and Path analysis, this section assesses only the relationships between constructs, as the measurement of the individual items has already been provided in previous sections.

5.6.6.1 Confirmatory Factor Analysis (CFA)

CFA is a statistical formula, which typically used to test how effectively measurable variables represent specific constructs (Collins and Hussy, 2014). For this study, the results for the CFAs of individual constructs- stakeholder decision, sustainable practices, employee engagement, and firm performance-have been used as the basis for measuring the regression relationships among constructs and testing the hypotheses of the basic mediation and moderated mediation model.

5.6.6.1.a CFA results for SSCM practices

A structural equation model generated through AMOS was used to test the relationships. A good fitting model is expected if the value of the CMIN/df < 5, the goodness-of-fit (GFI) indices (Hair et al., 2014); the Tucker and Lewis (1973) index (TLI); the Confirmatory fit index (CFI) (Bentler, 1990) is > 0.90 (Hair et al., 2014). Furthermore, an adequate-fitting model was expected if the AMOS computed value of the standardized root mean square residual (RMR) < 0.05, and the root mean square error approximation (RMSEA) is between 0.05 and 0.08 (Hair et al., 2014). This study emphasized the individual construct's model fit indices and results for validity and reliability, by measuring convergent validity through the square root of AVE and composite reliability.

Relationship	**Standardized estimates**	**Standard Error**	**T- value**	**Composite reliability**	**AVE**	**√AVE**	**P - Value**
SscmP6 -> SSCM practices1	.435						
SscmP5 -> SSCM practices1	.720	.488	3.690				***
SscmP4 -> SSCM practices1	.423	.352	3.247				.001
SscmP1 -> SSCM practices1	.373	.345	3.022	0.8915	0.25642	0.50638	.003
SscmP11 -> SSCM practices2	.489						
SscmP9 -> SSCM practices2	.467	.255	3.808				***
SscmP8 -> SSCM practices2	.545	.176	4.207				***
SscmP7 -> SSCM practices2	.737	.191	4.518	0.8523	0.32435	0.56951	***
R- square							
SSCM practices1 <--> SSCM practices2		0.609					

Model fit
CMIN/df = 1.661, the goodness-of-fit (GFI) = 0.908, TLI = 0.826, CFI = 0.908, RMSEA = 0.063

Table 5.20: CFA results for SSCM practices.

The fit indices for the model shown in Table 5.20 fell within the acceptable range. The square multiple correlation was 0.609 for sustainable practices. This showed a 60% variance in sustainable practices accounted for by SSCM practices- i.e., commitment of management and environmental regulation partners, and also strongly supported by the internal factory's compliance and auditing system. The researcher also assessed the impact of enforcement for SSCM practices1 (i.e., audit, alliance, network, and commitment) on SSCM practices2 (i.e., a living wage, compliance, transparency, and encouragement) for maintaining productive shop floor performance in the factory premises.

The impact of environmental audit on enforcement/ SSCM practices1 was positive, but insignificant ($\beta = 0.435$), hence the relationship was not supported. For the impact network management on positive enforcement was positive and significant ($\beta = 0.720$, and $p < 0.001$, hence the relationship was supported. The impact of alliances on enforcement was positive but nearly significant ($\beta = 0.423$, and $p = 0.001$), therefore the relationship was also supported. But for the commitment, the relationship was positive but insignificant ($\beta = 0.373$, and $p = 0.003$), so the relationship was not supported.

For SSCM practices2, except for the living wage ($\beta = 0.489$) all other relationships such as compliance ($\beta = 0.467$, and $p < 0.001$); transparency ($\beta = 0.545$, and $p < 0.001$) and encouragement ($\beta = 0.737$, and $p < 0.001$) was positive and significant, therefore the relationships were supported. The fit indices (CMIN/df=1.661, CFI=0.908, TLI=0.826, and RMSEA=0.063) indicated that the measurement model has achieved a fairly good fit to the data. The t values are substantive and statistically significant, and the reliability was achieved with the composite reliability 0.8 (>0.7). For convergent validity, both results for the square root of AVE (0.5063 and 0.5695) have achieved the threshold, i.e., at least or nearly 0.50 (Fornell & Larcker 1981).

5.6.6.1.b CFA results for Employee Engagement

Relationship	Standardized estimates	Standard Error	T- value	Composite reliability	AVE	√AVE	P - Value
EE4 -> Employee Engagement1	.720						
EE3 -> Employee Engagement1	.581	.141	6.218				***
EE2 -> Employee Engagement1	.818	.226	7.235	0.353507	0.41852	0.64693	***
EE1 -> Employee Engagement1	.386	.167	4.155				***
EE11 -> Employee Engagement2	.480						
EE10 -> Employee Engagement2	.545	.298	4.207				***
EE9 -> Employee Engagement2	.538	.337	4.187	0.191114	0.322754	0.568114	***
EE6 -> Employee Engagement2	.614	.256	4.481				***
EE13 -> Employee Engagement2	.648	.322	4.548				***
EE16 -> Employee Engagement3	.514						
EE15 -> Employee Engagement3	.649	.266	5.033				***
EE12 -> Employee Engagement3	.783	.308	5.215	0.277646	0.405847	0.637061	***
EE8 -> Employee Engagement3	.570	.235	4.707				***
R- square							
Employee Engagement1 <--> Employee Engagement3			0.470				
Employee Engagement3 <--> Employee Engagement1			0.057				
Employee Engagement3 <--> Employee Engagement2			0.325				
Model fit							
CMIN/df = 1.750, the goodness-of-fit (GFI) = 0.810, TLI = 0.832, CFI = 0.886, RMSEA = 0.067							

Table 5.21: CFA results for employee engagement.

The fit indices for the model shown in Table 5.21 fell within the acceptable range. Square multiple correlations between Employee Engagement1 (i.e., feedback, positive behavioural norms, empowerment, and growth) and Employee Engagement3 ((i.e., stress, lower mechanism, lack of support, and congested workstation) were 0.470; between Employee Engagement3 and Employee Engagement1 was 0.057 and between Employee Engagement3 and Employee Engagement2 (i.e., sense of pride, proactive attitude, positive emotion, appreciation, and motivation) was 0.325. These showed that 47% of employee engagement was highly related to positive association from management, 32% related to the prescient outlook of shop floor employees, and only 5% of shop floor engagement was motivated by negative reinforcement.

Regarding the impact of individual variable EE2 (feedback), EE3 (positive behavioral norms) and EE1 (growth) on Employee Engagement1 were positive (β are 0.581, 0.818 and 0.386 with $p < 0.001$) and significant, except EE4 (feedback- β = 0.720). In terms of the Employee Engagement2- EE10 (proactive attitude), EE9 (positive emotions), EE6 (appreciation), and EE13 (motivation) were positive and significant (β values are 0.545, 0.538, 0.614, 0.648 and $p < 0.001$), except EE11 (sense of pride- β = 0.480). For Employee Engagement3- EE15 (lower mechanism), EE12 (lack of support) and EE8 (congested workstation) are positive and significant (β values are 0.649, 0.783, 0.570 and $p < 0.001$), except EE16 (stress- β = 0.514). These revealed that among the negative reinforcement, some variables are more emphasized than stress management on employee engagement.

The fit indices (CMIN/df=1.750, GFI = 0.810, CFI=0.886, TLI=0.832, and RMSEA=0.067) indicated that the measurement model has achieved a good fit with the data. The t-values are substantive and statistically significant, but there is a consideration for reliabilities where the composite reliabilities (0.353, 0.191 and 0.277) are below the threshold (>0.7) but for convergent validity, the results for the square root of AVE (0.646, 0.568 and 0.637) have achieved the threshold, i.e., at least or nearly 0.50 (Fornell & Larcker 1981). This might have been a cause for having a smaller sample size, we will discuss a little bit more regarding this at the end of this section.

5.6.6.1.c CFA results for Firm Performance

Relationship	Standardized estimates	Standard Error	T- value	Composite reliability	AVE	√AVE	P - Value
SocP5 -> Firm Performance1	.927						
SocP4 -> Firm Performance1	.987	.063	17.133				***
SocP3 -> Firm Performance1	.350	.127	4.469	0.295365	0.527416	0.726234	***
SocP1 -> Firm Performance1	.392	.116	5.096				***
EnvP4 -> Firm Performance2	.490						
EcoP4 -> Firm Performance2	.707	.242	4.658				***
EcoP3 -> Firm Performance2	.534	.256	4.170	0.182801	0.656201	0.810062	***
EcoP1 -> Firm Performance2	.536	.198	4.188				***

EnvP6 -> Firm Performance3	.813						
EnvP5 -> Firm Performance3	.246	.633	.938	0.111284	0.360743	0.600618	.348
SocP2 -> Firm Performance4	.160						
EnvP3 -> Firm Performance4	2.069	74.433	.188	0.716517	2.153181	1.467371	.851
R- square							
Firm Performance1 <--> Firm Performance2		0.532					
Firm Performance1 <--> Firm Performance3		0.130					
Firm Performance4 <--> Firm Performance1		0.020					
Firm Performance2 <--> Firm Performance3		0.365					
Firm Performance4 <--> Firm Performance3		0.056					
Firm Performance4 <--> Firm Performance2		0.107					
Model fit							
CMIN/df = 1.5127, the goodness-of-fit (GFI) = 0.874, TLI = 0.914, CFI = 0.947, RMSEA = 0.056							

Table 5.22: CFA results for firm performance

The fit indices for the model shown in Table 5.22 fell within the acceptable range. The square multiple correlations between Firm Performance1 (i.e., factory's circumstances, community development, awareness, initiatives) and Firm Performance2 (i.e., reputation, brand image, sales volume, owner's equity) is 0.532, and between Firm Performance1 and Firm Performance3 (i.e., better ecosystem and environmental impact on public) is 0.130. Similarly, between Firm Performance4 (i.e., inattentive and noncompliance) and Firm Performance1 is 0.020; between Firm Performance2 and Firm Performance3 is 0.365; between Firm Performance4 and Firm Performance3 is 0.056 and between Firm Performance4 and Firm Performance2 is 0.107. These showed that the positive performance of the factory depends on the sustainable activities of the premises, such as - 53% of the Firm Performance2 is highly dependable on Firm performance1 whereas 10% of Firm Performance4 result from negligence from management. Another important notification is 36% of environmental impact (Firm Performance3) actually depends on the positive image of the factory (Firm Performance2). There is only a 5% relevancy between environmental impact (Firm Performance3) and negligence from management (Firm Performance4). These depicted that the shop floor employees actually have limited control over the environmental consequence of sustainable practices rather better engagement can be possible in social sustainable practices.

Regarding the impact of individual variables on Firm Performance1- SocP5(factory circumstance), SocP4 (community involvement), SocP3(awareness) and SocP1(initiatives) are positive (β are 0.927, 0.987, 0.350 and 0.392 with $p < 0.001$) and significant. In terms of the Firm Performance2 - EnvP4 construct Firm Performance2 - EnvP4 (reputation), EcoP4 (brand image), EcoP2(sales volume) and EcoP1(owner's equity) are positive (β are 0.490, 0.707, 0.534 and 0.536 with $p < 0.001$) and significant. As well as the construct Firm Performance3 – EnvP6(better ecosystem) and EnvP5(environmental impact on the public) are positive (β values are 0. 813 and 0.246) but insignificant ($p = 0.348$). This revealed that among environmental practices, relationships are not supported. Similarly, for Firm Performance4- the relationships with SocP2(inattentive) and EnvP3(noncompliance) are positive (β values are 0.160 and 2.069) but insignificant ($p = 0.851$) which is also not supported.

The fit indices (CMIN/df=1.512, GFI = 0.874, CFI=0.886, TLI=0.914, and RMSEA=0.056) indicated that the measurement model has achieved a good fit with the data. The t-values are substantive and statistically significant, but there is a consideration for reliabilities where the composite reliabilities (0.295, 0.182 and 0.111) except Firm Performance4 (0.716), which are within that threshold (>0.7). For convergent validity, the results for the square root of AVE (0.726, 0.810, 0.600 and 1.467) have achieved the threshold (at least or nearly 0.50).

5.6.6.2 Path analysis

Typically, a path analysis examines the structural relationships between composite variables, a variable that is measured using different items of the scales. To create the composite variables for each construct, this section created four new composite variables from the mean values of the combined factors represented for each construct. For instance, to create a new composite variable for SSCM practices, the mean values of both construct SSCM1 and SSCM2 factors were combined. Table 5.23 shows the new composite variables. A common feature of path analysis is that the

standardized weights were reported to compare the strength of the relationships between variables.

Independent variables (Stakeholder decisions)	**Moderator variables** (SSCM practices)	**Mediator variables** (Employee engagement)	**Dependent variables** (Firm performance)
SD1: ST1, ST2, ST5, ST8	SSCM1: SscmP1, SscmP4, SscmP5, SscmP6	MD1: EE1, EE2, EE3, EE4	DV1: SocP1, SocP3, SocP4, SocP5
SD2: ST6, ST9 ST10	SSCM2: SscmP7, SscmP8, SscmP9, SscmP11	MD2: EE6, EE9, EE10, EE11, EE13	DV2: EcoP1, EcoP3, EcoP4, EnvP4
		MD3: EE8, EE12, EE15, EE16	DV3: EnvP5, EnvP6
		MD4: EE14	DV4: EnvP3, SocP2
CVIV= SD1 + SD2	CVM1= SSCM1 + SSCM2	CVM2= MD1 + MD2 + MD3+ MD4	CVDV = DV1+ DV2 + DV3 + DV4

Table 5.23: Newly created composite variables.

	Relationship	**Standardized estimates**	**Standard Error**	**T-value**	**Composite reliability**	**AVE**	**√AVE**	**P - Value**
Path a	Stakeholder decisions -> Employee engagement	0.256	0.028	0.346				0.312
Path b	Employee engagement -> Firm performance	0.115	0.058	1.982	0.022491	0.02736	0.16542	***
Path c	Stakeholder decisions -> Firm performance	0.066	0.069	0.343				0.463
Path d	Employee engagement -> Stakeholder decisions -> Firm performance	0.025	0.789	0.985				***
Path e	SSCM practices -> Firm performance	0.254	0.059	4.289				***
Path f	SSCM practices -> Stakeholder decisions	0.568	0.280	0.0235				0.343
Path g	SSCM practices -> Stakeholder decisions -> Firm performance	0.356	0.658	0.0234				0.276

Path h	SSCM practices -> Stakeholder decisions -> Employee engagement	0.185	0.058	0.0365	***
	R- square				
	Firm performance	0.360			
	Model fit				
	CMIN/df = 2.262, the goodness-of-fit (GFI) = 0.981, TLI = 0.948, CFI = 0.958, RMSEA = 0.06				

Table 5.24: CFA results among newly created variables

The fit indices for the model shown in Table 5.24 fell within the acceptable range. The square multiple correlation was 0.360 for firm performance, this shows that 36% variance in firm performance accounted for stakeholder decisions, employee engagement and sustainable practices.

This section also assessed the impact of stakeholder decisions, employee engagement, and sustainable practices on organisational firm performances. In case of **Path a,** the impact of stakeholder decisions on employee engagement was positive but insignificant (β = 0.256, and p = 0.312) and the relationship is not supported, whereas **Path b**, the impact of employee engagement on firm performance was positive and significant (β = 0.115, and p < 0.001), hence the relationship was supported. Similarly, for **Path C**, the impact of stakeholder decisions on firm performance was positive but insignificant (β = 0.066, and p = 0.463), hence the relationship is not supported. Hence then, in **Path d** the impact of employee engagement on firm performance through stakeholder decisions was positive and significant (β = 0.025, and p < 0.001), thus the relationship is supported. For **Path e**, the impact of SSCM practices on stakeholder decisions was positive and significant (β = 0.254, and p < 0.001), hence the relationship was supported. Both **Path f** and **Path g** were positive but insignificant, (β = 0.568; 0.356, and p = 0.343; 0.276). Henceforth, relationships are not supported. To end, **Path h,** the impact of SSCM practices on employee engagement through stakeholder decisions was positive and significant (β = 0.185, and p < 0.001). Thus, the relationship is supported. The fit indices (CMIN/df=2.262, GFI = 0.981, CFI=0.958, TLI=0.948, and RMSEA=0.06) indicated that the measurement model has achieved a good fit with the data. The t-values are substantive and statistically significant, and reliability was not achieved with

the composite reliability 0.8 (>0.7). For convergent validity is also critical here (the square root of AVE is 0.16542).

In summary, CFA is a statistical procedure used when researchers have a well-developed theory underlying the measurement model. When reporting the goodness of fit of a measurement model, both Hair et al. (2014) and Collins and Hussy (2014) suggested that including one absolute fit index and one incremental index, apart from the Chi-square value and the degree of freedom. In this study, the normed Chi-square (X2/df), GFI and RMSEA were reported as absolute fit indices, and the CFI and TLI were reported as incremental fit indices. The evaluation of the measurement model was conducted in two stages (CFA results for individual construct and path analysis). Overall factor loadings (Table 5.24) are very strong, indicating that the measured constructs were well explained by the research questions. Referring to composite reliability and divergent validity, most have shown acceptable value with a few unacceptable thresholds. This is because of having a smaller sample size.

Nevertheless, the main goal is to identify- how/ whether employee engagement could mediate the relationship between stakeholder decision and firm performance, which can be achieved through the Ordinary List Square (OLS) algorithm. A path weighting scheme is used to set the inner weight option to conduct an OLS algorithm with a maximum number of 5000 iterations via PROCESS Macro (Hayes., 2022). Particularly, in comparison to the factorial and centroid weighting schemes, the path weighting scheme is recommended for use because it takes into account the direction of relationships specified in our basic conceptual model (Vinzi, Trinchera & Amato 2010). Subsequently, Table 5.25 and 5.26 shows the final variable and constructs list for further analysis.

Dependent variables	Mediator variables	Moderator variables	Independent variables
DV1: SocP1, SocP3, SocP4, SocP5	MD1: EE1, EE2, EE3, EE4	SSCM1: SscmP1, SscmP4, SscmP5, SscmP6	SD1: ST1, ST2, ST5, ST8
DV2: EcoP1, EcoP3, EcoP4, EnvP4	MD2: EE6, EE9, EE10, EE11, EE13	SSCM2: SscmP7, SscmP8, SscmP9, SscmP11	SD2: ST6, ST9, ST10
DV3: EnvP5, EnvP6	MD3: EE8, EE12, EE15, EE16		
DV4: EnvP3, SocP2	MD4: EE14		

Table 5.25: Final list of assessed variables.

DV1 **(social performance)**	SocP1- awareness, SocP3- community development, SocP4- expansion, SocP5-factory's circumstances.
DV2 **(economical performance)**	EcoP1- owner's equity, EcoP3- sales volume, EcoP4- brand image, EnvP4- reputation
DV3 **(environmental performance)**	EnvP5 - environmental impact on public, EnvP6 - better ecosystem
DV4 (**SC disruptions**)	EnvP3- noncompliance, SocP2- inattentive
MD1 (**conferment practices**)	EE1- growth, EE2- empowerment, EE3- positive behavioral norms, EE4 -feedback
MD2 (**ardent practices**)	EE6- appreciation, EE9- positive emotion, EE10- proactive attitude, EE11- sense of pride, EE13-motivation
MD3 (**contrivance practices**)	EE8- congested workstation, EE12- lack of support, EE15- lower mechanism, EE16-stress.
MD4 (**encumbrance practice**s)	EE14- peer pressure
SSCM1 (**strategical practices**)	SscmP1- commitment, SscmP4- network, SscmP5- alliance, SscmP6-audit.
SSCM2 (**compliance-based practices**)	SscmP7- encouragement, SscmP8- skill, SscmP9- compliance, SscmP11- quality management.
SD1 (**positive reinforcement**)	ST1- familiarity, ST2- large number, ST5- development activities, ST8- culture

SD2 (**coercive pressure**)	ST6- force from stakeholders, ST9-preodic gain, ST10-inspection

Table 5.26: List of constructs (i.e., represents both SSCM forces as well as performances).

Table 5.26 summarised the SSCM practices and performances identified by the lower level of the garment employee. Particularly, several firm performances are identified that are perceived as result from shopfloor's sustainable practices. For instance, social performances are related to awareness, community development, expansion and factory's circumstances, while economic performance are related to owner's equity, sales volume, brand image, and factory's reputation. In response to environmental performances, environmental impact on public and better ecosystem are considered more significant. However, garment employees also perceived non-compliance and inattention from the top management level as the pivotal reason for SC disruptions. These identifications are inconsistent with previous contextual research (Chowdhury et al., 2016) which suggested that other disruptions occurred as a form of either technological impedance or other non-collaboration of SC partners, such as retail buyer inspection. One possible explanation is that this may be due to the nature of the respondents of quantitative study, who basically involved with garment shopfloors operational activities rather than decision-making.

Turning to the factory's mediating variables, which influence garment shopfloor's sustainable practices through employee engagement are quite varied. For example, conferment practices (i.e., growth, empowerment, positive behavioural norms, and feedback) and ardent practices (i.e., appreciation, positive emotion, proactive attitude, sense of pride, and motivation) are positive sustainable practices which are supportive for better firm performances, whereas contrivance practices (i.e., congested workstation, lack of support, lower mechanism, and stress) and encumbrance practices (i.e., peer pressure) are considered as hinderance for better firm performances.

Nevertheless, in regard to internal SSCM practices, lower-level of employee perceived two types of SSCM practices are important for firm performances. First is being strategical practices (i.e., commitment, network, alliance, and audit) and second, compliance-based practices (i.e., encouragement, skill, compliance, and quality management). Finally, to moderate the variables of stakeholder decisions, practices such as positive reinforcement (i.e., familiarity, large number, development activities and culture) and factory coercive pressure (i.e., influence from stakeholders, periodic monetary gain, and regular inspection) are significant for successful firm performance. A detailed discussion will be proposed in Chapter 6.

5.6.8 Use of PROCESS Macro

Hayes, (2022) PROCESS Macro, often named as conditional process analysis, is a modelling strategy undertaken with the goal of describing the conditional or contingent nature of the mechanism by which a variable transmits its effect on another and testing hypotheses about such contingent effects. Specifically, mediation analysis is used to quantify and examine the direct and indirect pathways through which an antecedent variable transmits its effect on a consequent variable. As this study, is interested in describing the mediation relationships between stakeholder decisions and firm performance, where employee engagement acted as a mediator. Moderation analysis is a melding of two ideas conceptually and analytically, to examine how the effect of an antecedent reflecting on a consequent depends on a third moderator interaction. Specifically, this study is interested in identifying the moderating effects of whether firm performance has been affected by SSCM practices and the roles of employee engagement in firm performance.

PROCESS is an observed variable OLS and logistic regression path analysis modelling tool. Researchers of social science, business, and health science often use the PROCESS Macro tool for estimating direct and indirect effects. Particularly, in single and multiple mediator models, where two- and three-way interaction are involved along with simple slopes and regions. PROCESS Macro could estimate the significance conditional indirect effects in moderated mediation models with a single

or multiple mediators or moderators (Hayes, 2022). For this study, with Process Macro in SPSS 24 gave the liberty to calculate the multiple mediators between stakeholder decisions and firm performance. The role of PROCESS Macro is primarily to identify the indirect effect of mediation and moderated moderation analysis.

5.6.8.1 Mediation analysis (serial mediation-model 6)

This section highlighted the mediation analysis of- 'which' way employee engagement could mediate the relationship between stakeholder decision and firm performance. To do so, serial mediation hypothesizes a causal chain linking the mediators. For this study, stakeholder decisions mediate the relationships between EE and organizational firm performance. PROCESS procedure for SPSS version 24, 2022 (Hayes, 2022) has been used as the statistical tool to analyze the mediation relationships between the variables. PROCESS analysis has the luxury of invoking a powerful bootstrapping method to test the statistical significance of indirect effects in mediation models (Prajogo et al., 2021). The basic requirement for a significant indirect effect is that the 95% confidence intervals (*c*) do not contain zero (with 5000 bootstrapping resamples) (Hayes, 2022). Figure 5.8 is the statistical diagram of the basic mediation model (please check Figure 5.2).

Figure 5.8: Statistical model for mediation analysis, model 6 (adapted from Hayes, 2022)

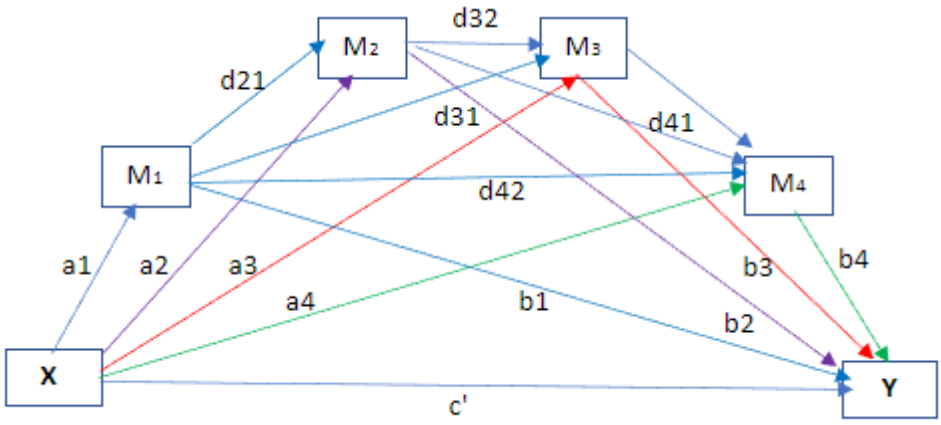


Figure 5.8 depicted a serial multiple mediator model with four mediators representing 11 distinct effects of X on Y, ten indirect and one direct. The ten indirect paths are found by tracing every possible way of getting from X to Y through at least one M. The possibilities include four passing through only a single mediator (X → M1 → Y; X → M2 → Y; X → M3 → Y; X → M4 → Y), three passing through two mediators in serial (X → M1 → M2→Y; X → M1 → M3→Y; X → M1→ M4→Y), two passing through two mediators in serial (X → M2 → M3→Y; X → M2 → M4→Y), and one through all four mediators in serial (X → M1 → M2→M3 → M4→Y). The direct effect does not pass through any mediators. The five equations (i.e., one for each of the variables) representing the four-mediator. So, the serial multiple mediator model represent:

$$M1 = iM1 + a1X + eM1$$

$$M2 = iM2 + a2X + eM2$$

$$M3 = iM3 + a3X + eM3$$

$$M4 = iM4 + a4X + eM4 + d21\ M1 + d31M2 + b41M3 + eM4$$

Direct effect X on Y = c'

Total effect X on Y: total indirect effect + direct effect

Total effect $c = c' + a1b1 + a2b2 + a3b3 + a4b4 + a1d21b2 + a1d31b3 + a1d42b4 + a2d32b3 + a2d41b4 + a3d41b4 + a1d21d32d41b4$

Indirect effect: $c - c' = a1b1 + a2b2 + a3b3 + a4b4 + a1d21b2 + a1d31b3 + a1d42b4 + a2d32b3 + a2d41b4 + a3d41b4 + a1d21d32d41b4$

5.6.8.2 Results

In this section, the table 5.27 presented the regression results of the serial mediation analysis.

	DV1 Social performance		DV2 Economic performance		DV3 Environmental performance		DV4 SSCM disruptions	
Regression results	Coefficient	SE	Coefficient	SE	Coefficient	SE	Coefficient	SE
SD1	-0.0434	0.1305	0.0341	0.1074	0.0390	0.2976	0.0903	0.1367
SD2	0.2585	0.1171	0.0183	0.1041	0.8030	0.1272	-0.0684	0.1326
MD1	0.2028	0.1213	0.2320	0.1000	-0.0150	0.1221	0.0836	0.1273
MD2	0.0363	0.1084	0.2702	0.0885	-0.0503	0.1081	-0.0268	0.1127
MD3	-0.1062	0.1111	0.1995	0.0907	0.3118	0.1108	0.0202	0.1170
MD4	0.2305	0.1171	0.2164	0.0919	0.1870	0.1122	0.0143	0.1326
R-Square	0.2768***		0.3557*		0.1365***		0.0185**	
F value	0.7961		7.1754		2.0542		0.2454	

Direct effect analysis	Direct effect	SE	95% confidence interval LLCI	ULCI
SD→ social performance	-0.0040	0.1203	-0.2435	0.2356
SD → economic performance	0.2152	0.1074	0.0014	0.4290
SD → environmental performance	0.0390	0.1312	-0.2221	0.3001
SD → disruptions	0.0903	0.1367	-0.1819	0.3625

Bootstrapping analysis	**Indirect effect**	Boot SE	95% Boot confidence interval LLCI	ULCI
SD → Employee engagement → social performances (H1a)	0.0684	0.0730	-0.0674	0.2199
SD → Employee engagement → economic performances (H1b)	0.1894	0.0639	0.0649	0.3187
SD → Employee engagement → environmental performances (H1c)	0.0663	0.0594	-0.0466	0.1878
SD → Employee engagement → disruptions (H1c)	0.0249	0.0601	-0.0936	0.1472

Notes: *p < 0.10, **p < 0.05, ***p < 0.001, SE = standard error, LLCI = lower level of confidence interval, ULCI = upper level of confidence interval.

Table 5.27: Serial mediation analysis, model

All the hypotheses (see 2.7.4 and 2.7.5 of Chapter 2) H1a, H1b, H1c and H1d posit that employee engagement mediates the effect of stakeholder decisions on (i) social performance, (ii) economic performance, (iii) environmental performance and (iv) SC disruptions. Because these hypotheses focus on stakeholder decisions (i.e., SD1 and SD2) mediation effect. By followed Hayes's (2022) guidelines this study, employed ‘model 6’ of PROCESS Macro to test the statistical model. The results of the step-by-step analysis are presented in table 5.27. The model summary provides a summary of the model with R, R-square, F statistics, and P values for the overall model. The model summary for each outcome variable is also presented.

The result shows (see Table 5.27) that stakeholder decisions (i.e., SD1 and SD2) are positively associated with social performance (β values are -0.0434, 0.2585; standard errors are 0.1305, 0.1171 and p- value is insignificant for SD1 and significant for SD2 P ≤ 0.001); economic performance (β values are 0.0341, 0.0183; standard errors are 0.1074, 0.1041 and p ≤ 0.001); environmental performance (β values are 0.0390, 0.8030; standard errors are 0.2976, 0.1272 and p ≤ 0.001) and for SC disruptions (β values are 0.0903, -0.0684; standard errors are 0.1367, 0.1326 and p is significant for SD1, but insignificant for SD2). These results provide initial evidence to this study’s hypotheses that employee engagement partially mediates the effect of stakeholder decisions.

Additionally, 5000 resamples were bootstrapped to test the significance of the direct and indirect effects of stakeholder decisions on firm performance and employee engagement. The results showed that the direct effects of stakeholder decision on social performance (direct effect –0.0040, SE = 0.1203, 95% Boot confidence interval: -0.2435-0.2356) is insignificant; on economic performance (direct effect 0.2152, SE = 0.1074, 95% Boot confidence interval: 0.0014-0.4290) is significant; an environmental performance (direct effect 0.0390, SE = 0.1312, 95% Boot confidence interval: -0.2221-0.3001) is significant and SSCM disruptions (direct effect 0.0903, SE = 0.1367, 95% Boot confidence interval: -0.1819-0.3625) is significant. The results further showed that the direct effects of the stakeholder decision on social performance (indirect effect 0.0684, SE = 0.0730, 95% Boot confidence interval: -0.0674-0.2199) is

significant; on economic performance (indirect effect 0.1894, SE = 0.0639, 95% Boot confidence interval: 0.0649-0.3187) is significant; an environmental performance (indirect effect 0.0663, SE = 0.0594, 95% Boot confidence interval: -0.0466-0.1878) is significant and SSCM disruptions (indirect effect 0.0249, SE = 0.0601, 95% Boot confidence interval: -0.0936-0.1472) is significant through stakeholder decisions. Both direct and indirect effects of stakeholder decision on social performance, economic performance, environmental performance and SSCM disruptions are thus significantly positive. Table 5.28 concludes the mediation analysis.

Hypo-theses	Direct effect	Indirect relationships	Indirect effect	T statistics	Conclusion
H1a	-0.004	SD -> MD1 -> MD2 -> MD4 -> DV1	0.0684	2.9640	Partial mediation
H1b	0.2152	SD -> MD1 -> MD3 -> MD4 ->DV2	0.1894	1.1161	**Complementary mediation**
H1c	0.0390	SD -> MD1-> MD2 -> MD4 -> DV3	0.0663	0.4143	Partial mediation
H1d	0.0930	SD-> MD2 -> MD4 -> DV4	0.0249	2.9640	Partial mediation

Table 5.28: Results for serial mediation analysis, model 6

Table 5.28 evidently showed, with the direct effect, and indirect effect along with T-statistics. Specifically, the result shows that the indirect effect of stakeholder decisions on environmental performance has **complimentary mediation**, where all the relationships are positive, whereas social performance, economic performance, and SSCM disruptions have **partial mediation** that denotes that some of the relationships are negative throughout the path (Hayes, 2022). As such all the hypotheses are **supported.**

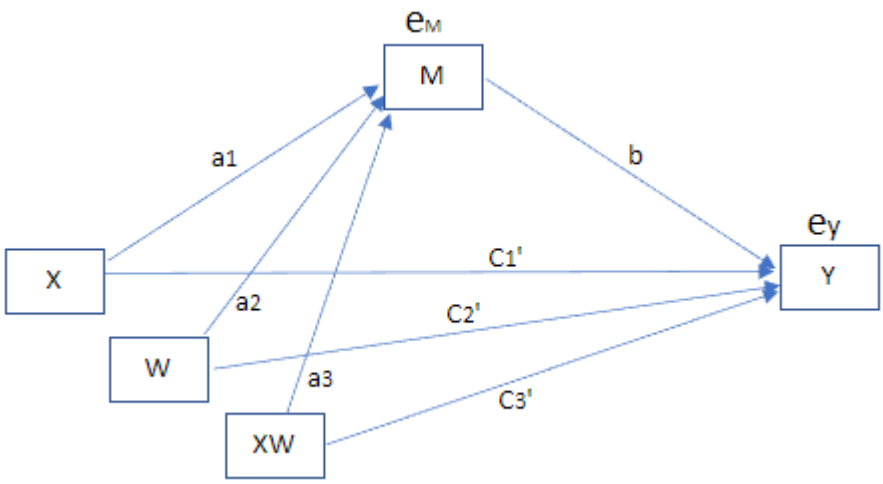
5.6.8.3 Moderated mediation analysis (moderated mediation-model 8)

In this section, the moderated mediation analysis was used to uncover the circumstances, such as how employee engagement facilitates garment factories SSCM practices. More specifically, the analysis showed that the reason for stakeholder decision making has an effect on firm performance as the cause of employee engagement in SSCM practices.

To do so, model 8 has been used that showed that the mediator (employee engagement) also moderates the direct effects (stakeholder decision on firm performance via SSCM practices). The difference between model 6 and model 8 is the mediator is moderating the direct relationship between dependent and independent variables. In particular, whereas mediation analysis focuses on how a causal effect operates, moderation analysis is used to address, when or under what circumstances, that effects exist or does not and in what magnitude (Hayes and Rockwood, 2017). As Hayes (2015) suggested, the successful answering such questions for moderated mediation analysis are as- 'Under what circumstances does X affect Y? Or how does X affect Y?'' This argument goes with the fourth research question of this study's, - how Employee Engagement enables the SSCM practices?

The SSCM practices moderates the mediation relationships between stakeholder decisions and firm performances through employee engagement. The indirect effect is moderated by SSCM practices, along with that also mediates the relationships between stakeholder decisions and firm performances. Figure 5.9 is the basic statistical diagram of the basic moderated mediation model (please check Figure 5.3).

Figure 5.9: The basic statistical model for moderated mediation analysis.



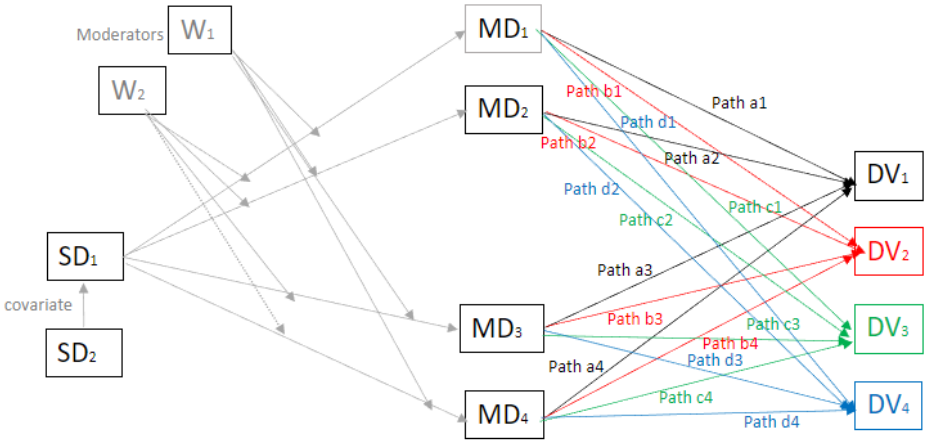
In figure 5.9, the model depicted the mediation of the effect of X on Y by M, with both the direct and indirect effects of X moderated by W. Moderation of the indirect effect is depicted in this model as resulting from moderation of the effect of X on M by W. This moderation renders the indirect effect conditional on W, so there is no single direct or indirect effect of X on Y. Instead, the indirect and direct effects are functions of W, which is conditional. This diagram represents two equations, one for M and one for Y:

$$M = i1 + a1x + a2W + a3XW + eM.$$

$$Y = i2 + c'1x + c'2W + c'3XW + bM + eY.$$

As this study have two X (independent variables), two W (moderator variables), four M (mediator variables) and four Y (dependent variables), the above equations will be four times. Based on advice from Andrew Hayes, this study analysed each dependent variable individually (Hayes, 2022). As for four different dependent variables- the analysis has four rounds with four results, which means at every round, an estimation was for Stakeholder Decision1 as an independent variable and a Stakeholder Decision2 as a covariate and one dependent variable (i.e., either on social performances, economic performances, environmental performances, and SC disruptions or vice versa). So, the statistical model for this study is:

Figure 5.10: The statistical model of moderated mediation analysis for this study, model 8



5.6.8.4 Results

Note that, as this study has two X, two W, four M and four Y for moderated mediation analysis (see section 5.6.8.4). PROCESS model 8 has four rounds with four separate results.

H2a: SSCM practices positively moderate the mediation effect of employee engagement on the relationship between stakeholder decisions and organizations' social performances.

The outcomes posit that SSCM practices positively moderate the mediation effect of employee engagement on the relationship between stakeholder decision making and organizations 'social performances'. Because of the hypothesis, the focus is on organisations social performances (DV1). By followed Hayes's (2022) guidelines and this study employed 'model 8' of PROCESS Macro to test the model. The results of

the step-by-step analysis are presented in table 5.29. The model summary provides a summary of the model with R, R-square, F statistics, and P values for the overall model. The model summary for each outcome variable is also presented.

Regression results	MD1 Coefficient	MD1 Standard Error (SE)	MD2 Coefficient	MD2 SE	MD3 Coefficient	MD3 SE	MD4 Coefficient	MD4 SE
SD1	0.2513	0.1331	0.0892	0.1271	0.1101	0.1141	0.0485	0.1412
SSCM1	0.3082	0.1362	0.2600	0.1595	0.2359	0.1432	0.2753	0.1444
Int_1	-0.0624	0.1219	0.0729	0.1428	0.3159	0.1282	-0.1577	0.1293
SD2	0.2297	0.1131	0.0318	0.1325	-0.1672	0.1190	0.2450	0.1200
SSCM2								
R-Square	0.2986***		0.2676**		0.3596*		0.4803**	
F value	7.7685		1.4074		2.7110		5.4711	

Conditional effect of X on Y		Indirect effect	Difference between upper & lower level	Boot SE	95% confidence interval LLCI	ULCI
SD→ MD1 ->DV1	Upper level	0.8580	0.8051	0.0674	-0.0219	-0.0219
	Lower level	0.0529		0.0439	-0.0496	0.1332
SD → MD2 ->DV1	Upper level	0.0012	-0.0085	0.0297	-0.0556	0.0735
	Lower level	0.0097		0.0276	-0.0356	0.0800
SD → MD3 ->DV1	Upper level	0.0352	0.1107	0.0500	-0.0354	0.1639
	Lower level	-0.0755		0.0544	-0.2011	0.0066
SD → MD4 ->DV	Upper level	0.0481	0.0728	0.0747	-0.1146	0.1967
	Lower level	-0.0247		0.0411	-0.1023	0.0702

Index of Moderated Mediation Bootstrapping Analysis

Index of Moderated Mediation	Indirect effect	Boot SE	95% confidence interval LLCI	ULCI	T-statistics	**Conclusions**
SD → MD1 ->DV1	-.0172	.0424	-.1343	.0367	-0.405	**Supported**
SD → MD2 ->DV1	.0044	.0180	-.0324	.0446	0.244	**Supported**
SD → MD3 ->DV1	-.0578	.0463	-.1735	.0065	1.248	**Supported**
SD → MD4 ->DV1	-0.0380	0.0454	-0.120	0.0766	0.837	**Supported**

Notes: *p < 0.10, **p < 0.05, ***p < 0.001, SE = standard error, LLCI = lower level of confidence interval, ULCI = upper level of confidence interval.

Table 5.29: Moderated mediation analysis for DV1, model 8

The results are depicted in table 5.29. The R-squares values (0.2986, 0.2676, 0.3596 and 0.4803) are positive with a significance of P <0.001, for MD1 and MD4.

The conditional effects between SD (Stakeholders decisions) and DV1 (social performance) pass through mediator variables (i.e., MD1, MD2, MD3 and MD4) both in the upper level and lower level with moderators (SSCM practices), reported only 1% significance in MD2 (upper level 0.0012) conferment practices) whereas 8% significance in MD1 (upper level 0.8580). Furthermore, the difference between the indirect effects at low and high levels for MD3 and MD4 Is positive (0.1107, 0.0728) and the 95% confidence interval does not include zero. The results indicate that the conditional indirect effect of stakeholder decisions on organisational social performance through employee engagement will be significant from nonsignificant, when the level of employee engagement increases from low to high jointly with the significant difference of moderated mediation indirect effects at low and high levels of employee engagement, particularly for economic performance (effect= 0.0044, SE= 0.0180 and T = 0.244).

Hypothesis H2a suggested that the indirect effect of stakeholder decisions on social performances through employee engagement will be moderated by SSCM practices. H2a was supported as the index of moderated mediation (index = -.0172, .0044, -.0578, -0.0380) and since 95% confidence interval (both in upper level and lower level of confidence interval) does not include zero. It is confirmed that the indirect effect of stakeholder decisions on organisation's social performances through employee engagement is positively moderated by SSCM practices, which support three relations of **H2a.**

H2b: SSCM practices positively moderate the mediation effect of employee engagement on the relationship between stakeholder decisions and organizations' economic performances.

The results posit that SSCM practices positively moderate the mediation effect of employee engagement on the relationship between stakeholder decision-making and organizations' economic performances. The findings are shown in table 5.30. Because these relationships focused on organizations' social performances (DV2). The R-

squares values (0.2964 and 0.2315) are positive with a significance of P <0.001. The conditional effects between SD (SSCM practices) and DV2 (economic performance) pass through moderator variables (i.e., MD1, MD2, MD3 and MD4) both in the upper level and lower level, reported only 1% significance in MD2 (upper value 0.0018) whereas 9% significance in MD1 (upper value 0.9802). Furthermore, in conditional indirect effect, the difference between upper and lower level for MD1, MD3 and MD4 is positive (0.9228, 0.112, 0.0706) and the 95% confidence interval does not include zero.

Furthermore, for index of moderated mediation the results indicate the indirect effect of stakeholder decisions on organisational social performance through employee engagement will be become from non-significant to significant when the level of employee engagement increases from lower level to upper level with the significant difference of indirect effects will rise from lower level to upper level, particularly for for economic performance (effect= 0.0041, SE= 0.0201 and T = 0.2039). It is confirmed that the indirect effect of stakeholder decisions on organisational economic performance through employee engagement is positively moderated by SSCM practices, which support two relations of **H2b** (social performances and SC disruptions).

	MD1		MD2		MD3		MD4	
Regression results	Coefficient	Standard Error (SE)	Coefficient	SE	Coefficient	SE	Coefficient	SE
SD1	0. 2566	0.1370	0.0777	0.1602	0.1156	0.1434	0.0469	0.1449
SSCM1	0.3117	0.1385	0.0056	0.0145	0.0057	0.0130	-0.0101	0.0131
Int_1	- 0.0580	0.1264	0.0560	0.1478	0.3347	0.1323	-0.1631	0.1336
SD2	0.2363	0.1162	0.0269	0.1359	- 0.1529	0.1217	0.2345	0.1229
SSCM2	.1302	.1101	.1469	.1290	.0375	.1168	0.1361	0.1168
R-Square	0.2964***		0.0633		0.1398		0.2315***	
F value	5.8987		0.9462		2.2752		4.2184	

Conditional effect of X on Y		Indirect effect	Difference between upper & lower level	Boot SE	95% confidence interval LLCI	ULCI
SD→ MD1 ->DV2	Upper level	.9802	0.9228	0.0695	-.0189	.2597
	Lower level	.0574		.0461	-.0477	.1367
SD → MD2 ->DV2	Upper level	.0018	-0.0079	.0317	-.0546	.0812
	Lower level	.0097		.0292	-.0343	.0855

SD → MD3 ->DV2	Upper level	.0358	0.112	.0512	-.0382	.1665
	Lower level	-.0762		.0571	-.2108	.0116
SD → MD4 ->DV2	Upper level	.0459	0.0706	.0723	-.1169	.1862
	Lower level	-.0247		.0429	-.0979	.0830

Index of Moderated Mediation Bootstrapping Analysis

Index of Moderated Mediation	Indirect effect	Boot SE	95% confidence interval		T-statistics	**Conclusions**
			LLCI	ULCI		
SD → MD1 ->DV2	-.0166	.0444	-.1434	.0427	-0.3738	**Supported**
SD → MD2 ->DV2	.0041	.0201	-.0363	.0476	0.2039	Not significant, but CI doesn't include zero
SD → MD3 ->DV2	-.0585	.0483	-.1772	.0104	-1.2111	Not significant, but CI doesn't include zero
SD → MD4 ->DV2	-.0368	.0459	-.1119	.0822	-0.8017	**Supported**

Notes: *p < 0.10, **p < 0.05, ***p < 0.001, SE = standard error, LLCI = lower level of confidence interval, ULCI = upper level of confidence interval.

Table 5.30: Moderated mediation analysis for DV2, model 8

H2c: SSCM practices positively moderate the mediation effect of employee engagement on the relationship between stakeholder decisions and organizations' environmental performances.

The findings of this section posit that SSCM practices positively moderate the mediation effect of employee engagement on the relationship between stakeholder decision-making and organizations' environmental performances. The results are illustrated in table 5.31. Because these hypotheses focus on organizations' environmental performance (DV3). The R-squares values (0.3120 and 0.2449) are positive with a significance of P <0.001. The conditional effects between SD (SSCM practices) and DV3 (environmental performance) pass through moderator variables (i.e., MD1, MD2, MD3, and MD4) both in the upper level and lower level, reported only 3% significance in MD3 (upper level 0.3085). Furthermore, in conditional effect the difference between the indirect effects at upper and lower level for all of the moderators are negatives, except for MD3 (0.2028) and the 95% confidence interval does not include zero.

Moreover, in the index of moderated mediation the results indicate the indirect effect of stakeholder decisions on organisational environmental reputation through employee engagement will become from non-significant to significant for MD1 and MD3 (index are 0.0143 and 0.0860) where 95% confidence interval (both in upper level and lower level of confidence interval) does not include zero as well. Thus, hypothesis H2c suggested that although it has minimum effect, the indirect effect of stakeholder decisions on organisational environmental performance through employee engagement is positively moderated by SSCM practices, particularly for the two relations (MD1 and MD3).

	MD1		MD2		MD3		MD4	
Regression results	Coefficient	SE	Coefficient	SE	Coefficient	SE	Coefficient	SE
SD1	0.2204	0.1362	0.0505	0.1596	0.0922	0.1445	0.0187	0.1445
SSCM1	0.2983	0.1343	0.2437	0.1573	0.2212	0.1424	0.2682	0.1424
Int_1	-0.0970	0.1251	0.0338	0.1465	0.3059	0.1327	-0.1939	0.1327
SD2	0.1844	0.1192	-0.0194	0.1396	-0.1803	0.1264	0.1975	0.1264
SSCM2	0.1302	0.1101	0.1469	0.1290	0.0375	0.1168	0.1361	0.1168
R-Square	0.3120***		0.0880		0.1306		0.2449***	
F value	6.5288		1.3899		2.1628		4.6702	

Conditional effect of X on Y		Indirect effect	Difference between upper & lower level	Boot SE	95% confidence interval LLCI	ULCI
SD→ MD1 ->DV3	Upper level	-0.0445	-0.0253	0.0590	-0.1780	0.0564
	Lower level	-0.0192		0.0328	-0.0894	0.0453
SD → MD2 ->DV3	Upper level	-0.0019	-0.0051	.0443	-0.0683	0.1163
	Lower level	-0.0070		0.0335	-0.0718	0.0705
SD → MD3 ->DV3	Upper level	0.3085	0.2028	0.0719	-0.2096	0.0891
	Lower level	0.1057		0.0732	-0.0178	0.2700
SD → MD4 ->DV3	Upper level	0.0085	0.0597	0.0573	-0.1030	0.1500
	Lower level	-0.0076		0.0387	-0.1021	0.0667

Index of Moderated Mediation Bootstrapping Analysis

Index of Moderated Mediation	Indirect effect	Boot SE	95% confidence interval LLCI	ULCI	T-statistics	**Conclusions**
SD → MD1 ->DV3	0.0143	0.0325	-0.0320	0.0977	-0.3275	**Supported**
SD → MD2 ->DV3	-0.0029	0.0282	-0.0734	0.0481	-1.5259	Not significant, but CI doesn't include zero
SD → MD3 ->DV3	0.0860	0.0620	-0.0187	0.2224	-0.0840	**Supported**

SD → MD4 ->DV3	-0.0091	0.0432	-0.1156	0.0728	-1.5879	Not significant, but CI doesn't include zero

Notes: *p < 0.10, **p < 0.05, ***p < 0.001, SE = standard error, LLCI = lower level of confidence interval, ULCI = upper level of confidence interval.

Table 5.31: Moderated mediation analysis for DV3, model 8

H2d: SSCM practices positively moderates the mediation effect of employee engagement on the relationship between stakeholder decisions and SC disruptions.

The outcomes posit that SSCM practices positively moderate the mediation effect of employee engagement on the relationship between stakeholder decision-making and organizations' SSCM disruptions. The results are shown in table 5.32. In particular the focus is on organisations' SC disruptions (DV4). The R-squares values (0.2346, 0.0615 and 0.2313) are positive with a significance of P <0.001, except MD3. Conditional effects between SD (SSCM practices) and DV4 (SSCM disruptions) pass through moderator variables (i.e., MD1, MD2, MD3, and MD4) both in the upper level and lower level, reported only 8% significance in MD2 (conferment practices) whereas 4% significance in MD1. Furthermore, the difference between the indirect effects at upper and lower levels for three moderators is positive, the results for MD1, MD2, and MD3 are (0.0396, 0.034, 0.0013,0.0403) and the 95% confidence interval does not include zero.

For index of moderated mediation bootstrapping analysis, the results indicate the indirect effect of stakeholder decisions on organisational SC disruptions through employee engagement from nonsignificant to significant when the level of employee engagement increases from lower to higher jointly with the significant difference of indirect effects at low and high levels of employee engagement, particularly for economic performance ((effect= 0.0029, SE= 0.0247 and T = 0.117) and SC disruptions (effect= 0.0717, SE= 0.0521 and T = 1.376). It is confirmed that the indirect effect of stakeholder decisions on organisation's SC disruptions through employee

engagement is positively moderated by SSCM practices, which support three relations of **H2d**.

	MD1		MD2		MD3		MD4	
Regression results	Coefficient	SE	Coefficient	SE	Coefficient	SE	Coefficient	SE
SD1	.3856	.1311	.1390	.1478	.1609	.1367	.0745	.1331
SSCM1	.0898	.1128	.1587	.1367	.1063	.1176	.1262	.1145
Int_1	-.1014	.1265	.1066	.1426	.0751	.1319	.3804	.1284
SD2	.3090	.1213	.0144	.1053	-.2207	.1265	.2465	.1231
SSCM2		0.1101	0.1469	0.1290	0.0375	0.1168	0.1361	0.1168
R-Square	.2346*		.0615**		.0663		.2313**	
F value	5.5936		1.1967		1.2959		5.4899	

Conditional effect of X on Y		Indirect effect	Difference between upper & lower level	Boot SE	95% confidence interval LLCI	ULCI
SD→ MD1 ->DV3	Upper level	.4086	0.362	.0690	-.0409	.2305
	Lower level	.0466		.0405	-.0254	.1336
SD → MD2 ->DV3	Upper level	.8000	0.7933	.0363	-.0736	.0820
	Lower level	.0067		.0328	-.0440	.0896
SD → MD3 ->DV3	Upper level	-.0590	-0.812	.0321	-.0873	.0491
	Lower level	.0871		.0329	-.1078	.0192
SD → MD4 ->DV3	Upper level	-.0106	0.0403	.0593	-.1806	.0535
	Lower level	-.0297		.0664	-.0330	.2275

Index of Moderated Mediation Bootstrapping Analysis

Index of Moderated Mediation	Indirect effect	Boot SE	95% confidence interval LLCI	ULCI	T-statistics	**Conclusions**
SD → MD1 ->DV3	-.0167	.0247	-.0464	.0606	-0.6761	**Supported**
SD → MD2 ->DV3	0.0029	.0247	-.0464	.0606	0.1174	**Supported**
SD → MD3 ->DV3	-.0094	.0210	-.0592	.0288	-0.4476	Not significant, but CI doesn't include zero
SD → MD4 ->DV3	0.0717	.0521	-.0253	.1786	1.376	**Supported**

Notes: *p < 0.10, **p < 0.05, ***p < 0.001, SE = standard error, LLCI = lower level of confidence interval, ULCI = upper level of confidence interval.

Table 5.32: Moderated mediation analysis for DV4, model 8

In summary, as shown in Tables 5.29, 5.30, 5.31, and 5.32 the results across the moderated mediation model are quite consistent, and accept some of the relationships with the mediators. Thus, the findings reported below are based on the result of the

statistical model (see figure 5.10). The results of four hypothesised relationships can show that weather moderated mediating effects exist in two ways: firstly, the result showed collectively, and secondly, an individual relationship has a significant impact on regression value ((Zhu and Sarkis, 2004).

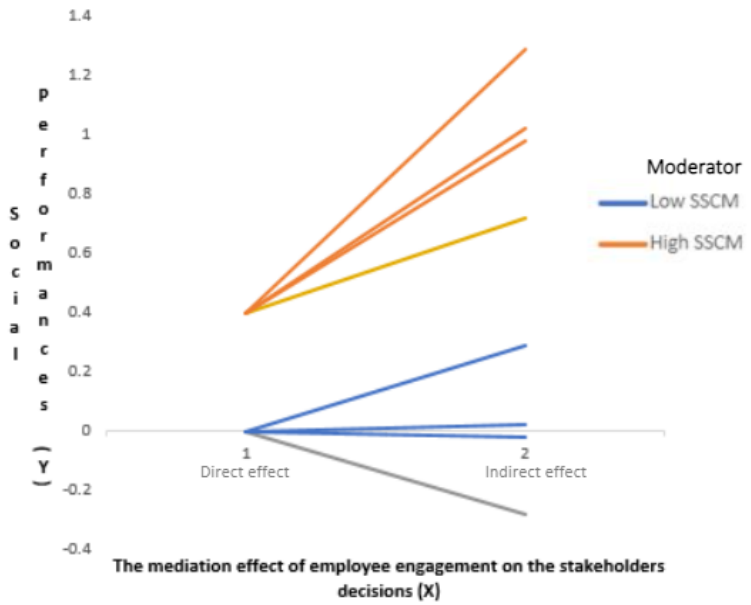
5.7 Discussion

Drawing on the findings previously discussed, it seems necessary to revisit the subsequent research question (i.e., how employee engagement enables the SSCM practices) in a contextual setting to get clear directions of the quantitative results. To do so, by following Aiken and West (1991), this section provides visualising outputs of the moderated mediation effect of SSCM practices. With the help from Regression results, PROCESS by Andrew Hayes SPSS outputs -underlined as 'data for visualising the conditional effect of the focal predictor', the author created a new syntax. This created a graphical view of the analysis. To create more vividness, the author then connected the dots and erased the average line and interpreted 'blue line' as before the moderating effect of the SSCM practices and 'orange line' as after the moderating effect of the SSCM practices, with X-axis characterised as the mediation effect of employee engagement on the stakeholder decisions and Y-axis characterised as the firm performances (i.e., social performances, economic performances, environmental performances, and SC disruptions). The lines also showed the CI (confidence interval) bound at 95% level, two-tailed.

5.7.1 The moderating effect of SSCM practices on the mediating role of employee engagement on the relationship between stakeholder decisions and firms' social performances.

As hypothesis (H2a) suggested, the effect of SSCM practices on firm performances, depends on the relationship between stakeholder decision-making and firms' social performances, and this relationship between stakeholder decisions and social performances can be explained either partially or fully by employee engagement. However, within that relationship the effect stakeholder involvement on employee engagement again depends on the level of SSCM practices. So, implications: having a high SSCM practices moderates the stakeholder decisions increases firms' social performances, but this level of performance somewhat depends on what level of SSCM practices incorporate in the factory premises. However, the reason stakeholder decision's has an effect on firm social performances the cause of employee engagement in SSCM practices. Figure 5.11 represented the the interaction effect on social performances.

Figure 5.11: The interaction effect on social performances.



For direct effect, the graph shows a steeper gradient for low and high SSCM practices. For social performance, the effect of employee engagement on social performances

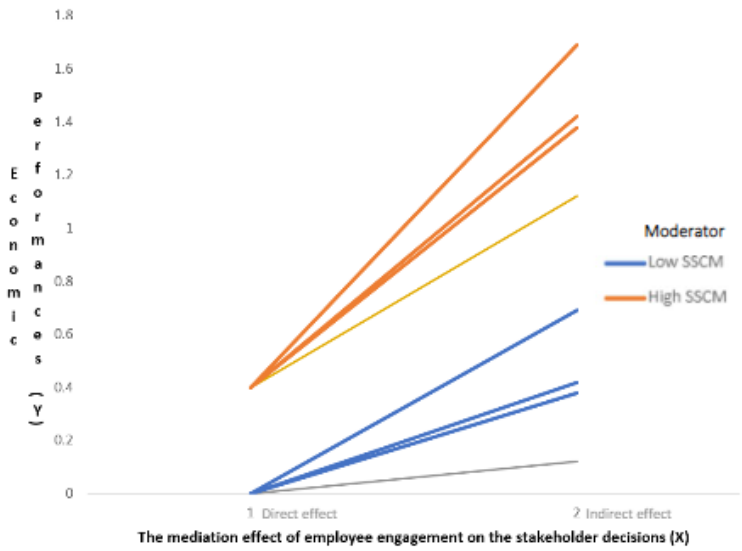
is much stronger at low level of SSCM practices. However, at higher level of SSCM practices, the lines tend to straighten, this shows that at higher SSCM practices, the increases in employee engagement does not lead to a similar change in the social performances. In conclusion, higher SSCM practices weakens the effect of employee engagement on social performances.

The conditional indirect effect showed that the indirect effect is low at low SSCM practices, elevated at higher SSCM practices. However, the conditional indirect effects are significant at all the four level of mediators (i.e., MD1, MD2, MD3 and MD4). For instance, the indirect effect in the presence of moderators (-.0172, .0044, -.0578 and -0.0380), and per the bootstrap, that is within the confidence interval at p is significant. The results showed that when the moderators are low, the lowest level of indirect effect is for MD4 (encumbrance practices), conversely when the moderator is high, the indirect effect is slightly higher for MD1 (conferment practices) and for MD2 (ardent practices) and MD3 (contrivance practices) the moderated mediation indirect effects are also significant.

5.7.2 The moderating effect of SSCM practices on the mediating role of employee engagement on the relationship between stakeholder decisions and firms' economical performances.

As hypothesis (H2b) suggested, SSCM practices positively moderate the mediation effect of employee engagement on the relationship between stakeholder decision-making and organizations' economic performances. Figure 5.12 represented the the interaction effect on economic performances.

Figure 5.12: The interaction effect on economic performances.



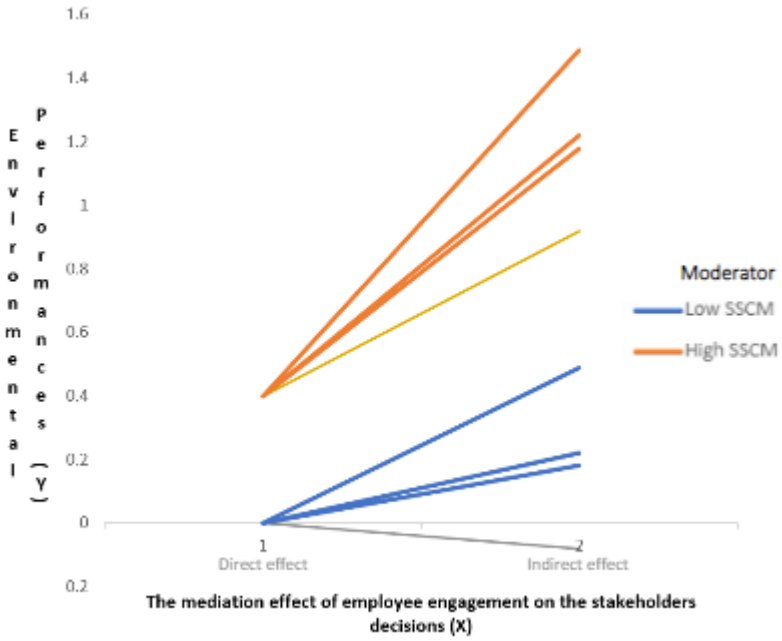
For direct effect, the graph showed a dearer gradient for both low and high SSCM practices. All the moderators started from the same level of SSCM practices, while gradually the effects tend to differentiate with high level of SSCM practices. for instance, MD4 is minimum with a conditional effect of (0, 0.12) at low level of SSCM practices, whereas the conditional indirect effect (0.4, 1.12) with high level of SSCM practices.

The conditional indirect effect also showed that the indirect effect is low in low SSCM practices and elevated in higher SSCM practices. However, the conditional indirect effects are significant for two mediators. For instance, for MD1 (conferment practices) and MD4 (encumbrance practices) with per the bootstrap, that is within the confidence interval at p is also significant. Whereas mediators MD3 and MD2 have sharpened gradient but the effects are insignificant although both upper-level and lower-level confidence interval doesn’t include zero.

5.7.3 The moderating effect of SSCM practices on the mediating role of employee engagement on the relationship between stakeholder decisions and firms' environmental performances.

As hypothesis (H2c) suggested, SSCM practices positively moderates the mediation effect of employee engagement between stakeholder decision making and organizations' environmental performances. Figure 5.13 illustrated the the interaction effect on environmental performances.

Figure 5.13: The interaction effect on environmental performances.

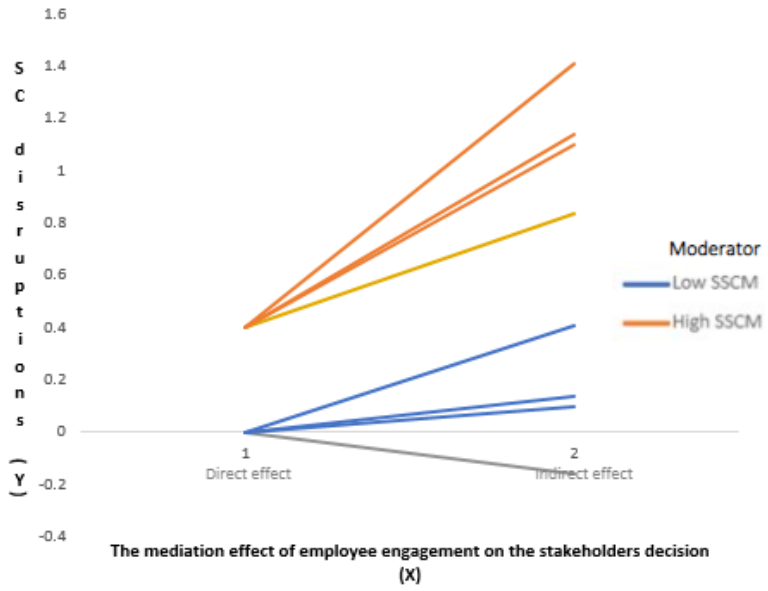


For direct effect, the graph showed a slightly different gradient for low SSCM practices. For instance, moderator MD4 (encumbrance practices) started with nil effect and gradually tended to be lower with the indirect effect (0, -0.08) of low SSCM practices. This finding is important, as garment factories environmental performance has minimum moderated mediation effect of employee engagement, while the SSCM practice is at low level. Furthermore, at high level of SSCM practices, MD4 tend to have higher measurements (0.4, 0.92) still insignificant. However, two moderators are significant at both conditional direct effect and integrated moderated mediation indirect effect. For example, MD1 and MD3 (0.0143 and 0.0860) within the confidence interval at P is also significant.

5.7.4 The moderating effect of SSCM practices on the mediating role of employee engagement on the relationship between stakeholder decisions and firms' SC disruptions.

As hypothesis (H2d) suggested, SSCM practices positively moderates the mediation effect of employee engagement between stakeholder decision making and organizations' SC disruptions. Figure 5.14 illustrated the the interaction effect on environmental performances.

Figure 5.14: The interaction effect on SC disruptions.



For SC disruptions, three mediators MD1, MD2 and MD4 showed significant results (-.0167, 0.0029 and 0.0717) for direct and indirect effect, both in low SSCM and high SSCM, where the p is significant within the confidence interval (both in conditional indirect effect and index of moderated mediation bootstrapping). Although MD4 tend to be lower gradient at indirect effect (0, -0.16) at low SSCM, while the gradient is a bit positively higher (0.4, .84) with high SSCM. Apart that, for MD3 (contrivance practices) the results are insignificant but both upper-level and lower-level confidence interval doesn't include zero.

Therefore, through the empirical finding, this study contributes a different point of view to the moderated mediation of SSCM practices on the mediating role of employee engagement on the relationship between stakeholder decision making and firms' performances. Along the way, some of the relationships are insignificant both in conditional effect and index of moderated mediation effect. Further discussion will be provided in Chapter 6, while answering the main research questions of this study.

5.8 Summary of the chapter

In this chapter, several statistical tests have been used by using SPSS, AMOS, and Process Macro to examine the validity and reliability of the measurement model from CFA and to test the proposed hypotheses in OLS in conditional process analysis. In particular, through several hypotheses, the subsequent research question (RQ4), how employee engagement enables SSCM practices, has been answered. Overall, the hypotheses have achieved anticipated statistical results, and relationships between stakeholder decisions, sustainable practices, employee engagement, and firm performance have been proven. To better understand the relationships, a series of statistical tests, including composite variables, mediating, and moderated mediating effects, were also run. Finally, the findings of this chapter will be further expounded in detail with regard to institutional theory and stakeholder theory in the discussion chapter (Chapter 6).

CHAPTER 6

Discussion

6.1 Overview

This research originated with the interest of identifying the forces of SSCM in the manufacturing garment industry within the day-to-day operations of the garment shop floor, with a particular focus on the participation of employees in sustainable practices and their contribution to improving SSCM performance. A convergent mixed method research design (i.e., semi-structured interview and survey) have been used for primary data collection, and different levels of data analysis techniques (i.e., thematic analysis and moderated mediation analysis) have been observed to identify the deeper insights of Bangladeshi garment factories inbound stakeholders, as well as SSCM forces, and through moderated mediation analysis, a number of interesting findings were obtained. In this chapter, a comprehensive discussion of the thesis will be presented, combining the results of interviews and survey studies, highlighting important points and their contributions to theory and practice, and reflecting the relevant literature. Table 6.1 presented a structure, set according to the research questions of the study.

RQ1: Who are the inbound stakeholders in the Bangladeshi garment industry?
RQ2: How do these stakeholders exert institutional pressure to implement SSCM?
RQ3a: What are the available stakeholder forces related to SSCM practices in the Bangladeshi garment industry?
RQ3b: What are the available stakeholder forces related to the performance of SSCM in the Bangladeshi garment industry?
RQ4: How does employee engagement enable SSCM practices?

Table 6.1: Subsequent objectives of Chapter 6.

6.2 RQ1: Who are the inbound stakeholders in the Bangladeshi garment industry?

To gain an in-depth and comprehensive insight into the sustainability practices of the inbound stakeholders and the exceptions to the SSCM performance, first categorisation of the SC partners should be included to identify the relationship among them, and the combination of the SSCM practices between the partners should be considered. Therefore, the discussion of the identification of stakeholders in the Bangladeshi garment industry is based on the qualitative (that is, Chapter 4) and quantitative (that is, Chapter 5) findings of this investigation.

From the literature, a broader number of manufacturing-based stakeholders and their sustainable activities have been identified. In particular, involving the concept of stakeholder theory, the research findings reflect those of Bangladeshi garment manufacturers, who believe that sustainability is largely perceived as a philanthropic contribution of literature, rather than a broad concept that addresses multiple dimensions of practicality. The results of both qualitative and quantitative findings conveyed the same message. However, in terms of the participation of stakeholders, several empirical findings of the garment industry argued that manufacturers' stakeholders in garments are basically divided into two groups- internal and external, while complying with operational activities (Hoque et al., 2020; Nath et al., 2020, 2019;

Huq et al., 2020). Figure 6.1 presented an overview of stakeholders in Bangladesh's garment industries.

Figure 6.1: Stakeholder groups of the Bangladeshi garment industry, suggested by literature as well as empirical findings.

Based on the literature and research findings, several dimensions of lower levels of employees have been identified from quantitative findings, such as line manager, quality controller, inspector, assistant manager, supervisor, supervisor's subordinate, technician, compliance officer, welfare officer, floor manager, compliance's subordinate, store-in-charge etc. These findings extended the main stakeholder groups, originally suggested by Clarkson (1995). As Freeman (2002), argued internal stakeholder groups are the bridge between business's internal and external groups, particularly for SC actions. This idea also goes with the management of SCM of garment factories. Compared to the top level of management, the lower level of management basically is involved with the day-to-day operations of garment workers. For example, a manager worked as a decision-maker for an individual manufacturing process, whereas a line manager ensures that production lines are properly balanced

for target output (See Table 3.11, Chapter 3). These findings go with the views of 'management control', which previous researchers identified as internal stakeholders having more control over factory resources and decision-making, while external stakeholders have less control, even though they are capable of influencing sustainable practices that are true of the external sustainable forces they impose (Mitchell's et al. 1997). Under this circumstance, the garment industry stakeholders were segmented into two basic sections: as of internal stakeholders, the SC partners belonged within the manufacturing country's boundaries, and as of external stakeholders are the other SC partners belonged to the rest of the supply chain. Therefore, from the stakeholder's perspective, this study refined both types of stakeholder groups, and continues to analyse stakeholder forces released from both the groups and their practices on the SSCM performance of the garment industry.

Moreover, both qualitative and quantitative findings in this research showed that the aspects of sustainable practice including economic, environmental, and social dimension, move and exchange between SC partners when they interact. Several researchers addressed the embeddedness of sustainable behaviour in SC networks (Borgatti and Li, 2009) and SSCM researchers have gradually highlighted the importance of sustainable practices of manufacturers and their impact on associate suppliers and sub-suppliers (Huq et al., 2016; Chowdhury et al., 2016). In this study, the focus was on two types of stakeholders, while explaining the operational context (see Figure 6.1). According to Freeman (1984) 'any group or individual who can affect or is affected by the achievement of objectives of an organisation leverages the effectiveness of business performances. The argument reflects the sustainable practices of the garment factories' shop floors and the stakeholder's operational boundaries and relationships between SC partners, which have a significant impact on overall SSCM performances. In the same way, the findings from both semi-structured interviews (Chapter 4) and surveys (Chapter 5) supported the classification of garment stakeholders- internal stakeholders and external stakeholders considering the operational and influential participation in sustainable practices. To support the argument, several empirical researchers often drew suggestions on this stakeholder classification while investigating internal and external sustainable practices and performance (Huq et al., 2016; Sajjad et al., 2015; Klassen & Vereecke, 2012).

Consequently, the findings of this research study suggested clear evidence that stakeholder groups in Bangladesh's garment industry embrace the implementation of SSCM based on the argument of their institutional activities (see Table 4.2 Chapter 4).

However, in terms of **internal stakeholders,** the findings support categorisation of stakeholder groups according to their managerial engagement and decision-making capabilities on the shop floor's that are mostly related to stakeholder performance and drive the implementation of SSCM practices, such as management at the top level (i.e., engaged with daily management activities), lower level (i.e., engaged with daily functioning activities), owner (i.e., owner of the factory), textile provider (i.e., supplier of the grey fabric), enabler (i.e., educational bodies related to training and development activities) and influencer (i.e., legal authority). These findings support previous studies, which suggested that factory productivity (Nath et al.,2019; Huq et al., 2014); operational execution (Sajjad et al., 2015), resource management (Chkanikova & Mont, 2015), compliance initiatives (Hoque et al., 2020), and government mechanism (Yadlapalli et al., 2018) are the critical factors for decision making of garment business.

Nonetheless, several participants in this study expressed their various perceptions about the meaning of sustainability and SSCM initiatives. For example, while the top management mentioned having a proper compliance initiative as the key dominant to adopting the internal SSCM practice, the lower-level management perceived reputation and environmental risk management as the most important forces for sustainable practice. Therefore, the findings of this study clearly support aspects of stakeholder theory by supporting Hörisch et al. (2014) that 'stakeholder groups share a lot of ideas' to achieve collective sustainability goals. Simultaneously, this argument also extended the idea of a key force generator, who/whom can bring massive changes to sustainable performances within the factory premises, through their job responsibility more effectively, specifically in a manufacturing-based industry context. This finding somehow recognizes the findings from Huq et al., (2016), who found that categorization is needed while identifying sustainability practices, but failed to identify

from which or who is the most important spokesperson while talking about motivators in sustainability practices within the factory premises. The finding of this study added that, by locating the importance of employees' engagement in garment factory's operational procedures and highlighted the importance of more research in this regard.

In terms of **external stakeholders,** typically garment SC include SC partners, competitors, retailers, suppliers, distributors, sponsors, consumers, media, international NGOs and associations, and other pressure groups (Meixell and Luoma, 2015). Interestingly, despite previous evidence in the literature, a large number of participants in lower-level management participants in this study perceived the position of external stakeholders as regulatory bodies (i.e., government, legal authorities, external auditor) and buyers (i.e., retailers, suppliers, competitors, and distributors) while top-level management perceived the external stakeholder group as the co-investor/sponsor, who guides the sustainability practices on the shop floor. For example, several research participants talked about how management decisions inspired them to practice social and environmental responsibility, while external stakeholders, such as partners and retailers, could contribute to the investment of safer housing for garment workers and employees, such as new infrastructure, training & development, workshops, etc. This finding supports previous research (Huq and Stevenson, 2020) that buyers could provide monetary protection by confirming a certain number of orders (i.e., product purchases) from sustainable production initiatives, such as ordering organic materials. There was evidence to suggest that to maintain successful sustainable practices in factory premises, both stakeholder groups must undertake a certain engagement to be classified as a 'socially responsible' citizen of business (Longo et al. 2005). In particular, aspects like collaboration, networking, and transparency for better intervention, while both the groups have shown commitment to sustainable practices. This is consistent with previous research (Nath et al., 2020; Yadlapalli et al., 2019), which identifies that relationship mechanisms played an integral role in sustainable decision-making of manufacturers.

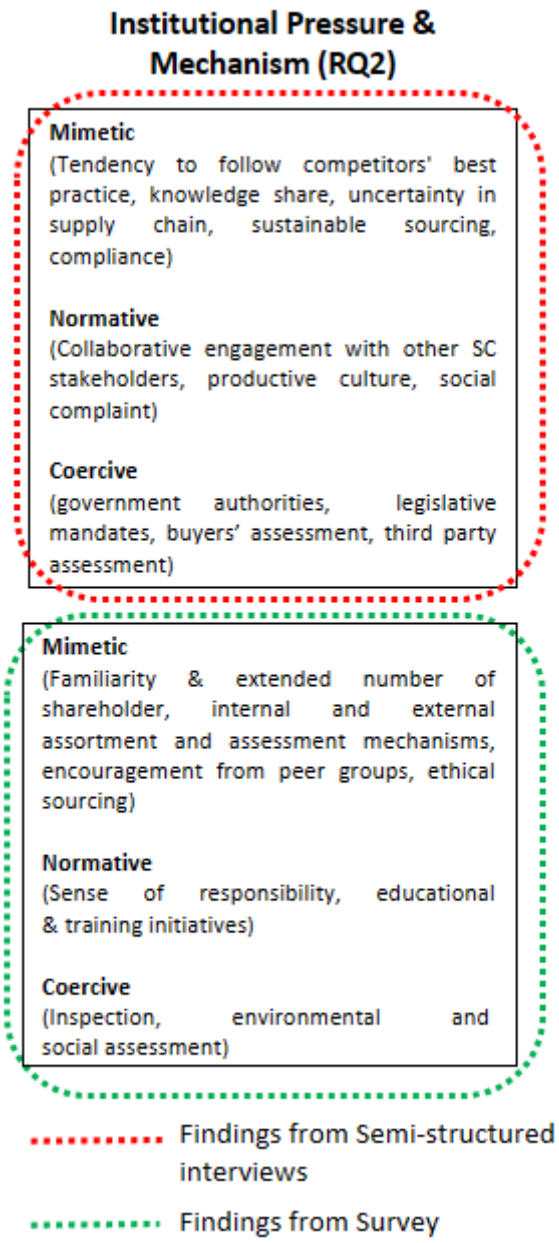
However, the findings of this study also support the descriptive aspects of stakeholder groups, such as how both groups are compatible to sustainability expectations and competitive advantage while managing their operations (Hörisch et al., 2014; Donaldson and Preston, 1995). For example, to meet buyers' requirements for social and ethical aspects, both internal and external stakeholders, including government, owners, management, and unions work together. These findings are consistent with previous SSCM research (Sajjad et al., 2015; Hoejmose et al., 2012). In particular, Sajjad et al. (2015) investigated SSCM contact and found that large organisation experiences higher expectations and sustainable pressures from different stakeholders, such as-community, media, and consumers as they drive pressure for implementing sustainable practices. As a matter of fact, Sajjad et al., (2015) also suggested a connection between stakeholder theory and institutional theory which was also led by previous research (Tachizawa & Wong, 2014; Acosta et al., 2014). Similarly, Pagell and Shevchenko (2014) also supported sustainability requirements from both internal and external stakeholders groups and argued ''the ability of the planet to provide some natural resources is fading at the same time that many stakeholders are demanding action on a variety of issues, from climate change to working conditions in supplier factories in developing countries'. This argument goes with the manufacturing-based garment factory context, specifically for a developing country, such as Bangladesh, to embed SSCM practices.

6.3 RQ2: How do these stakeholders exert institutional pressure to implement SSCM performances?

Moving on to the institutional pressure on SSCM implementation, both Chapters 4 and 5 investigated how institutional pressures and mechanisms affect the implementation of SSCM practices. Specifically, Table 4.6 highlighted several sustainable forces that are involved in the factory's shop floor activities as sustainable practices. In the reported findings, two key themes were identified - supporting and hindering in relation to instrumental, normative, and coercive aspects of institutional theory. In fact, Table 5.26 emphasised several SSCM practices as constructs from the point of view of lower

-level employees of the garment industry and how these practices could exert institutional pressure on the implementation of SSCM. Overall, this section summarises the interpretations of empirical data and explores how institutional theory and stakeholder theory are consistent with the findings of the study.

Figure 6.2: Institutional pressures and mechanisms to implement SSCM performances.



6.3.1 Institutional pressures and mechanisms

The findings suggested that institutional pressures and mechanisms- coercive, mimetic, and normative-vary across stakeholder categories and therefore have different implications for SSCM practices. As shown in Figure 6.2 both empirical chapters shed light on some forces that could exert institutional pressure from both internal and external stakeholders. Most importantly, Chapter 6 identified some forces from survey respondents that are directly linked with institutional pressures and mechanisms.

6.3.1.1 Mimetic pressures and mechanisms

As shown in Figure 6.2, garment stakeholders tended to follow the sustainability norms of a group of peers to effectively implement the SSCM practices. One of the key forces was the **tendency to follow the best practices of the competitor,** to obtain orders from buyers (i.e., work orders from the retailers). This finding is consistent with previous research, which identified that the organisation imitates the action of successful competitors to achieve fruitful result (Zhu et al., 2013). The phenomenon was also related to the pressure imposed by buyers on the manufacturer to follow and implement sustainable practices in the day-to-day shop floor activities of their competitor factory (Hofmann et al., 2018; Ageron et al., 2012). Particularly, the qualitative findings also indicate that most of the manufacturers as well as their sub-suppliers participate in sustainable practices through **knowledge sharing** among partners. In particular, manufacturers, sometimes, created mimetic pressure on sub-suppliers to defend against the **uncertainty in the supply chain** and follow sustainable practices in their operations, such as **sustainable sourcing, compliance,** etc. This finding also supports previous research (Sancha et al., 2015; Grob & Benn, 2014), where researchers identified that memetic pressure is the only important institutional pressure to effectively implement SSCM practices through supplier development. In particular from contextual evidence, Huq and Stevenson (2018)

identified through an empirical study that institutional actors can exert pressure on developing countries' suppliers for **ethical sourcing** practices and ensure that their supply chain partners do the same. Furthermore, regarding ethical sourcing, Zorzini et al. (2015) considered both environmental and social issues while making sourcing decisions. This argument goes with the quantitative findings of the **internal and external assortment and evaluation mechanisms** for the sustainable practices of sub-suppliers to ensure effective mimetic mechanisms.

For example, LEED certifications for infrastructural development are related to both internal (i.e., owner, top management) and external stakeholder (i.e., sponsors, legalisation authorities) groups' decision-making processes. Bedside garment manufacturers are heavily backed by extended shareholders' decisions and influence mechanisms, which typically come as a form of adopting LEED certification, specifically when building new infrastructure is involved. Several aspects such as technological advancement, ecological waste management, organic sourcing, etc., are greatly dependent on the surrounding infrastructural situation of the factory. Accordingly, LEED certifications also proposed having/being a standardisation value among business partners. This interpretation agrees with the previous study by Huq et al. (2016), which terms this type of union as a 'buyer consortium effect' where legislative bodies facilitate the internal and external sustainability mechanism and observe SSCM practices (Nath et al., 2019). Like participants in semi-structured interviews, survey participants also acknowledged the encouragement of peer groups as mimetic pressures and mechanisms for SSCM practices. Interestingly, the findings also indicated that the feasibility of being a 'LEED' recognised factory, highlighted the financial solvency of LEED garment factory owner and facilitated to become a first mover (Zhu & Sarkis, 2007) toward the 'sustainability pillar', which may not be easy to follow by fellow material suppliers due to having rigidity in financial obligation. Consequently, this could create the possibility of lagging behind and discourage going for sustainable practices.

6.3.1.2 Normative pressures and mechanisms.

The second group of institutional pressures and mechanisms is normative pressures and mechanisms. The finding reveals that normative pressures and mechanisms for adopting SSCM practices could come from both internal and external stakeholders' groups, particularly when **collaborative engagement with other SC stakeholders is involved**. For instance, any stakeholders could be any partners in the SC chain such as- enablers (NGOs, government); influencers (academic personnel, media, consumers). Additionally, the cooperative relationship between management and garment employee greatly influences the **productive culture** while maintaining compliance within the factory premises, which also endures the **social complaint** from external stakeholders. This finding goes with DiMaggio & Powell's (1983) illustration that normative pressure is considered to be a driving factor that influences norms and a sense of responsibility, as normative pressure affects the behaviour and behaviour of social compliance. As a matter of fact, many survey respondents identified that the factory culture of being productive in all seasons could create pressures on SSCM performance in any case, which undermines the previous research of collaboration for extensive worker awareness raising training (Reinecke & Donaghey, 2015) in garment shop floor acts as a normative force to develop sustainability standard. Nevertheless, lower-level employees of this study also perceive that if management does not manage the public image of being a productive nature and a higher performance provider than competitors, the brand image and reputation of the factory can be affected.

Moreover, while the evidence shows the existence of several sustainable related collaborative projects between manufacturers, suppliers, sub-suppliers, and non-profit agencies, the normative pressure from international NGOs and other associations is less noticeable at the factory level. This finding is consistent with the previous research study by Soundararajan and Brown (2016), which identified that formal and informal support from external stakeholders, particularly in compliance and employee **education and training initiatives,** could address the contingent circumstance. In the same way, survey respondents highlighted similar aspects, such as the complaint of

stakeholders about the factory's technical practices and knowledge enhancing support for lower-level employees, especially from enablers and influencers. These findings line with the previous research by Oelze et al. (2016) and Boström et al. (2015), which described that a **sense of responsibility** somehow could create pressure on garment employees to be constantly productive, but both interview and survey respondents recognised this form of responsibility for being productive all the time, is occasionally unrealistic and impractical in nature.

6.3.1.3 Coercive pressures and mechanisms

The final group of institutional pressures and mechanisms is coercive pressures and mechanisms. But the empirical findings revealed that coercive pressure could be enacted by other SC partners, such as **government authorities, legislative mandates, that is, buyers' assessment authorities, third parties' assessment** in the form of direct visits**,** sub-sale audits**, and inspection** of technological advancement, factory's **environmental and social sustainability assessment initiatives**. This finding supports the findings of a significant body of research (Sayed et al., 2017; Kauppi & Hannibal, 2017; Soundararajan & Brown, 2016; Grimm et al., 2016), where researchers found that coercive pressure on factory management mainly stems from powerful buyers, in the form of specific codes of conduct for selection and assessment requirements, to obtain production orders. For example, Grimm et al. (2016) provided evidence with a Swiss retailer (Migros) and argued that manufacturers and subsequent sub-suppliers sustainable practices are typically accessed against buyers' code of conduct through on-site (sometimes surprise) visits. In addition, Kauppi & Hannibal (2017) investigated voluntary assessment initiatives and identified how the social sustainability assessment initiative acts by instigating institutional pressures indirectly rather than directly. Thus, both direct assessment from government authorities and legislative mandates, and indirect (third-party assessment) could create coercive pressure for SSCM performance in shop floor operational practices.

Interestingly, the survey findings of this study also suggested strong governmental pressure on sub-supplier selections. This finding is a little contradictory to some previous research, where researchers showed less influence of legal obligations sub-supplier selection procedures (Huq et al., 2014; Soundararajan et al., 2018). However, in line with several previous SSCM research (Esfahbodi et al., 2017; Zhu & Sarkis, 2007), the empirical findings indicated that a significant number of manufacturers perceived a strong legal obligation from the governmental authorities as a coercive pressure to adopt SSCM practices in operations, but not exactly for internal material supplier or sub-supplier.

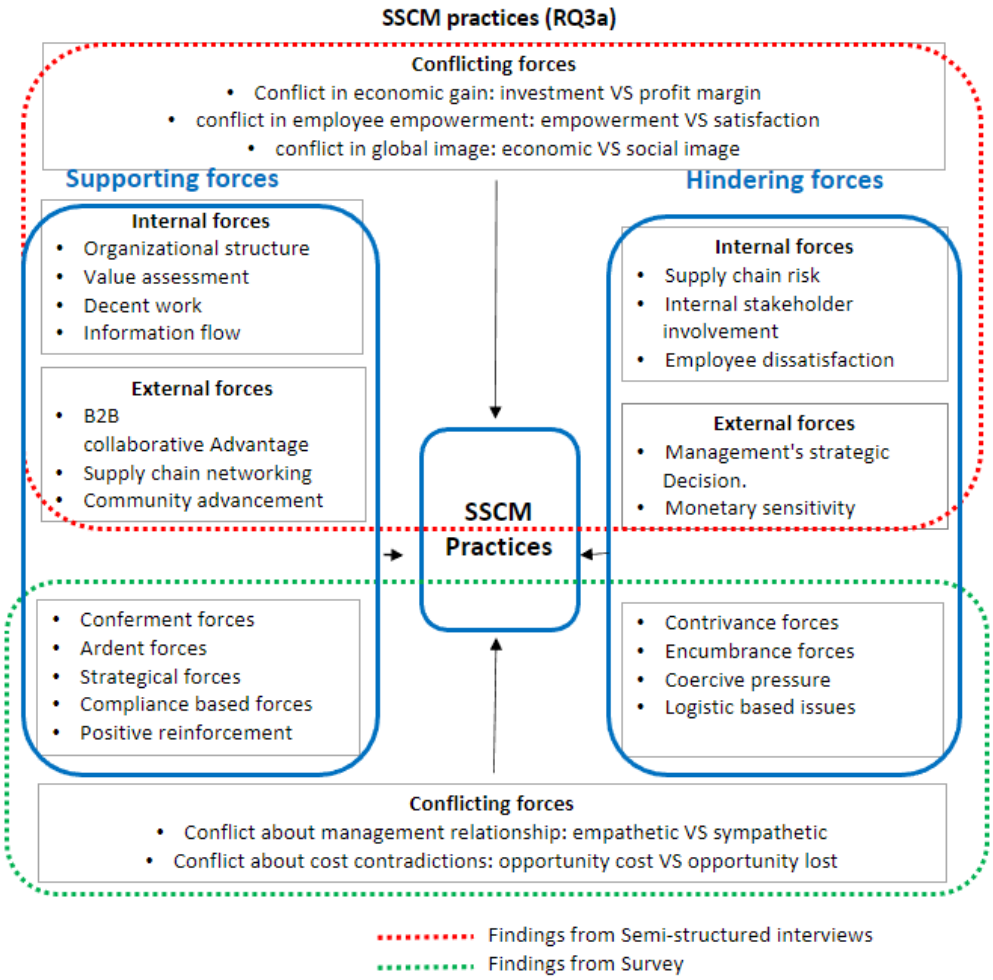
Both empirical findings revealed several considerations, such as cost and resource concerns, particularly fixed investments for sustainability improvements and increased production-related costs, which were the most significant barrier that prevented garment suppliers from implementing SSCM practices. This finding is consistent with previous research (De et al., 2017), which suggested that other SC stakeholders such as enablers and influencers such as sponsors and unions can play an important role in SSCM implementations by offering the latest resources for technological and environmental advancement and investments for sustainable implementations, which can act as a remedy to influence sustainable practices. But the qualitative findings, provided evidence of this is hardly the case. Further to that, Lund-Thomsen and Nadvi (2010) also showed that other SC stakeholders like international NGOs, regulatory authorities, and associations could create dominant collective coercive mechanisms for highly visible SSCM practices. Interestingly, these assumptions also provided evidence of the consistency of these research findings.

6.4 RQ3a: What are the available stakeholder forces related to SSCM practices in the Bangladeshi garment industry?

Moving on to Research Question 3a, this study extends the empirical research stream of SSCM in the Bangladeshi garment industry (Nath et al., 2020; Huq and Stevenson,

2020) by providing more detailed information on the available stakeholder forces related to SSCM practices. In particular, this study attempts to investigate the stakeholder forces that may support or hinder the implementation of sustainable practices. As shown in Figure 6.3, this thesis shed light on supporting, hindering, and some conflicting forces that could improve sustainable practices from both internal and external stakeholders.

Figure 6.3: Stakeholder's forces related to SSCM practices.



6.4.1 Internal forces – based on qualitative findings.

In terms of internal forces, the first and foremost is the **organisational structures** of Bangladeshi garment factories, where it is clear that LEED regulation and Bangladeshi Accord and Alliance certifications are related to both internal and external sustainable practices. LEED is actively involved in the establishment of a new infrastructure that

combats air, water, and noise pollution, allowing certifications to work with the health and safety standards of garment workers, which are highly dependent on the infrastructural situation of the factory. Accordingly, certifications also suggest some standardisation value for the business. This interpretation agrees with the previous studies of Huq et al. (2016) and Nath et al. (2019), which term this type of union as a 'buyer consortium audit' where legislative bodies facilitate the monitoring of sustainable practices. These findings are consistent with the aspects of the **value assessment** of the organisation.

By focusing on the forces that affect SSCM practices, this study has specifically identified the importance of **decent work** and the risk to the **supply chain.** In particular, a view from lower-level management expressed that compliance practices have a deep relation with supply chain finance. This agrees with previous studies (Nath et al., 2020; Tseng et al., 2019) which identified that economic struggles inhibit social sustainability practices, and that sustainability can be seen as excessively costly (Soundararajan and Brown, 2016). In particular, a comment from a top-level manager also justified the argument: *'I heard a rumour that [for those who want] to practice sustainability in their operations, [the] government will give them [a] loan with lower interest rate or other benefits, but [I'm not sure about the evidence. From buyers, we have not received any higher prices or anything yet for our initiatives. '* (PF2-TM).

The participants also shed light on the hidden side of SC actors, including unethical competition between partners and lack of consistency to make more money. However, in other instances, the internal stakeholder (i.e., top management) also talked about how suppliers sometimes engaged in mock compliance with respect to social and environmental sustainability practices, for example, compliance certificates. Therefore, legislative certification is sometimes overlooked, but at the same time, it is justified that this only works when the supplier has already retained some statutory standard.

Another view expressed that compliance practices have a deep relationship with supply chain finance. This agrees with previous studies (Nath et al., 2020; Tseng et al., 2019) which identified that economic struggles inhibit social sustainability practices, and that sustainability can be seen as excessively costly (Soundararajan and Brown, 2016). Financial support might help here as a remedy, although this appears to be more forthcoming from the government than from retail buyers.

For employees working in the garment factory, **employee dissatisfaction** with management decisions means that there is a need to engage effectively with these actors, therefore, ensuring that the importance of SSCM practices is fully understood. For example, a lack of appreciation for employee performance evaluation is common on factory premises, which can result in frustration for operatives (Gupta et al., 2018). The consequences of such actions can be felt in all other sustainability practices where employee performance can affect operations. Management also needs to consider how to improve employee satisfaction, for example by providing enough incentives to minimize resistance to employees' jobs switch.

6.4.2 External forces – based on qualitative findings.

Turning to external forces, there was evidence to suggest that both **B2B collaborative advantage** and **networking** have a strong connection to sustainable performance. In particular, many examples have been given in which stakeholders have shown their commitment to sustainable practices. This is consistent with previous research (Nath et al., 2020; Yadlapalli et al., 2019), which identifies supplier qualification with relationship mechanisms that played an integral role in sustainable decision-making by manufacturers. These findings slightly contrast previous research (Huq and Stevenson, 2020) that buyers are prepared to source from noncompliant factories to maintain their profits, which is a noticeable hindering force for sustainable practices and further supports the argument that developing countries stakeholders value price (**monetary gain**) over sustainability.

Similarly, Glover et al. (2014) pointed out that economic security is stronger than environmental and social logic and occasionally inspires stakeholders to be non-compliant. Therefore, the development of the **community** can be more widely felt in garment factories than when just considering SSCM practices in the manufacturing sectors. This argument is supported by Montabon et al. (2016), who acknowledged that economic interest suppressed social and environmental interests while considering the sustainability of firms. The transparency of the process among the SC partners could be a probable solution to this situation.

Although internal stakeholders may have the ability to invest in improvements in health and safety, most suppliers find it difficult to integrate these improvements due to resource constraints. These findings are consistent with previous research that found that initial supplier investment (Giunipero et al., 2012), higher financial costs (Ageron et al., 2012; Chkanikova & Mont, 2015), and resource constraints of small firms (Hervani et al., 2005; Jenkins, 2006; Oelze et al., 2016) were the most cited internal practices for implementing SSCM practices. However, procedural justice, particularly the economic and noneconomic support of global purchasing firms of suppliers, can facilitate the successful implementation of SSCM practices (Boyd et al., 2007). Turning to the implications of **strategic decision-making** by management, it is necessary to understand the SSCM practices of the garment industry in more detail to avoid the tension between **supply chain networking** and **financial sensitivity.** This may restrict SC stakeholders for future improvement and reflects the need to influence SSCM practices.

6.4.3 Conflicting forces – based on qualitative findings.

The empirical findings of Chapter 4 show that there exist a large number of supporting forces for successful sustainability implementation, but, simultaneously, a number of forces are impeding stakeholders. Three main areas of conflict between these were

identified from the interview data, summarised in Figure 3: (1) conflict in the cost of sustainability and economic gain; (2) conflict in standardisation and employee sustainability; and (3) conflict in economic gain and social image.

6.4.3.1 Conflict in economic gain: investment versus profit margin

Several participants suggested that garment manufacturers experienced financial difficulties when implementing SSCM. In the evidence, the buyers did not confirm any additional monetary benefit for sustainable initiatives. For example, manufacturers adopted different types of rules and regulations to enhance environmental and social sustainability through large investments, but then lost profits because they did not get enough orders or an appropriate price point from buyers. As an example, the owner of BD-O explained: *'…after Rana Plaza and Tazreen fashion accidents, we are investing a lot in health and safety standards and building new infrastructure. We perceived that order quantity as well as the price point will be increased slightly by buyers. But that does not actually happen... Price is at the same level, and, at some point, it is lower [than it was before], and the cost is growing... and ultimately [the] profit margin is shrinking.'* Garment manufacturers are struggling with cost-related decisions while integrating sustainable environmental and social investments in their premises. A remark from a top-level manager also agreed with this viewpoint: '*We have to be visionary while thinking about sustainable practices…. The initial training and rebuilding will be expensive, but we can hope that the ultimate result will be fruitful. At least it will create a brand image and help to get more [orders from buyers].*' (LS2-TM). This finding provides greater insight into initial findings from Nath et al. (2020) that Bangladeshi stakeholders perceived sustainability-related costs as an expense but not as an investment.

6.4.3.2 Conflict in employee empowerment: employee empowerment versus employee satisfaction.

Despite numerous health and safety compliance initiatives, progress in creating decent work is limited. A comment from FT3-BM: *'... all types of rules, such as ACCORD or ALLIANCE, talked about workers' safety and benefit, but what about us [middle managers]. Like what will boost our engagement, or what will give us safety from [getting sacked] or anything... You need us... without us, you just cannot operate anything here 'make it* obvious that there has been some improvement in workers' health and safety, but these are not enough for the level of employees, specifically from the administrative point of view. Prior research suggested that engaged and motivated employees played a vital role in sustainability excellence (Diabat et al., 2014). Therefore, improvements in employee social sustainability can significantly mitigate sustainability risks for manufacturing firms (Hoque et al., 2020). Apart from mitigating this, factories would be motivated to increase employee social sustainability in the supply chain since they are advised to abide by Ruggie principles (2011). These principles require a variety of actions to uphold employee rights and treat employees as 'responsible corporate citizens' and employ recognition for all employees (Kuruvilla and Li, 2021).

6.4.3.3 Conflict in the global image: economic gain versus social image

Another significant conflict arises from the way Bangladesh is perceived around the world. Although Bangladesh has an increasing number of LEED-certified factories, the global image/reputation of the Bangladeshi garment industry has not changed much (The Daily Star, 2021). This leads to a disconnect between the global reputation of the Bangladeshi garment industry and the reality observed by stakeholders in Bangladesh: *"After the Rana Plaza accident, when buyers landed at Zia Airport [International Airport of Bangladesh], the first thing that came to mind [buyer] was that*

we are not practising social and environmental sustainability appropriately here. But if you see the global picture, [Bangladesh has] the highest number of LEED-certified green factories compared to other countries. But this has not really changed our image.' (BD3-TM). Internal stakeholders are well informed about the global garment picture, frustrated with this perception and see it as a possible hindering force for sustainable implementation. This result provides a more comprehensive view of the initial result from Nath et al. (2020) suggested that confusion and a lack of awareness from stakeholder perspectives could be significant factors in dissociating sustainable practices, the evidence from this study confirms this assumption and lays the foundation for deeper research in this area. Continuing to explore this topic can yield invaluable insights.

6.4.4 Supporting forces – based on quantitative findings.

Similarly, the qualitative findings of this research study also extend the empirical research momentum of SSCM practices, specifically by highlighting the supporting forces from the point of view of the employee in the factory. As shown in Figure 6.3, the quantitative findings (see Table 5.26, Chapter 5) of this thesis mainly highlighted several **conferment** forces, such as growth, **empowerment, positive behavioural norms,** and **managerial feedback** as supporting forces for SSCM practices. This is consistent with previous research (Azim et al., 2021; Chowdhary, 2017), which identifies that the sustainable mindset of employees played an integral role in sustainable practices on the shop floor and aspects such as growth, empowerment and positive feedback play an important role in diverting the mindset of employees toward more sustainable practices. The second is the **ardent forces (**see Table 5.26), which contain several empathetic aspects of human behaviour, such as**- appreciation, positive emotion, proactive attitude, motivation** and **sense of pride** slightly replicate the decent work phenomenon of SSCM practices. These findings match with aspects of the employee's perception of implementing green supply chain management, where Masa'deh et al. (2017) identified employee emotional behaviour and legislation for eco-friendly practices that affect economic performance in the service industry. Other than that, the research on the implementation of SSCM

practices through employee participation in the context of a developing country is scarce.

By focusing on the compliance-based forces that affect SSCM practices, this study has particularly identified several **compliance-based forces**, such as support, encouragement, transparency, a living wage, and health and safety standards of shop floor premises play an integral part in employees' productivity. However, survey research participants express their varied perceptions regarding the importance towards internal instrumental aspects that propel them to adopt SSCM practices. For example, while top management (i.e., interview respondents) separated themselves from the garment working class, the survey respondents highlighted how the compliance structure worked both for garment employees and workers. The finding of this study clearly supports the instrumental aspects of stakeholder theory by suggesting that most of the lower-level of garment employees take into account the interest of SSCM in 'that achievement of corporate objectives' (Hörisch et al.,2014).

6.4.5 Hindering forces – based on quantitative findings.

Turning to the implication of hindering forces from lower-level of garment employees, the finding suggested a strong connection between **contrivance forces** (i.e., congested workstation, lack of support and lower mechanism) and **encumbrance forces** (see Table 5.26), while embracing SSCM practices in shop floor activities. Several respondents highlighted 'peer pressure' as a hindrance to productivity, while management assumed it was an influential act. This identification goes with previous research (Sajjad et al., 2015; Huq et al., 2014; Ageron et al., 2012), which suggested that top management valued personal commitment as a supporting force and placed their expectations and interest on lower management for higher business performance, specifically while sustainable practices placed in factory's operational activities. However, this assumption also could create pressure on lower management to be productive all season, which is actually a hindrance for SSCM practices.

Furthermore, the findings of this study clearly support the significance of **coercive pressures** from external stakeholders by indicating how garment factories seek validation from external stakeholders (i.e., sponsors, media, NGOs and other pressure groups) and attempt to manage their expectations and competitive interest in sustainability issues (Nath et al., 2020, Hörisch et al., 2014). This may enhance periodic gain but create a constraint for lower-level employee management. For example, the lack of an experienced technician and a qualified professional is somehow related to institutional pressures where the employee's mindset played an integral role in SSCM practices (Hörisch et al., 2014). Similar to this, interviewed participants also highlighted, management needs to consider employee satisfaction over validation, to minimise resistance to the employee's job switch. Finally, some survey respondents mentioned **logistics-based forces**, such as how 'transportation' and the imbalance between 'shipping costs' could impede SC while exporting the finished product. This finding is mutually exclusive of qualitative findings, as the interviewees identified 'vulnerability' as a supply chain risk, while the survey respondents identified geographical dispersions of road and transport, particularly in Dhaka City, and the associated shipping cost as a hindering force for the SSCM practices.

Nevertheless, this differentiation appears may be due to the nature of the respondents to this study. Survey respondents basically highlight the idea from the lower-level of shop floor employees (i.e., particularly involved with production operations of a specific floor/line), whereas interview respondents are the top-level of employees (i.e., particularly involved with the management of the lower-level of employees as well as acted as a decision maker). Ultimately, these findings are highly likely to be one of the suggestions that should be recommended for future research.

6.4.6 Conflicting forces – based on quantitative findings.

Likewise, the qualitative and quantitative findings also identified some supporting forces for successful SSCM implementation, but also highlight a number of impeding

forces. Similarly, to conflicting forces, the lower level of employees highlighted two major areas of conflict, where SSCM practices could create confusion.

6.4.6.1 Conflict about the management relationship: empathetic versus sympathetic.

Several survey participants highlighted the importance of an 'empathic relationship' at the factory premises rather than a 'sympathetic relationship'. Basically, the garment industry is a manufacturing-based industry, where the main workforce is related to human behaviour and/or human engagement, and increased productivity in the workforce often leads to a certain amount of distress management (Manrique et al., 2018). A great part of the job of garment workers involving colleagues in the sustainability process, where the fellow colleague could feel connected to the sustainability process rather than imposed. For example, empathetic behaviour could enhance productivity better than automation, while an extreme human operation is needed (Reynolds and Scott, 2000). However, there is often a scope for disputes when terms such as 'empathy' and the related concept of ‘sympathy’ are evoked. Several psychological scholars (Gerace, 2020; Wispe, 1986) suggested the 'empathic relationship' as a process of taking the cognitive perspective of others that involves experiencing emotions such as care and concern (Gerace, 2020), while the 'sympathetic relationship' denotes 'heightened awareness of the suffering of another person as something to be alleviated’ (Wispe, 1986). Therefore, the sympathetic relationship could be a hindrance to SSCM practices, as it can come from normative pressures of the institutional mechanism (Scott 2001).

It's interesting to note that conversations involving psychological aspects of human behaviour research are quite common in the HRM field, yet they seem to be quite unusual in the SCM literature (Bergeron, 2023). It's important to consider the impact of human behaviour on SCM, as it can have a significant effect on the success of an organization's operations. For example, in the case of garment workforce supervision, typically to begin with, the lower-level of employees adopt the superior's view towards

sustainability practices and try to channel these assumptions to get better performance from garment workers, where ‘empathetic relationships’ with garment workers could ease the process. On the contrary, these could be indispensable (Gerace, 2020) along the way, if management uses 'sympathetic relationships' for lower levels of employees.

6.4.6.2 Conflict about cost contractions: opportunity cost versus opportunity lost.

Another significant conflict arises from the perception of cost contractions within the factory premises. In response to the recent recession, the garment industry faced a huge crisis in order quantity, specifically the opportunity cost for LEED-based factories and nonLEED factories have a huge gap. A dispute can arise as to how sustainable opportunity is treated in response to cost contractions. In factory premises, several patterns of cost compression are available, such as managerial, technical, commercial, financial cost compression, skilled labour, technical facilities, etc. In response to these, the greatest compression is the 'worker layoff', or ‘employee layoff’. To achieve sustainable goals, management should consider 'sustainable practices' as an opportunity, rather than an increase in cost, and focus on long-term goals by ensuring quality management through training and development, rather than searching for ‘cheap labour/employee’ in response to cost contractions.

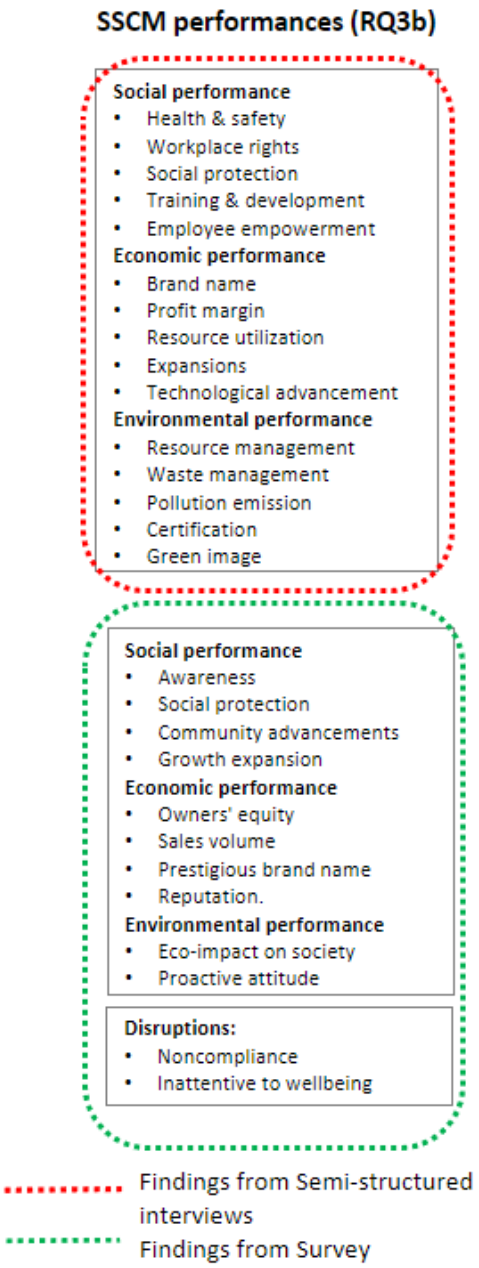
Workers are the forefront contributor in for the garment business, who are directly involved with the production. In response to the recession and institutional pressures for cost compression, management often misinterprets the opportunity and decides to go for the layoff. Consequently, the factory faced a scarcity of skilled employees. This led to confusion between opportunity cost and opportunity loss. In order to achieve a sustainable goal, management should focus on training and development and quality management system, such as professionalism in shop floor activities while providing positive feedback, organizing knowledge-based workshops, training, and seminars etc, while working on employees’ empowerment to increase factories’ efficiency. Although these endeavours could increase cost for the time being, which Glover et al.

(2014) pointed out as economic scarcity and highlighted for a manufacturing-based business-like garment industry, economic security is stronger than maintaining sustainable practices. This argument is viable, as Huq et al. (2014) also found confrontational relationships between top-level and low-level of management while practising social sustainability in operations. The evidence from this study confirms this to be the case.

6.5 RQ3b: What are the available stakeholder forces related to SSCM performances in the Bangladeshi garment industry?

Moving on to Research Question 3b, the research respondents highlighted several SSCM performances, as a result of shop floor SSCM practices. As shown in Figure 6.4, this thesis sheds light on numerous SSCM performances, subject to Elkington's triple bottom line dimension of sustainability.

Figure 6.4: Stakeholder forces related to SSCM performances.



6.5.1 Social performances

This study expands the empirical research base of SSCM performance (Nath et al., 2020; Huq and Stevenson, 2020) by providing more detailed information from two types of internal stakeholder perspectives. As shown in Figure 6.4. both categories of inbound stakeholders highlighted some SSCM performances, which actually evolve from sustainable practices on the shop floor. The first is social performance; the

qualitative findings highlighted several forces related to SSCM performance, such as **health and safety standards, workplace rights, social protection, training and development,** and **employee empowerment.** These identifications coincide with the idea of a 'corporate social performance' catalogue, which kind of replicated various social issues related to business operations (Huq et al., 2014), except employee empowerment. Although, the qualitative findings of this study contradict the idea of Huq et al., (2014).

Evidently, several interview respondents highlighted the importance of decent work and added employee empowerment as an affiliated function for sustainable practices, and prior research like Nath et al. (2019) argued that social responsibility is incorporated with the philosophy of social reaction under one name. Furthermore, research showed that an empowered employee can do better both within and outside the workstation and the ability to influence the direction of social practices to create more just social and economical performance, within and outside the factory boundaries (Adhikari & Bisi, 2020, Soundarajan & Brammer, 2018).

Moving toward quantitative findings, in response to the significance of the shop floor operational activities, survey respondents highlighted performances like, **awareness, social protection, growth** and **expansion** developed through factories' sustainable practices. This agrees with previous studies (Huq and Stevenson, 2020) which identified management's attitudes towards sustainable practices, encouraging internal stakeholders to learn about the rewards of sustainable practices. Interestingly, the quantitative findings of this study also suggested the significance of workplace rights and social protection in the shop floor's social performances. This finding is consistent with previous research (Soundararajan et al., 2018, Wu et al., 2012; Zhu & Sarkis, 2007), where researchers suggested that government mechanisms and garment associations played a facilitating role in management's social performance, by monitoring the safety improvement process under ACCORD.

6.5.2 Economic performances

Based on the qualitative finding, this study provides several evidence that a factory's **profit margin** is significantly influenced by the strength of its **brand name**. This builds upon the research conducted by Jajja et al (2019), which demonstrated through a moderating analysis of 164 respondents in Pakistan that individual factory's private standards, like compliance standards can improve economic performance. However, this study goes further by identifying that a strong compliance standard can elevate a factory's image as a distinguished **brand name**, which ultimately could lead to a significant boost in **profit margin**.

Additionally, the qualitative findings also expand the empirical research of Kanna (2018) by highlighting the relevancy between **profit margin** and **utilization of resources,** reckoned as a substantial issue, particularly in relation to the production value which often pertains to the total sales generated by a production line and provide evidence that one way to improve is by getting lower-level employees more involved in the process. Consequently, to ensure the involvement top management often declares some monetary achievement for superior performance within production lines, as a gift and prize, which actually work in two ways. On one side, this kind of economic performance provides the foundation for more sustainable arrangements, and on the other side, it motivates employees to adopt technological advancement in their day-to-day operations.

Furthermore, there was evidence to suggest that **sales volume** and **factory reputation** have a strong connection to SSCM performance. For example, many examples were given where inbound stakeholders have shown their commitment to SSCM practices. This argument also expands the idea of blending relationship mechanisms with **reputation** in contextual research by Yadlapalli et al., (2019), which identifies the relationships mechanisms between SC stakeholders played an integral role in sustainable management decisions, as well as the evaluation of the reputation of the factory.

As the evidence showed in Figure 6.4, internal stakeholders tend to follow the successful sustainability norms of competitors to effectively implement economic performance. One of the key sources is the use of a **prestigious brand name** to get production orders from buyers. This identification is consistent with previous research (Hofmann et al., 2018), which found that recognition among competitors often influences internal stakeholders to follow and implement sustainable practices. Interestingly, findings of this study also indicate that some manufacturers showcase their best practices in sharing groups and voluntary frameworks, specifically for the United States Green Building Council (USGBC). This may be possible, due to the financial solvency that LEED-based factories have, the opportunity to join USGBC. This finding is consistent with (Sancha et al., 2015; Zhu & Sarkis, 2007), which found that successful competitors influence the observation of sustainable practices through a voluntary framework. For example, Sancha et al. (2015) argued that economic gain is the only significant institutional mechanism that deeply influences inbound stakeholders to follow sustainable practices in their operations.

6.5.3 Environmental performances

Moving towards the implication of environmental performance, several respondents recognise the importance of **certifications**, **waste management,** and **pollution emission**. This finding supports the findings of a significant body of research (Nath et al., 2020, Sayed et al., 2017, Grimm et al., 2016, Soundararajan and Brown, 2016), which supports that government stakeholders often improve their environmental performance in order to achieve a balance between **green image** and **resource management.** For example, Grimm et al. (2016) argued that the eco-practices of manufacturers and their sub-suppliers are often accessed against the buyer's code of conduct through inspection. Additionally, several research respondents indicated that certification from legislative bodies and environmental compliance practices, such as the use of ETP (effluent treatment process), on-site visit, and self-assessment could enhance environmental performance. This finding is consistent with previous research, which argued that LEED-based factories experienced fewer pressures for environmental sustainability, as they already maintained some statutory guidelines

(Nath et al., 2019, Awasthi et al., 2018, Meinlschmidt et al., 2018). This is because LEED-based garment factories are mostly large in infrastructure (Awasthi et al., 2018), and sustainability activities are visible to buyers (Meinlschmidt et al., 2018) and also often supported by wider stakeholders (Nath et al., 2019).

Interestingly, the survey respondents reported a proactive attitude to institutional pressures and mechanisms for environmental performance. The findings of this study revealed that green/eco/environmental sustainability often comes from various sustainability-related practices, such as awareness, training, workshops, technological advancement, infrastructure setup, etc. This finding is consistent with previous research (de los Reyes Jr et al., 2017, Reinecke & Donaghey, 2015), which highlighted stakeholder collaboration for awareness-raising training can act as a normative pressure to develop sustainability standards. For example, the collaboration with BGMEA and BKMEA helped to monitor the implementation of environmental practices, particularly the elimination of carbon emissions in textile production.

6.5.4 Supply chain disruptions

The findings of this thesis also identified some key performance indicators of SSCM, which could disrupt supply chain activities. The first type of disruption is **non-compliance/in-compliance with environmental** rules on regulations. Several survey respondents indicated that government owners often follow environmental regulations just for one of the ideal factories, and capitalised on this image to get higher production orders from buyers. This is consistent with previous studies by Huq et al. (2014), which identify that buyers and management engaged in mock compliance, mutually compromising the responsibility for maintaining codes of conduct. This finding is important, as Wilhelm et al. (2016) also acknowledged this disruption and resembled it as a contingency factor where buyers relaxed their sustainable perceptions to get higher profitability. Similarly, Locke et al. (2013) also highlighted buyers' poor functional alignment often encouraged manufacturing bases stakeholders to violate the formal SSCM practices, such as switching towards sub-suppliers who do not

comply with sustainable practices, use of cheap materials in garment production. As a result, this situation also creates a hindrance towards successful SSCM performance.

Another important finding is management **inattentiveness to well-being.** Some survey respondents revealed the existence of confrontations between the management attitude towards employee well-being. As the quantitative findings (see Table 5.26, Chapter 5) provide evidence of contrivance practices, some of the findings indicated critical concern about a lower mechanism and lack of support from a management perspective. This may be due to a lack of expertise and professionalism in shop floor activities while providing positive feedback. This finding supports Hörisch et al. (2014) argument of the scarcity of skilled employees and the lack of professionalism within the highest level of management's employees. Following this argument, Huq et al. (2014) also found confrontational relationships between the top-level and the low-level management during the social sustainability improvement process.

6.6 RQ4: How does employee engagement enable SSCM practices?

By observing the importance of employee involvement in garment factory shop floor operations and the decision of stakeholders on SSCM practices, this study examines the influence of employee involvement as a driving force due to the fact that it has the power to encourage the willingness to adopt SSCM practices more in shop floor operational activities. As shown in Figure 6.4, this thesis sheds light on both the direct and indirect relationship between employee engagement and SSCM practices.

6.6.1 Direct relationships

6.6.1.1 Stakeholder Decisions (SD)

Strong evidence was found that stakeholder decision played a contradictory role (see Table 5.24) in facilitating both firm performance and employee participation in the adoption of SSCM practices within the shop floor operational activities. Aspects such as familiarity, stakeholders' development activities, and culture acted as positive reinforcement in stakeholder decisions, while inspection, stakeholder pressures, and periodic gain represented coercive pressure from internal stakeholders. These identifications match with previous studies (Hoque and Rana 2019; Sajjad et al., 2015; Huq et al., 2014), where several researchers indicated that manufacturing-based stakeholders are the direct drivers (Huq et al., 2014) in facilitating the adoption of SSCM practices (Sajjad et al., 2015). For example, through a systematic review Hoque and Rana (2019) explained that the working environment and its relation to organisational performance are critical, however, aspects like relationship orientation, cooperative mindset, collaborative attitude, and strategic orientation could bring a bigger change in business performance where stakeholder decision toward sustainable practices is inevitable.

However, Huq et al. (2014), through an exploratory study of social sustainability, highlighted the need for strategic decisions of stakeholders on socially sustainable practices and showed how aspects such as human rights (i.e., child labour and freedom of association); health and safety (i.e., safer working conditions); community advancement (i.e., charitable initiatives) could improve sustainable exposure to buyers. In this regard, this finding of this study confirms Huq et al (2014), by highlighting the contribution of stakeholder decision to mutual understanding in the implementation of SSCM practices, as well as performance in factory premises, which are governed by both buyer institutional pressures and stakeholder knowledge. For instance, several garment experts such as academic authority and legislation bodies could guide the internal stakeholder knowledge and decision towards more sustainable practices. However, stakeholders' decisions gradually join the mainstream

literature of sustainable practices, driven by enhanced sensitivity to ethical issues (Quazi and O'brien, 2000).

6.6.1.2 Employee Engagement (EE)

This quantitative finding of this study confirmed that employee engagement has a significant impact on firm performance and SSCM practices (see Table 5.25). However, several researchers suggested that institutional aspects such as productive attitude, feedback, and high salary facilitated employee engagement in SSCM practices, specifically in manufacturing-based organisations (Azim et al., 2021, Mark and Shevchenko, 2013). These arguments are consistent with the quantitative result of this thesis (see Table 5.21, Chapter 5) and highlighted several positive aspects, such as conferment (i.e., growth, empowerment, positive behaviour norms and feedback) and strong practices (i.e., appreciation, positive emotion, motivation, proactive attitude) have a greater impact, while aspects such as brand image, sense of pride, and stress have a lower impact on the employee engagement of the shop floor. These findings match with prior studies (Azim et al., 2021; Chowdhary. 2017). For instance, Azim et al. (2021) indicated that factories' internal employees could determine the level of compliance for better workplace engagement, thereby assisting sustainable practices in recombining and utilising their substantial influence. This argument is viable, as previous SSCM scholars (Sharma, 2014; Ashby et al., 2012; Carter and Easton, 2011; Carter and Rogers, 2008) offered useful summaries of employees' participation in sustainable practices and where organisations can get most of it and where future prospects lie.

However, from a contextual point of view Sajjad et al. (2015) highlighted the importance of certifications like ACCORD and Alliance in the shop floor's engagement. For example, according to ACCORD principles, manufacturing companies must follow a set of social criteria for sustainable practices in shop floor activities, particularly for garment workers, to meet ACCORD requirements (Chowdhary. 2017). When it comes to employee engagement, particularly scholars in the service industry have indicated that employee mindset and positive behavioural norms towards hotel management

have a great impact on the implementation of SSCM practices (Masa'deh et al., 2017), along the lines of literature about employee participation is scarce in the sustainable manufacturing industry.

Although several researchers highlighted employee engagement at work with the compliance structure as the organisation's social performance (Chowdhary. 2017; Sharma, 2014). However, from a contextual point of view, there is still a gap in the employee's perspective on SSCM enhancement. This study emphasised this gap and discovered several forces such as growth, empowerment, appreciation, motivation, encouragement, an appropriate living wage, and a sense of pride worked as supporting aspects for employee engagement in factory premises**.** Whereas forces like congested workstations, lack of support, lower mechanisms, peer pressure and stress acted as institutional pressure in SSCM practices. This identification is viable, as previous SSCM scholars (Ashby et al., 2012; Carter and Easton, 2011; Carter and Rogers, 2008), considered employee participation as a significant aspect of sustainable practices of organisations.

6.6.1.3 Firm performances (FP)

Strong influence has been found between firm performance and sustainable practices, as well as the relationship between employee engagement and stakeholder decisions (see Table 5.25). Consistent with previous literature, this study found that manufacturing-based garment business's firm performances (i.e., social performance, economical performance, and environmental performances) have a positive and significant effect on sustainable practices and employee engagement. As discussed in Chapter 5 (see Table 5.26) several aspects like awareness, community development, expansion, and factory circumstances have been identified as the indicators measuring the social performance construct. The measurement model evaluation (see Table 5.22, Chapter 5) demonstrates that garment factory's social performances are strongly related to all the constructs, except awareness, which denotes that these indicators vary with regard to measuring the social performance construct. This is important because prior study (Adhikari & Bisi, 2020, Jajja et al.,

2019; Soundarajan & Brammer, 2018; Klassen & Vereecke, 2012), found that garment infrastructure, like the LEED standard, played an important role in setting shop floor's decent work and health and safety standards.

In response to economic performances, this study found that aspects like- garment factory owners' equity, sales volume, and brand image are integral elements for garment factory's economic performances, whereas environmental reputation might not be as influential (see table 5.22, Chapter 5). These findings are consistent with the previous study (Chowdhary et al., 2020; Nath et al., 2019; Huq et al., 2014), where researchers highlighted that the strategic goals of the firm toward economic growth (Chowdhary et al., 2020) not only represent strong financial capabilities (Nath et al., 2019) but also stipulate recognition, such as brand image (Huq et al., 2014). Surprisingly, this study found a lesser influence on environmental reputations in discussions of economic performance. The nonsignificant result occurred may be due to the fact that lower-level of garment employees represent just the operational activities and may not be involved with economic viability i.e., long-term performance evaluation of environmental sustainability (Steurer et al., 2005).

Moving towards environmental performances, this study found two aspects, i.e., environmental impact on public and management attitudes towards non-compliance, have contradictory impacts on garment factories' environmental performances (see Table 5.22, Chapter 5). The former result undermines the findings of the previous literature (Chowdhary et al., 2020; Phan et al., 2020; Yadlapalli et al., 2018; Steurer et al., 2005), where researchers highlighted government mechanism (Yadlapalli et al., 2018), waste management (Phan et al., 2020), carbon emissions (Steurer et al., 2005) and green materials (Chowdhary et al., 2020) are greatly involved with some serious sustainability challenges that garment industry is facing as a whole. This is maybe because of the nature of the respondents, where lower-level of employees related to the supervision of garment workers rather than the decision-making phase. Turning to the second aspect, the non-compliance feature of management is basically involved with the sustainable decision of the top management, which may not be identified by the survey respondents in this research.

6.6.1.3 SSCM practices (SSCM)

In line with the literature, this study found strong evidence that SSCM practices have a strong impact on stakeholder decisions, employee engagement, and firm performance (see Table 5.24, Chapter 5). For example, Chowdhary et al. (2020) conducted interviews and found that Bangladeshi garment manufacturers often criticise the compliance requirements of foreign buyers, owing to less advanced environmental regulations and enforcement in Bangladesh. This study confirmed this argument by providing evidence of positive influence (see Table 5.20, Chapter 5) on compliance-based practices (i.e., encouragement, skilled employee, compliance standards, and collaboration with other SC stakeholders). For instance, Habib et al. (2018) highlighted that although the Bangladeshi government has issues with environmental laws, the latter might not be backed by the government mechanism of SSCM practices. In this regard, rather than just stakeholder collaboration (Nath et al., 2019) and supplier encouragement (Chowdhary et al., 2020), foreign buyers tend to seek local authorisation (i.e., Unions, other regulatory bodies) to enforce sustainable practices with factory premises, particularly for social sustainability.

Additionally, this study also identified some strategic aspects (i.e., commitment, audit, network with partners, organic materials for quality management) that have less impact on firm SSCM practices (see Table 5.20, Chapter 5). This result somehow undermines a previous study (Giménez & Sierra 2016), which found that stakeholder commitment to sustainable practices is integral to SSCM performance. As in the previous discussion, this may be due to the nature of the respondents in this study. A key feature of SSCM practices is the networking with SC partners (Jayant & Azhar, 2018) which is largely absent from the findings of this study. This is also true for the use of organic materials (Amindoust & Saghafinia, 2017). Several SSCM researchers highlighted these aspects and their associative performance which can be related to any type of business activity. For example, sustainable economic performance resembled the activities related to business profit maximisation and revenue-based aspects (Carter & Rogers, 2008) whereas environmental performance resembled the holistic balance between the integrative development of business and its ecological

growth (Nath et al., 2019). Similarly, social performance promotes the integration of social activities of a business, particularly from all levels of stakeholders (Winter & Knemeyer, 2013). This is highly likely one of the recommendations that should be followed for future research.

6.6.2 Mediated relationships

This study proposed that employee engagement mediate the relationship between stakeholder decision and firm performances (i.e., social performances, economic performances, environmental performances, and SC disruptions).

6.6.2.1 H1a: EE mediates the relationship between SD and SocP

The empirical results showed that employee engagement partially mediates the relationship between stakeholder decisions and organisational social performance (see Table 5.28, Chapter 5). In the current context of the relationship, between stakeholder decision and social performance, employee engagement does not have any direct influence on factory's social performance, although employee engagement has a direct effect on stakeholder decisions which influences the social performance. The findings implied that employee engagement indirectly influences the social performances of garment factories.

As one of the main stakeholders, Berns et al. (2009) provide an explanation for the mediating relationship of employees. Initially, employee engagement involved the sustainable mindset of stakeholders, which could bring a major development in shop floor social performance (Azim et al., 2021). In stakeholder theory, employee engagement is vital because it improves workers' performance through training and development and by maintaining health and safety standards (Longo et al., 2008). Therefore, employee engagement influences stakeholder decisions on the subject of social performance to adopt SSCM practices. However, Bangladeshi garment

companies rarely value a lower level of employee engagement in sustainable practices and often employ similar regulations for both employees and garment workers (Miles 2017, Huq et al., 2014). For example, qualitative findings evidently showed that dispute. Recognising the value of employee engagement from a strong performance evaluation position may give the garment factory confidence to adopt SSCM practices within the operational activities on the shop floor.

6.6.2.2 H1b: EE mediates the relationship between SD and EcoP

Likewise, the previous assumptions the empirical findings showed that in the current context of the relationship between stakeholder decision and economic performance, employee engagement has a complementary influence on a factory's economic performance. One possible reason is that employees are the driving force for practising SSCM practices on factory premises, they showed enthusiasm and commitment to cooperate with sustainable guidelines more than anyone else in the factory, perhaps in exchange for monetary benefit or recognition (Rahman et al., 2016). Furthermore, it would be difficult for a company to ignore the institutional mechanism for sustainable practices, particularly from buyers who are perceived as the most significant stakeholders of the business. In this regard, management inevitably depends on employee performance for sustainable practices (Phan et al., 2020; Sajjad et al., 2015).

6.6.2.3 H1c: EE mediates the relationship between SD and EnvP

Interestingly, employee engagement has a partial influence on the relationship between a stakeholder decision and an organisation environmental performance. Basically, this requires a discussion of a lesser engagement in environmental practices and the perspective of lower-level employees on environmental performance. First, to clarify the environmental impact of SSCM practices in manufacturing factories, Steurer et al. (2005) argued that the garment business is directly related to carbon emissions and avoidance of hazardous damages for ecological aspects of sustainability. These

are serious views that have received serious attention from industry leaders and policymakers (Geissdoerfer et al., 2017). However, some business practitioners view environmental protection as a form of regulation rather than business interest (Wilkinson et al., 2001), which was directly associated with internal employees' perceptions of environmental performance. Second, quantitative research respondents basically represent the lower-level of employees in the garment management cycle, who really have any influence on the legal aspects of SSCM practices (Nath et al., 2020). Therefore, the findings of this thesis may not align with the views of previous studies.

6.6.2.4 H1d: EE mediates the relationship between SD and DisP

Previous literature indicates that management does not rely on employee engagement to minimise SC disruptions (Huq et al., 2014). The idea is somewhat similar to the empirical findings of this study, which found that employee engagement partially mediates the relationship between stakeholder decisions and SC disruptions (see Table 5.28, Chapter 5). Employees may not have direct influence over SC disruptions, but have indirect influence through stakeholder decisions. As previously discussed, the result could indicate the features of mock compliance and non-compliance, while considering the influence of employees on SC disruptions. Other than that, employees rarely have any influence on other SC disruptions. Moreover, Locke et al. (2013) indicated that management is more likely to develop a close relationship with SC partners when they face legal obligations for operations. Although Soundarajan & Brammer (2018) acknowledged this dispute for social sustainability, not exactly for SC disruptions. In return, this situation also creates a hindrance towards successful SSCM performance.

6.6.3 Moderated mediation relationships

Moving to the moderated mediated relationship, this study proposed that SSCM practices positively moderated the mediation effect of employee engagement on the

relationship between stakeholder decisions and firm performances (i.e., social performances, economic performances, environmental performances, and SC disruptions).

6.6.3.1 H2a: SscmP moderated the mediation effect of EE, on SD and SocP

The quantitative findings on the moderated mediation effect indicate that SSCM practices to strengthening the indirect effect of employee participation on social performance through stakeholder decisions. In particular, in the case of social performance, SSCM practices positively moderated both direct and indirect influence employee engagement, through stakeholder decisions. Existing research suggests careful consideration when manufacturers reach the expectation of the buyers, specifically for social practices (Nair, Jayaram & Das 2015). Based on an institutional mechanism and stakeholder participation, the integration of social sustainability will empower both confinement and ardent practices of employee engagement. However, this will also create scope for both contrivance and encumbrance practices, where disruption could happen further.

These findings resonate with the research stream by validating the critical role of employee engagement in SSCM practices. Additionally, this is consistent with the institutional theory which argues that the influence of social sustainability is higher than any other available sustainable practices, particularly for manufacturer-based businesses (Huq, Stevenson, and Zorzini, 2014).

6.6.3.2 H2b: SscmP moderated the mediation effect of EE on, SD and EcoP

In terms of economic performance, the findings on the moderated mediation effect indicate that SSCM practices somewhat strengthen the indirect effect of employee

engagement on economic performance through stakeholder decisions. In particular, the conferment and contrivance practices are positively influenced by the SSCM practices. This is quite contradictory, as conferment practices related to the positive aspects of employee engagement, whereas contrivance practices related to the negative perspectives, such as peer pressure. A possible reason is that strong 'peer pressure' links between productive performance and sustainable practices. This result indicates that the often-negative aspect of stakeholder engagement limits the implementation of successful practices. A previous study (Sodhi & Tang, 2018; Wilhelm et al., 2016) demonstrated that high levels of employee engagement could bring the best institutional practices and can create synergies between SSCM practices.

This result is important, as it described the importance of cultural pressure, which Scott (2001) described as the normative force for sustainable performance. As Hofstede (2001) described, normative aspects play an important role in the determination of the working norms, beliefs, values, and assumptions that are shared within the environment (Wennekers 2006). In particular, in a manufacturing-based garment industry, employees needed a supportive culture where they could achieve clear goals with the help of a superior individual and could perceive opportunity (Wennekers 2006).

6.6.3.3 H2c: SscmP moderated the mediation effect of EE on, SD and EnvP.

In terms of environmental performance, the findings on the moderated mediation effect also indicate that SSCM practices somewhat strengthen the indirect effect of employee engagement on environmental performance through stakeholder decisions. Exceptionally, both conferment and contrivance practices are positively influenced by the SSCM practices. Likewise, the previous discussion, this finding is also contradictory, as conferment practices related to the growth, empowerment, and positive behaviour norms of employee engagement where stakeholder decisions play

an integral part as management positive feedback. On the other hand, contrivance practices are mostly related to the congested workstations, lack of support, and lower institutional mechanisms.

This outcome is important because it evaluated the opportunity to advance the SSCM practices, specifically highlighting exactly where the improvement is needed. In Bangladesh, the government mechanisms have high legislation costs associated with legal issues from other SC stakeholders, which prior study identified as a legislative mandate (Dimaggio and Powell, 1983) and institutional links (Oliver, 1991). Furthermore, manufacturing-based business, like-garment factory often struggles with execution of sound environmental practices, as they typically received increasing attention for social performance (Porter & Kramer, 2011). Therefore, in accordance with the positive institutional mechanism, the garment business can focus on a more central point, such as exactly which point the company can implement better practices, in an attempt to achieve higher environmental performance.

6.6.3.4 H2d: SscmP moderated the mediation effect of EE on, SD and DisP

The quantitative findings on the moderated mediation effect indicate that SSCM practices support for the indirect effect of employee engagement on SC disruptions through stakeholder decisions. Compared with economic and environmental performances, only contrivance practices of employee engagement have no influence over SC disruptions.

This finding is crucial, as SC disruptions come mainly from institutional networking, where employees have limited involvement. As Yang and Wang (2011) described, institution networks generate social capital where stakeholder relationships mechanism facilitate better communication and understanding (Cai and Yang, 2014). For the garment industry, SSCM practices are mostly related to the encouragement of stakeholders toward positive attitudes, where employees can present deeper

performance, and SC disruption comes primarily from SC activities, which are typically carried out outside of the factory premises (Wiegel and Bamford, 2014).

6.7 A Holistic Framework

According to Kovács and Spens (2006), research adopting the mixed method approach starts with basic theoretical knowledge, collects and analyses data, continues with theory matching, and concludes with suggesting propositions and expanding the existing theoretical framework with new knowledge. By following this pattern, this study is guided by the theoretical framework (see Figure 2.1, Chapter 2) for identifying SSCM forces, practices, and performances. While the integration of employee engagement viewpoints comes from the analytical framework (see Figures 2.2a and 2.3a, Chapter 2). Depending on the specific contextual basis, this study empirically identified and measured several aspects of employee engagement as well as SSCM forces. In particular, there is a lack of understanding regarding employee engagement in SSCM implementation from the empirical perspectives, specifically manufacturing perspectives (Nath et al., 2019, Chowdhary et al., 2020). This study, based on empirical findings, addressed the empirical gap in SSCM and manufacturing-based stakeholders' perspectives by confirming and extending the analytical framework for SSCM practices.

The proposed holistic framework for SSCM performance is shown in Figure 6.5 and draws on the theoretical knowledge of stakeholder theory and institutional theory. Particularly, the findings show four interrelated parts- stakeholder groups, institutional pressures and mechanisms, SSCM practices (i.e., supporting, hindering, and conflicting), and SSCM performances. Moreover, the fifth contribution is stakeholder knowledge, particularly highlighting the participation of employee engagement in SSCM practices, through the analytical framework. In addition, a simplified version of the holistic framework is also shown in Figure 6.6.

Figure 6.5: A holistic framework for embedding employee engagement in SSCM practices and performances.

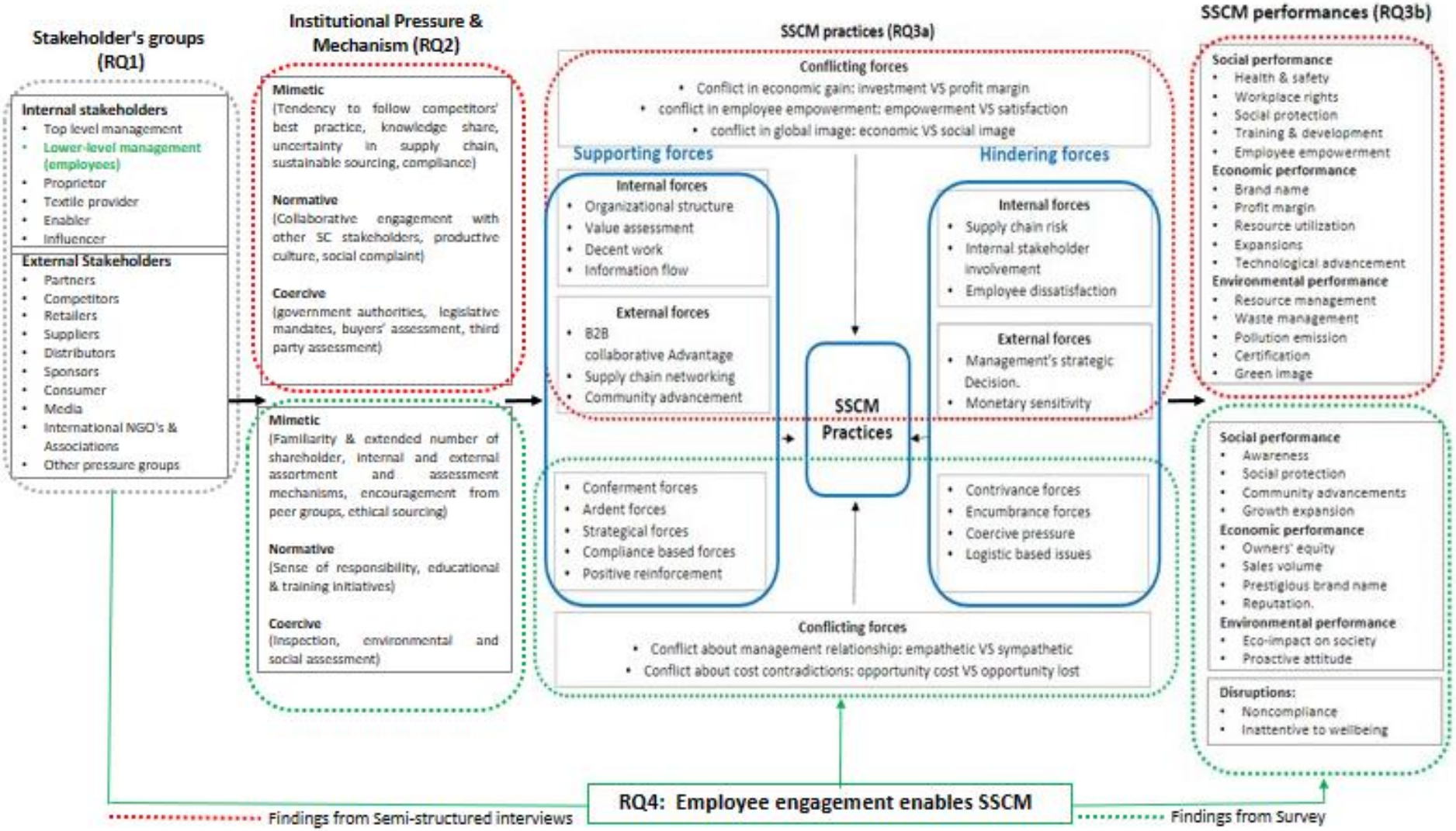
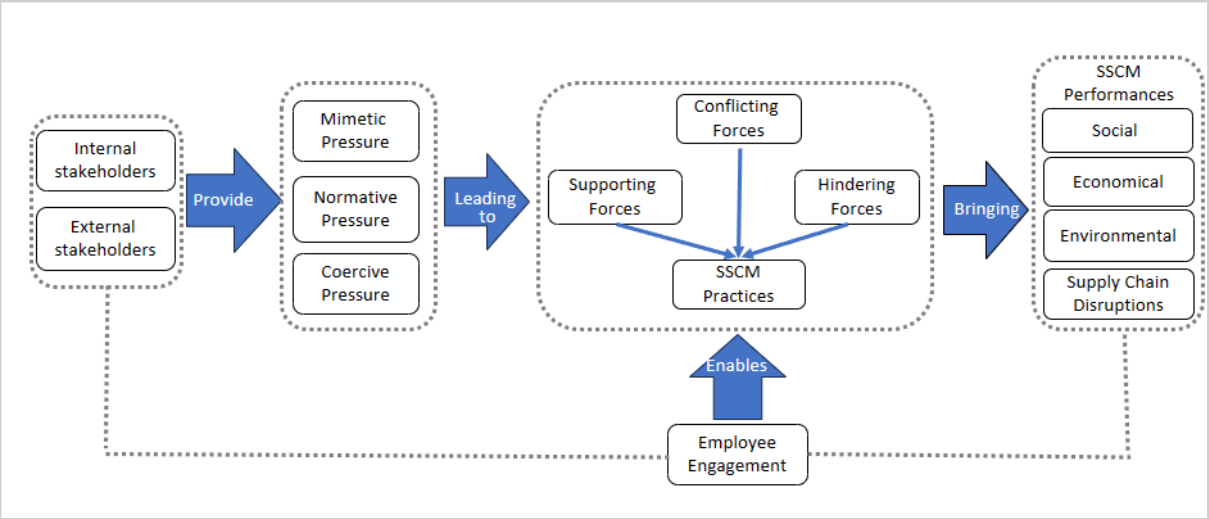


Figure 6.6: Simplified version of holistic framework



First, drawing on stakeholder theory, the framework starts with the available stakeholder groups of the Bangladeshi garment industry. To provide a deeper understanding of the sustainability practices of inbound stakeholders, as well as exceptions towards SSCM performance, this thesis started with a categorisation of the SC partner. The motive was to identify the relationship between them, and the combination of SSCM practices between partners was considered further. However, the findings of this study also support the descriptive aspects of the stakeholder groups. According to Hörisch et al. (2014), "Business and ethics are not perceived as conflicting, but as fundamentally interlinked" in managing stakeholder relationships and their sustainability interests. Depending on that, this study focuses on the institutional mechanism as the next cycle of enquiry.

Second, by focusing on institutional theory (DiMaggio & Powell, 1983), the framework in which different institutional pressures and mechanisms - coercive, mimetic, and normative- vary across stakeholder categories and therefore have different implications for SSCM practices. As shown in the framework, both empirical chapters (Chapters 4 and 5) shed light on some forces that could exert institutional pressure from both internal and external stakeholders. Most importantly, Chapter 5 (i.e., quantitative findings of this thesis) identified some forces from survey respondents that are directly linked with institutional pressures and mechanisms.

The third part of the proposed framework focuses on SSCM practices. In particular, the findings demonstrate two kinds of thematic responses towards SSCM- supporting (good-side) forces and hindering (bad-side) forces, currently used in the factory premises. The study also identified multiple conflicting (self-contradictory) points of view from both empirical chapters. The qualitative findings highlighted the forces- such as economic gain logic, employee empowerment logic, and global image logic, whereas quantitative findings highlighted the forces- such as managing relationships and cost contractions that are perhaps trade-offs toward SSCM implementation.

The fourth part of the framework highlighted the SSCM performance, subject to Elkington's triple bottom line dimension of sustainability. As shown in the framework, the qualitative findings (Chapter 4), top-level management of the garment factory considers the highest on health and safety, social protection, and employee empowerment, while the quantitative finding (Chapter 5) suggested that the lower-level employee valued awareness, growth, and community advancement most as social performances. Similarly, brand name, profit margin, and resource utilisation are valued more for the top-level of employees whereas, owners' equity, sales volume, and reputation work for lower-level employees as economic performances.

Overall, the framework highlighted how employee engagement enables the SSCM practices and performances in garment shop floor operational activities. By observing the importance of employee engagement in garment factory's shop floor operations as well as stakeholders' decisions over SSCM practices, this study examines the influence of employee engagement as a driving force due to the fact that it has the power to encourage the willingness to adopt SSCM practices more on shop floor's operational activities. Table 6.2 illustrated of all the themes and subthemes illustrated from literature as well as from the empirical data.

Section	2nd order sub-section	3rd order sub-section	Emerging from literature?	Example key authors	Example contextual authors	Emerging from empirical data?	Example findings Interview/qualitative	Example findings Survey/quantitative	Confirm (+) / disconfirm (-) / novel (new)
Stakeholder Theory									
Stakeholder types	Internal External		✓ ✓	Freeman (1984) Clarkson (1995)	Mausumi and Rahman, (2018)	X	The categorisation of inbound stakeholders is confirmed by the qualitative findings of this study.	The findings extend Mausumi and Rahman, (2018) to include several dimensions of lower-level employees such as line managers, quality controllers, inspectors, subordinates of supervisors, technicians, compliance subordinates and store managers.	Confirm (+) Novel (new)
Organisation's management process	Descriptive	Assessment Technological advancement Familiarity	✓	Donaldson and Preston (1995)	Huq et al., (2016) Silvestre et al., (2015)	X	The descriptive aspects of the organisation's management process are confirmed by the interview results.	This part of the research did not find these	Confirm (+)
	Instrumental	Compliance Operational activities Competitive advantages	✓			✓	The empirical findings support the instrumental argument of stakeholder theory and argue for the improvement of sustainable practices in garment factories, particularly for operational activities on the shopfloor. The qualitative findings broaden both Huq et al. (2016) and Silvestre et al (2015) that SC stakeholders should focus more on the lower level of management engagement. For example, employee engagement through motivation, training & development, and workshops will not only empower employees for their personal gains but also turn them into an unparalleled resource to gain competitive advantage.	This part of the research did not find these	Confirm (+) Novel (new)
	Normative	Ethical reasoning Awareness	✓			X	From a stakeholder perspective, the empirical findings of this study did not find this to be the case.	This part of the research did not find these	Dis confirm (-)

		Legitimacy						
Power Dependency		Competition Strategic decisions Discernment	✓	Mitchell et al (1997)	Ali and Rizwan, (2013)	✓	Indeed, these aspects were mentioned more by the institutional side of the garment business. The qualitative findings support the power dependency aspect of the manufacturing-based garment business. One of the key contributions was an extension of the previous work by Ali and Rezwan (2013) that the top level of inbound management, i.e. the section manager or owner, was involved in the day-to-day management activities where it was necessary to oversee the activities of the lower-level management through monitoring and decision making. However, the lower level of inbound management, i.e., the line manager or compliance manager, who was directly involved in the operational execution procedures of the factory shop floor, gave them more power over compliance initiatives.	This part of the research did not find these	Confirm (+) Novel (new)
Mutual interest		Trust Quality/ clarity Knowledge sharing Collaboration Communication	✓	Hörisch et al. (2014)	Huq et al., (2016)	X	The empirical findings of this study did not support these issues from a stakeholder perspective. However, they were more likely to be mentioned as institutional aspects of the garment industry.	This part of the research did not find these	Dis confirm (-)
Institutional Theory									
Institutional isomorphism	Mimetic	Assessment Tech-advancement Knowledge share	✓	DiMaggio and Powell (1983)	Wilhelm et al., (2016) Nat et al., (2020) Salveti et al., (2022)	✓	The empirical findings of this study recognise 'peer pressure' as an influential aspect of SSCM implementation. In particular, the findings extend those of Nath et al. (2021; 2023) by highlighting the fact that although some suppliers	The quantitative findings confirm the mimetic aspects of the manufacturing-based garment business and also recognise the importance of 'encouragement from peer groups'	Confirm (+)

		Ethical/sustainable/eco-sourcing			Nath et al., (2021; 2023)		recognise sustainability and/or the benefits of adopting sustainability practices, they often fail to do so due to the rigidity of 'financial obligations'.		Novel (new)
	Coercive	Compliance standards Stakeholder authorities Operational policies Infrastructural legislation Rules & regulations Collaboration	✓	DiMaggio and Powell (1983)	Nath et al., (2020) Salveti et al., (2022) Wilhelm et al. (2016) Huq and Stevenson (2020)	X	The empirical findings of this study focus only on the perceived institutional pressures and mechanisms of the inbound/internal stakeholders. Therefore, the coercive practices of external stakeholders are not prominent here. However, the empirical findings revealed similar phenomena to the inbound stakeholder's practices, which tended to take place within the garment factory premises.	This part of the research did not find these	Dis confirm (-)
	Normative	Networking Professional expertise	✓	DiMaggio and Powell (1983)	Ali and Rizwan, (2013) Nath et al., (2021)	✓	The empirical evidence showed that stakeholders sometimes influence factory practices through networking. However, the findings also highlighted that a culture of being productive in all seasons can place unsustainable and sometimes unrealistic and impractical pressures on lower-level garment employees, which contradicts Nath et al. (2021) and provides evidence that it can hinder motivation for effective sustainable practices in the supervision of garment workers.	The quantitative findings also emphasise 'networking' and extend the previous research by Nath et al. (2021) - how networking between inbound stakeholders on the shop floor can be a motivational factor for lower-level garment employees and can create a 'sense of responsibility'.	Confirm (+) Novel (new)
Others	Social Sustainability requirement	Decent work Governance mechanism Image	✓	Soundarajan & Bramme r, (2018); Gereffi et al., (2016)	Yadlapalli et al., (2018)	✓	The empirical findings support the previous work of Soundarajan & Brammer, (2018) and highlight the support of internal management as an internal aspect, while SC networking and B2B collaboration work better as an external factor. This may be due to the classic views of stakeholder theory, which lead manufacturing SC partners to adopt SSCM practices to optimise business profits and benefits.	This part of the research did not find these	Confirm (+)

	SSCM/ GSCM/ Sustainability	Growth Management support Operational policies Health & Safety Compliance Energy consumption	✓	Carter and Rogers, (2008)	Chowdhary et al., (2013); Baskaran, Nachiappan and Rahman (2011)	✓	The qualitative findings support previous research by Chowdhary et al. (2013) and Baskaran et al. (2011), which found that top management often placed greater emphasis on health and safety standards, workplace rights, social protection, and training and development while considering sustainability perspectives.	The quantitative findings were slightly opposite to the qualitative findings, highlighting that in terms of sustainability attributes, lower-level management is more concerned with awareness, social protection, growth and expansion of the garment infrastructure than anything else.	Confirm (+)
	Job satisfaction	Empowerment Sense of accomplishment	✓		Akhter et al., (2017)	✓	This part of the research did not find these	The quantitative findings highlight the contextual gap and discover growth, empowerment, appreciation, motivation, encouragement, an appropriate living wage, and a sense of pride worked as supporting aspects for employee engagement in factory premises. Whereas forces like congested workstations, lack of support, lower mechanisms, peer pressure and stress acted as institutional pressure in SSCM practices. This identification is viable, as previous SSCM scholars (Ashby et al., 2012; Carter and Easton, 2011; Carter and Rogers, 2008), considered employee participation as a significant aspect of sustainable practices of organisations.	Confirm (+)
Newly found theme/s									
Institutional Pressure & Mechanism	Mimetic		X	X	X	✓	Encouragement of peer groups	This part of the research did not find this	Novel (new)
	Coercive		X	X	X	✓	Did not find any	Did not find any	Novel (new)
	Normative		X	X	X	✓	Social complain	Sense of responsibility	Novel (new)
	Other		X	X	X	✓	This part of the research did not find these	Noncompliance, inattentive to well-being	Novel (new)
	Economic gain		X	X	X	✓		This part of the research	

Conflicting aspects	Employee empowerment Global image					This research study put forward several evidence-based observations as conflicting forces, which could create confusion in sustainability practice. For instance, top management identified three areas i.e., economic gain, global image, and employee empowerment, that could conflict with sustainability practices. Although Nath et al. (2021) identified that employee empowerment might often be symbolic, the qualitative findings underline that active engagement can ensure sustainability practices on the factory shop floor.	did not find these	Novel (new)
	Relationship with management Cost considerations	X	X	X	✓	This part of the research did not find these	Survey findings identified two areas i.e., management relationships with lower levels of employee and cost contractions where impedition could happen. A possible explanation for this might be that lower levels of employees perceive that top management can manage internal practices for superior performance, but that might not be the case.	Novel (new)

How does employee engagement enable SSCM practices? (based solely on quantitative/survey analysis)

Hypothesized relationships			Contributions
Mediated relationships	Economic practices	The results showed that employee engagement had a complementary impact on the economic performance of the factory. The finding supports the previous research by Rahman et al. (2016) and highlights how employees act as a driving force for sustainability practices in the factory. From an institutional perspective, this result is also significant as enthusiastic and committed employees are sometimes more important than anything else in the factory, perhaps in exchange for monetary benefits or recognition. Furthermore, this finding also supports the contextual research of Azim et al. (2021), where employee engagement replicates the 'sustainable mindset' of sustainable practices.	Confirm (+)
	Social practices	The empirical results showed that employee engagement partially mediates the relationship between stakeholder decisions and organisational social performance. However, Bangladeshi garment firms rarely value lower-level employee engagement in sustainable practices and often adopt similar regulations for both employees and garment workers (Miles 2017, Huq et al., 2014). For example, the qualitative findings revealed that this is a contentious issue. Evidence showed that recognising the value of employee engagement from a strong position of performance evaluation may give the garment factory confidence to adopt SSCM practices in operational activities on the shop floor.	Confirm (+)
	Environmental practices	The results showed that employee engagement did not have a significant impact on the firm's environmental performance. Interestingly, employee engagement has a partial influence on the relationship between a stakeholder decision and an organisation's environmental performance. This is significant as previous researchers Steurer et al. (2005) and Geissdoerfer et al. (2017) highlighted how the garment industry is directly linked to carbon emissions and how some firms portray environmental protection as a form of regulation rather than business interest (Wilkinson et al., 2001).	Dis confirm (+)

		Specifically for contextual research, there is no evidence to date to report this influence. Therefore, the findings of this thesis may not agree with the views of previous studies but highlight the contributions.	Novel (new)
	SC disruptions	The result showed that employee engagement has a limited impact on stakeholder decisions and SC disruptions. This is important because the previous researcher found that management does not rely on employee engagement to minimize SC disruptions (Huq et al., 2014), while the empirical findings provide that employees may not have a direct influence on SC disruptions but an indirect influence through stakeholder decisions. This may be due to the characteristics of mock compliance and non-compliance in the contextual garment business (Nath et al., 2021), which may create conflict for social sustainability (Soundarajan & Brammer, 2018). In turn, this situation also creates a barrier to successful SSCM performance.	Confirm (+) Novel (new)
Moderated mediated relationships	Economic practices	The result showed that employee engagement has a complementary influence on factory economic performance. This is significant, as it highlights cultural pressure, which Scott (2001) described as the normative force for sustainable performance. The empirical findings extend the previous research of Wennekers (2006) in the contextual sector and emphasize that lower-level garment employees needed a supportive culture where they could achieve clear goals with the help of a superior individual and could perceive opportunity.	Confirm (+) Novel (new)
	Social practices	The results showed that employee engagement did not have a significant impact on the social performance of firms. Based on the institutional mechanisms identified by Huq et al. (2014) and stakeholder participation by Nair et al. (2015), the empirical findings extend the idea of integrating social sustainability between lower-level and top-level management, which could strengthen both contrivance (i.e., congested workstation, lack of support, lower mechanism) and encumbrance practices (i.e., peer pressure) of employee engagement. However, this will also create space for both conferment (i.e., growth, empowerment, positive behavioral feedback) and ardent (i.e., appreciation, proactive attitude, sense of pride) practices where further improvements can be made.	Confirm (+) Novel (new)
	Environmental practices	The results provide contradictory results for environmental performances. This outcome is important because it evaluated the opportunity to advance the SSCM practices, specifically highlighting exactly where the improvement is needed. In Bangladesh, the government mechanisms have high legislation costs associated with legal issues from other SC stakeholders, which prior studies identified as a legislative mandate (Dimaggio and Powell, 1983) and institutional links (Oliver, 1991). Furthermore, manufacturing-based businesses, like garment factories often struggle with the execution of sound environmental practices, as they typically receive increasing attention for social performance (Porter & Kramer, 2011). Therefore, in accordance with the positive institutional mechanism, the garment business can focus on a more central point, such as exactly which point the company can implement better practices, in an attempt to achieve higher environmental performance.	Confirm (+) Novel (new)
	SC disruptions	The quantitative results showed that contrivance practices (i.e., lack of support and lower mechanism) of employee engagement do not influence SC disruptions. This finding is crucial, as SC disruptions come mainly from institutional networking, where employees have limited involvement. As Yang and Wang (2011) described, institution networks generate social capital where stakeholder relationships mechanism facilitate better communication and understanding (Cai and Yang, 2014). For the garment industry, SSCM practices are mostly related to the encouragement of stakeholders toward positive attitudes, where employees can present deeper performance, and SC disruption comes primarily from SC activities, which are typically carried out outside of the factory premises (Wiegel and Bamford, 2014).	Confirm (+) Novel (new)

Table 6.2: Overview of themes and subthemes presented in this thesis.

6.8 Summary of the Chapter

To answer the research questions, the study adopted a convergent mixed-method approach. Both qualitative and quantitative findings address the questions like the category of stakeholder groups, institutional pressures, and mechanism for implementing sustainable practices, and SSCM forces by highlighting- supporting (i.e., internal, and external), hindering (i.e., internal, and external) and conflicting forces. Therefore, the SSCM performances are also identified from the perspectives of garment employees. Finally, a critical discussion about employee's engagement, and how garment employees enable the SSCM practices and performances in garment shop floor operational activities discussed. Several recommendations were signposted throughout the discussion.

Furthermore, since the research results are mainly derived from the Bangladeshi manufacturing- based garment industry, potential biases arising from this context are noted and will be discussed in the next chapter under the conclusion heading, which will also focus more on the limitations of the study.

CHAPTER 7

Conclusions

7.1 Overview

This chapter summarises the entire thesis content and answers associated questions about the research purpose. Briefly, this thesis aims to identify the contribution stakeholder forces make in implementing SSCM within the Bangladeshi garment industry, with a particular focus on employee engagement in shopfloor SSCM practices. To meet this aim, the thesis has reviewed associated literature, related to contextual stakeholders and SSCM, and then reviewed institutional aspects of the manufacturing-based garment industries stakeholder's SSCM forces. Henceforward, a parallel convergent mixed method approach was applied to collect empirical data (i.e., semi-structured interviews and surveys). Gradually, thematic analysis and moderated mediation analysis techniques have been used to evaluate the research findings. Last, a cross-matching between qualitative and quantitative results was undertaken while answering research questions. The subsequent overreaching sections in this chapter are:

- Answer to research questions: How are the research questions answered?
- Thesis contribution: What are this study's theoretical and empirical contributions?
- Research limitations: Are there any limitations while conducting research? If so, what are they?
- Future research opportunities: What could be done to extend the research results?

Table 7.1: Subsequent objectives of Chapter 7.

7.2 Answer to the research questions.

To fulfil the research aim, this thesis studied the following four research questions:

(1) Who are the inbound stakeholders in the Bangladeshi garment industry?

(2) How do these stakeholders' exact institutional pressures to implement SSCM performance?

(3a) What are the available stakeholder forces related to SSCM practices in the Bangladeshi garment industry?

(3b) What are the stakeholder forces available related to SSCM performances in the Bangladeshi garment industry?

(4) How Employee Engagement enables SSCM practices?

Several activities have been undertaken in each chapter to answer the research questions. Particularly, with the help of the literature review of Chapter 2, and empirical findings from Chapters 4 and 5, **RQ1** answered. Similarly, Chapters 4 and 5 addressed **RQ2**, where the main focus was on the identification of institutional pressures and mechanisms of stakeholders. Although the theoretical framework of Chapter 2 set the stage for **RQ3a and RQ3b**, where the objective was to identify the sustainable forces of the contextual stakeholder forces related to the practices and performances of

SSCM, the answers to all RQs are revealed from a cross-match interpretation of the qualitative findings (that is, Chapter 4) and quantitative findings (that is, Chapter 5). Regarding **RQ4**, an analytical approach was proposed in Chapter 2 (with the help of several hypotheses) and a rigorous statistical investigation has been conducted to identify the mediation and moderated mediation effect among the identified constructs in Chapter 5, which also underlie the characteristics of **RQ4.**

To guide the research questions, it is worth noting how these questions satisfied the research aim. The overall research engagement undertaken in each chapter and their connections with different RQs are summarised in Table 7.2. However, in the following sections, a brief of how the research questions are answered in line to the research aim is also presented henceforward.

Chronology	**Observed Activities**	**Achievements & links to RQ**
Chapter 2	1. A brief of sustainability, SSCM practices, and performances are outlined. 2. Summarised literature regarding manufacturing-based stakeholders' groups, in conjunction with stakeholder theory. 3. Summarised institutional mechanisms with respect to institutional theory.	Answered partial of **RQ1**
Chapter 3	**1.** Discussed why convergent mixed method design (i.e., semi-structured interview and survey) was best for empirical data collection. **2.** Thematic analysis is proposed for qualitative, and moderated mediation analysis is proposed for quantitative data analysis techniques. **3.** Discuss how cross-matching and interpretation will answer the cycles of enquiries.	Justification of the methodological choice provided.

	4. Discuss the nature of the identified inbound stakeholders.	
Chapter 4	**1.** Explained how the research rigour has been achieved for qualitative analysis. **2.** Explored existing sustainable forces (i.e., supporting, hindering, and conflicting) for SSCM practices and performances through thematic analysis. **3.** Highlighted institutional mechanisms and pressures from top-level garment management perspectives.	Answered Partial **RQ2, RQ3a & RQ3b**
Chapter 5	**1.** Explained how the research rigour has been achieved for qualitative analysis. **2.** Explored relevant constructs for statistical analysis and highlighted sustainable forces (i.e., supporting, hindering, and conflicting) for SSCM practices and performances.	Answered Partial **RQ2, RQ3a & RQ3b**
	3. Explored employee engagements mediate the relationships between stakeholders' decisions and firm performances. **4.** Explored how SSCM practices moderate the mediation effect of employee engagement on stakeholder decisions and firm performances.	Answered **RQ4**
Chapter 6	1. Presented crossmatching interpretation between qualitative and quantitative findings. 2. Signposted future research and limitations of this study.	Crossmatching between **RQs**

Table 7.2: Summary of individual chapters' achievements and connections to the research questions.

7.2.1 RQ1: Who are the inbound stakeholders in the Bangladeshi garment industry?

To begin with, the initial phase of the research aim is to identify sustainable forces from manufacturing-based stakeholders' perspectives. Consequently, the cycle of inquiry is started with the identification of inbound stakeholders, specifically those who are involved with the garment shop floors' sustainable practices. To address this research question, the literature around stakeholder theory, as well as the findings of qualitative and quantitative results, highlighted several categories of inbound stakeholders, which aligned with previous contextual research (Hoque et al., 2020; Nath et al., 2020, 2019; Huq et al., 2020).

Overall, the research has contributed to developing a deeper understanding of the relationship between the job responsibilities of stakeholders and the associated sustainable practices, which bind inbound stakeholders, such as lower-level employees, to focus more on sustainable practices within the operational activities of the shop floor, where they have a direct influence on garment workers through supervision. Another important insight is that classification is also involved under the term 'management control', while previous researchers found evidence between internal and external forces across garment SC (Mitchell et al. 1997). The findings of this study highlighted that management of inbound stakeholders is basically two types while involving the factory's operational performance (i.e., social, economical, environmental and SC disruptions) came across. Top-level of inbound management, such as section head or owner, who engaged with daily managerial activities where supervision of the activities of the lower-level stakeholders through monitoring and decision making needed. However, the lower level of inbound management, such as the line manager or compliance manager, directly related to the operational execution procedures of the factory shop floors, gave them more power over compliance initiatives.

The initial take on this argument is that to improve sustainable practices in the garment factory premises and the operational activities, SC stakeholders should focus more on the lower level of management engagements. For instance, employee engagement through motivation, training & development, workshops, or other compliance initiatives, will not only empower employees for their personal gain but also turn them into inimitable resources to gain collective sustainability goals (Hörisch et al., 2014).

7.2.2 RQ2: How do these stakeholders exert institutional pressures to implement SSCM performances?

From reviewing the current literature and the nature of the sustainable forces of the garment stakeholders explored in manufacturing, as well as their practiced sustainable forces, the findings of this study highlighted several qualitative themes and quantitative constructs as institutional mechanisms which could foster the sustainable practices of the factory and the implementation of the performance of SSCM. More specifically, the qualitative findings (Chapter 5) have confirmed the findings from the literature and the theoretical framework, whereas quantitative analysis (Chapter 6) tested the constructs of stakeholder decision (i.e., positive reinforcement and coercive pressure) and SSCM practices (i.e., strategical practices and compliance-based practices) to identify the possible institutional pressures and mechanisms from manufacturing-based stakeholder's viewpoint.

These findings suggest that institutional pressures and mechanisms- memetic, normative, and coercive -vary across top-level employees' and lower-level of employees' perceptions of sustainability. In response to memetic pressures and mechanisms, empirical findings of this study recognised 'peer pressure' as an influential aspect of SSCM implementation. Especially, qualitative findings highlighted the fact that, although some suppliers realise sustainability and/or the benefit of adopting sustainability practices, they often did not do so due to rigidity in 'financial

obligations'. In response to normative pressures and mechanisms, the finding of this research highlighted that a culture of being productive in all seasons could create pressures on the garment's lower-level of employees, which is not sustainable in nature and also occasionally unrealistic and impractical, which might hinder the motivation for effective sustainable practices while supervising the garment workers. Although many researchers highlighted the importance of sub-supplier selection while discussing the coercive pressures and mechanisms, the empirical findings proved that this is hardly the case. Hence, both empirical findings highlighted the importance of other SC stakeholders while discussing the role of collective coercive mechanisms.

It should be noted that the empirical findings of this study only focus on perceived institutional pressures and mechanisms of the inbound stakeholder, which other stakeholders of SC could not replicate. However, it is also very promising to study inbound stakeholders' mechanisms through an in-depth quantitative lens in the future, such as examining the role and capabilities of influencing institutional mechanisms.

7.2.3 RQ3a: What are the available stakeholder forces related to SSCM practices in the Bangladeshi garment industry?

Specifically, this study put forward several forces like, organisational structures, value assessment, and decent-work worked better to support the factory's internal sustainability practices, whereas SC networking and B2B collaborative engagement works better as external forces. This may be due to the classical viewpoints of stakeholder theory, which drive SC partners from manufacturing-based industries to embrace SSCM practices as a way of maximising business profits and benefits. However, for hindering forces evidence suggested that SC risk and employee dissatisfaction are decisive for the internal shopfloor's sustainable practices, whereas monetary sensitivity is the prime force from external. This may be because most garment owners and managers perceive sustainability expenses to improve health and safety in factory premises as cost (Nath et al., 2019).

This research study also put forward several evidence-based observations as conflicting forces, which could create confusion in sustainability practice. From qualitative findings, top management identified three areas i.e., economic gain, global image, and employee empowerment, that could conflict with sustainability practices. Although Nath et al. (2021) identified that employee empowerment might often be symbolic, whereas the qualitative findings underline that active engagement can ensure sustainability practices on the factory shop floor. On the other hand, quantitative findings identified two areas, management relationships with lower levels of employee and cost contractions could impede sustainable practices. A possible explanation for this might be that lower levels of employees perceive that top management can manage internal practices for superior performance, but that might not be the case (Chowdhary et al., 2018).

7.2.4 RQ3b: What are the available stakeholder forces related to SSCM performances in the Bangladeshi garment industry?

Both research findings highlighted several SSCM performances, as a result of SSCM practices on the garment shop floor. For social performances, top-level management emphasized health and safety standards, workplace rights, social protection, training, and development more, whereas lower-level management signifies the importance of awareness, social protection, growth, and expansion of garment infrastructures. This may be due to the nature of the stakeholders and their working engagement. The top level of management is basically involved with the administration of lower-level employees' work and decision-making phases, while the lower-level of management is basically involved with the supervision of garment workers' operational activities. Similarly, for economic performance, the most substantial issue is the utilization of resources for top-level management, whereas lower-level of management identified technological advancement as pivotal. Interestingly, the quantitative findings highlighted a proactive attitude as a focal mechanism for environmental performance. For instance, through an exploratory case study, Reinecke & Donaghey (2015) explored the interface between production and consumption actors of the garment supply chain may provide leverage to improve the eco-impact of the factory.

7.2.5 RQ4: How does employee engagement enable SSCM practices?

This thesis's quantitative findings highlighted this research study's key theme, employee engagement over SSCM practices, focusing on the relationship between employee engagement with stakeholder decisions and firm performances. More specifically, the results of Chapter 5 shed light on a new branch of empirical research on the SSCM of Bangladesh's garment industry by analysing the effect of SSCM practices on employee engagement, stakeholder decisions and firm performances.
To answer the mediated relationships, PROCESS Macro-model 6 was used to test the hypotheses pertaining to employee participation mediates the relationship between stakeholder decisions and firm performances. The results indicated that employee engagement has a complementary influence on factory economic performance, whereas it has a partial influence on social, environmental, and SC disruptions. Specifically, lower-level management perceived employee engagement plays a significant role in the institutional mechanism for sustainable practices, more specifically in the economic performance of the factory. This is because the top level of management mostly depends on the performance of employees to ensure sustainable performance on garment shop floors.

Surprisingly, the results also showed that employee engagement did not have a significant impact on firm social and environmental performance. Prior researchers showed that employee engagement is important as it improves workers' performance and stakeholder decisions for compliance initiatives (Miles 2017, Huq et al., 2014). Conversely, the result showed that employee engagement barely influenced the garment's social and environmental practices. This assumption is significant, as the lower level of management perceived garment owners rarely value employee engagement in social performance and second: employees do not directly involve in the legal aspects of SSCM practices, specifically in environmental practices. In this

regard, the social and environmental practices of garment factory floors are ignored by employees.

Regarding SC disruptions, the quantitative findings proved that employee engagement has limited influence on stakeholders' decisions and SC disruptions. Although qualitative findings highlighted the importance of mock compliance and non-compliance forces that might cause SC disruptions, there is no evidence from the lower level of management. One possible reason is the nature of the lower level of survey research participants, who perceived they (i.e., lower level of employee) have nothing to do with the external SC. This observation is important, as employee engagement involves stakeholders' sustainable mindset and could significantly develop shop floor SSCM performances.

To answer the moderated mediation relationships, PROCESS Macro model 8 was used to test the hypotheses, addressed how SSCM practices could positively moderate the mediation effect of employee engagement on the relationship between stakeholder decisions and organisations' firm performances (i.e., social, economical, environmental and SC disruptions). The findings suggested that the SSCM practices strengthened the indirect effect of employee engagement on social performance through stakeholder decisions. However, in case of economic, environmental and SC disruptions, SSCM practices somewhat strengthening the indirect effect of employee engagement on firm performance through stakeholder decisions. In other words, evidence showed that SSCM practices positively moderate the mediation effect of employee engagement on the relationship between stakeholder decisions and firm performance of organisations in several ways.

First, through conferment and contrivance practices, lower-level of employees positively influenced towards stainable performance, but at the same time, possess some negative perceptions due to contrivance practices, such as peer pressure. This identification is important as it highlights the cultural aspect of the normative force of institutional theory. The evidence showed that in a manufacturing-based garment

industry, employees needed a supportive culture where they could achieve clear goals with the help of the top level of management.

Second, in regard to environmental performances and SC disruptions, the quantitative results are quite contradictory. On the one hand, environmental performance is the result of positive reinforcement by employees, where the development activities of the culture and factories play an integral role. On the other hand, SC disruptions come mainly from institutional networking, where employees have limited involvement. Surprisingly, the empirical finding provides limited engagement in both aspects. This is important as it highlighted the low level of management perceptions towards environmental practices as well as SC disruptions. Similarly, this also signified a practical position, where both academics and management need to pay more focus to the future.

7.3 Contributions of the Thesis

This research study underlined several sustainable forces influencing SSCM practices as well as performances from manufacturing-based stakeholders' points of view, with a particular focus on employee engagement and their contribution. By considering stakeholder theory and job responsibilities, this thesis highlights different types of inbound stakeholders' groups and their operational activities, and explained how garment inbound stakeholders (i.e., the top level of management and lower level of management) enhances business performance by adopting sustainable practices in their operational activities. Therefore, through institutional theory-memetic, normative and coercive- this thesis examined institutional pressures and mechanisms from the perspectives of inbound stakeholders, to emphasise their contribution to the implementation of SSCM performances.

Through mixed-method research, this thesis highlighted sustainable forces from a manufacturing point of view and categorised them as -internal and external forces in conjunction with supporting and hindering aspects of SSCM performances. Furthermore, several conflicting assumptions were also presented with an insight that

these forces could also hamper sustainable practices within the shop floor of the garment factory. Particularly, through extensive statistical analysis, this thesis highlighted how employee engagement could mediate the relationship between stakeholder decisions and firm performances (i.e., social, economical, environmental, and SC disruptions). Therefore, a moderated mediation analysis has also been conducted to understand the relationship between SSCM practices, on employee engagement and firm performance. Table 7.3 summarise these contributions, which are developed more in the following sections.

	Thesis contributions
Research Contribution	1. Through literature review and analysis, this thesis highlighted the types of available inbound stakeholders (RQ1) and their engagement in shopfloor sustainable practices through job responsibility, in relation to stakeholder theory. 2. The empirical findings highlighted the instrumental pressures and mechanisms from an inbound stakeholder viewpoint, in the implementation of SSCM practices in relation to institutional theory. 3. By answering RQ3a and RQ3b, this thesis highlighted the sustainable forces, in conjunction with supporting, hindering, and conflicting aspects of SSCM performances. 4. By answering RQ4, this study underlined how employees engaged could enable SSCM procedures within the shop floor premises of the garment industry.
Practical Contribution	1. This thesis developed a deep understanding of the sustainable practices of external stakeholders in conjunction with their job responsibility while discussing the implementation of effective sustainable practices. 2. This thesis suggested the possible conflicts between SSCM practices and SSCM performances by highlighting several assumptions regarding sustainable forces. 3. This thesis provides evidence about the significance of employee engagement in garment shopfloor sustainable

	practices, to internal management and other SC stakeholders. 4. This thesis highlighted several implications for SC stakeholders and policymakers as future recommendations.

Table 7.3: Summary of research and practical contributions.

7.3.1 Research contributions

This research study contributes to filling the prior knowledge gaps on employee engagement and SSCM in the challenging institutional context of a developing country. There are several research gaps that have been addressed throughout the chapters, including the followings:

7.3.1.1 Inbound stakeholders perspective on SSCM.

First, one of the important contributions of this study is to expand the research stream of SC partners through the development of inbound stakeholders' perspectives on SSCM. Prior contextual research has explored sustainability, and sustainable supply management practice is based on literature (Sauer & Seuring, 2018; Schneider & Wallenburg, 2012). In particular, Nath et al. (2020, 2019) explored sustainability from multi-tier suppliers and Huq et al. (2021, 2020) explored SC disturbances from the managerial point of view, but did not explore the perspective of inbound stakeholders' participation in SSCM. To fill this research gap, this study has offered an in-depth understanding of the participation of inbound stakeholders in sustainable practices through an expansion of stakeholder theory based on empirical research.

In particular, following an empirical study conducted by Huq et al. (2020), it is evident that a more methodical approach is necessary to examine the connections between different actors in garment SCM, especially at the tier 1 level. Similar to this, Nath et

al (2020) also called for more research on downstream tiers of garment SCM to provide an inclusive understanding of SSCM implementation. This study builds upon and extends their findings by conducting a comprehensive analysis of the viewpoints of manufacturing-based inbound stakeholders on SSCM.

7.3.1.2 Stakeholders institutional pressures and mechanisms to SSCM- a holistic framework.

Second, this study presented a cross-matching between qualitative and quantitative findings, from two types of inbound stakeholders in the identification of institutional pressures and mechanisms to SSCM. Several prior research highlights the institutional context of the Bangladeshi garment industry and were limited to the implementation of social sustainability by SC partners (Huq et al., 2020; Nath et al., 2019; Yadlapalli et al., 2018). Particularly, Nath et al. (2019) used an abductive interview-based approach to explore the invisible side of social sustainability, Yadlapalli et al. (2018) used a deductive survey-based approach to explore government mechanism in the retailer-manufacturer relationship, and Huq et al. (2020) used an inductive case-based approach to explore socially sustainable practices in the context. Nevertheless, among them, deduction can be used for the verification of possible theories, whereas inductive reasoning is difficult to prove in the production of theories and the abductive approach is fruitful for qualitative secondary analyses that are orientated towards theory building (Henninger et al., 2023; Timmermans & Tavory, 2012). As such, this study used a deductive approach to verify both the stakeholder theory and the institutional theory, and empirically developed a holistic fame work for the performance of SSCM, drawing on established theoretical knowledge.

Nonetheless, it is interesting to note that some contextual researchers have emphasized the significance of downstream supply chain actors' SSCM perceptions in response to stakeholder theory (Huq et al., 2020; Nath et al., 2020), while others highlighted institutional forces which could influence the sustainability practices, but didn’t actually describe their relevancy towards garment shopfloor’s SSCM practices

(Chowdhary et al., 2020; Nath et al., 2019; Huq et al., 2016). In response to this gap, this study provides empirical evidence of coercive, mimetic, and normative pressures and mechanisms in response to the manufacturing-based industry's institutional context, where the focal point was on the lower-level of management in response to stakeholder perspective on garment SCM.

7.3.1.3 Stakeholder forces, i.e., supporting, hindering, and conflicting related to SSCM.

Third, one of the major contributions of this research related to inbound stakeholders' sustainable forces. In particular, this study highlighted several conflicting (self-contradictory) forces through both qualitative and quantitative findings, which could impede sustainable practices within factory boundaries. For instance, the qualitative finding provides greater insight into the initial findings from Nath et al. (2020) that manufacturer perceives sustainability-related cost as an expense but not as an investment. Moreover, quantitative findings provide insight into findings from Glover et al. (2014), that garment manufacturers perceived economic security is stronger than maintaining sustainable practices. These are significant, as these forces could create confusion among sustainable practices and performances.

7.3.1.4 Employee's engagement on SSCM.

Fourth, the most significant contribution is toward the view of employee engagement in the Bangladeshi garment industry. Previous research identified different upstream management actors and how they linked each other while implementing sustainability decisions and have not actually focused on the downstream tiers of stakeholder engagement (Huq et al., 2021; Nath et al., 2019). A research gap is to note- as a key stakeholder of sustainability practices in the factory premises-how shop floor employees' engagement can enhance the sustainability practices. Specifically, Nath et al. (2019) explored through a secondary analysis that multi-tier apparel suppliers could influence governance mechanisms for sustainability practices, and Huq et al.

(2021) explored disturbances in SC from a managerial point of view. This quantitative finding of this study expands the contextual research stream by providing empirical evidence of employee engagement in sustainable practices, especially highlighting the relationship between employee engagement influence stakeholder decisions on sustainable practices as well as firm performance.

Substantially, through empirical evidence, the quantitative outcome evaluates the research opportunity for SSCM practices. Specifically highlighted exactly where the improvement is needed. Several contextual studies highlighted the importance of legislation and institutional links regarding sustainable practices but often neglect the execution of these practices. This research study contributed to the research stream by shedding light on the operational aspect of SSCM practices, and positioned the significance of employee engagement onward.

7.3.1.5 Crossmatching of the findings.

Finally, this research enriches the recent contextual literature on SSCM. For instance, several contextual researchers have used qualitative thematic analysis to identify the different forms of sustainable practices along with the performances, particularly from multiple stakeholders' viewpoints, while ignoring the quantitative perspective in the studies (Yadlapalli et al., 2018; Chowdhary et al., 2020; Nath et al., 2020). This reflects the scarcity of this topic. To fill this gap, this study used two different methodological choices- semi-structured interviews and surveys for data collection, and presented a crossmatching between thematic analysis to identify qualitative perspective and quantitative analysis to identify moderating impact of employee engagement on the factory's SSCM practices.

Notably, in response to lower-level of garment employees' engagement in shop floor' SSCM practices, this study's data sets i.e., qualitative, and quantitative complement each other and contribute to a more comprehensive understanding of the contextual SSCM practices as well as performances. In particular, several pieces of evidence

were put forward to confirm: ‘how’ top-level management could motivate lower-level of employee’s SSCM perceptions and ‘where’ they can bring a radical change in SSCM performances, specifically through their engagement in garment factory’s shop floor sustainability practices.

7.3.2 Practical contributions

Turning to the practical contributions, this research study enhances the understanding of the practical value of SSCM forces in the factory’s premises, specifically by emphasising the importance of employee engagement in shopfloor’s sustainability practices. Below are some context-specific contributions that this study presented.

7.3.2.1 Implications for inbound management.

Firstly, by highlighting the job responsibility of both top and lower- levels of inbound management, this thesis shed light on the sustainability practices in shopfloor’s operational activities, particularly the nature of lower-level management highlighted the explanatory phrases of a specific engagement of a garment employee. For example, responsibilities explain why, how, where, and how often the sustainability practices and duties are performed (Giunipero et al., 2012). This is important, as through job responsibility management could identify where/which area is lacking in SSCM practices and how this could be improved. For example, a garment compliance officer typically assists in implementing and maintaining factory policies and regulations in compliance with all applicable employment laws and regulations, whereas an NHS compliance officer typically assesses the environmental guidelines and regulations to provide recommendations to improve overall environmental performance.

7.3.2.2 Implications for buyers.

Through the identification of institutional pressures and mechanisms, this study presented a guideline for external stakeholders of the garment supply chain. Specifically, the buyer and other material suppliers should emphasise collective institutional pressures by carefully selecting suppliers, assessing them, and cooperating with them to implement sustainable practices in the broader SC network. Furthermore, the findings highlighted that the buyer could create coercive pressure through inspection and mimetic pressure through sustainable sourcing. On the contrary, evidence supports that the buyer could also provide monetary support by providing financial incentive to the manufacturer for their sustainability practices. For instance, buyers could provide updated health and safety training to the lower level of management through collaboration with manufacturers and strengthen their skills and capabilities to practice SSCM more effectively in the factory premises.

7.3.2.3 Implications for legislative bodies.

This study also provides several implications for legislative bodies, like governments, trade associations, and unions, to sustainable standards based on the needs of manufacturers. First, the Bangladeshi government should establish and continually enforce comprehensive regulations to ensure sustainability practices, particularly in new infrastructures. For example, the evidence indicates that garment owner emphasized the necessity of regulatory certification, which is one of the key institutional coercive pressures, comes in the form of environmental and social assessment (Jacobs & Singhal, 2017). Second, trade associations and unions can play an important role in implementing sustainable practices across garment supply chain mimetic engagement, through collaboration and compliance. Third, the outcomes of this study can help guide the legislative bodies to revise their current economic policies and strategies to ensure participation from retail buyers, specifically through monetary engagement, based on the economic costs and benefits of sustainability initiatives would provide.

7.3.2.4 Implications for other SCM partners.

The final implication of this study suggested for contextual other SCM partners. This research established strong empirical evidence that the LEED-based factory was portrayed as a role model for its sustainable practices and possessed a specific brand value, which substantially enhance the returned-on investment. For instance, after the Rana Plaza accident, retail buyers emphasised more on certifications such as LEED, ACCORD, and Alliance while placing an order. The research findings suggested that when manufacturers consider sustainable practices in their operations, they not only achieve better economical performances as profit, and market share but also could support environmental performances as saving energy and reducing pollution, and social performances as skilled employees. The positive relationship between sustainable practices and firm performances, through employee engagement and stakeholder decisions has the potential to promote the adoption of SSCM practices in garment shop floor operations as a strategy to improve SSCM performances.

Finally, this study's findings provide manufacturer-based stakeholders with multiple sustainable forces related to the SSCM practices, such as supporting, hindering, and conflicting, that will help management decide and adopt sustainable practices more easily. For instance, a strong compliance structure tie between brand name and pricing as economic performance, and may function as a safeguard for the manufacturers, specifically when several sudden occurrences like -Covid-19 and recessions are involved. Moreover, with collaboration among SC partners garment manufacturers are more likely to persuade other SC actors to adopt sustainable practices. This study encourages contextual stakeholders by providing several strong empirical shreds of evidence and forwarded the assumption that sacrificing some of the short-term benefits might provide long-term gains, especially in the adoption of shopfloor sustainable practices.

7.4 Limitations

While this study has demonstrated several significant research as well as practical contribution, there are limitations that needed to be acknowledged.

7.4.1 Single country focus.

The first limitation concerns about research focus, which is basically backed by single-country perspectives. In particular, the primary data for this research were restricted to a particular context and a manufacturing-based industry, the Bangladeshi garment industry. Moreover, the unit of analysis also focuses on a small number of sample participants, with a limited category of SC stakeholders. Yet, the main aim of this research is two parts, one is to in-depth knowledge about stakeholders' sustainable forces influencing SSCM in the Bangladeshi garment industry, and the second is to identify how employee engagement enables SSCM performances in garment shop floor premises. Consequently, following a convergent mixed method approach, two forms of data collection and both qualitative and quantitative data analysis with cross-interpretation may achieve rigorous generalisation.

Moreover, this limitation was related to the transferability of the findings of this research study. Due to having context-specific challenges, the findings of this study-stakeholder categories, institutional pressures and mechanisms, sustainable forces, SSCM practices as well SSCM performances, employee engagement constructs and relationships logics with regard to the Bangladeshi garment industry are indeed context-specific. Several researchers suggested that contextual dynamics play a critical role in the overall SSCM implementation of the SC network and could not be segregated (Creswell and Creswell 2018; Silvestre, 2015). Although participants in the sample of this research have greater control over contextual issues and the findings are limited to the Bangladeshi garment industry, caution must be exercised that the findings of this study may not be fully transferable to other SC contexts and industries.

7.4.2 Data collection shortcomings.

Due to the disruption of covid-19, this study ended up with the participation of manufacturing stakeholders, where the research participants are basically from the Bangladeshi garment industry. For instance, data was gathered from semi-structured interviews and surveys with top and lower-level management, influencer, and enablers of the garment supply chain. However, during the pilot study, an informal conversation was held with several SC partners to justify the relevance of the study questionnaire.

However, in terms of stakeholder perspective, some researchers argued that the sustainable performance of the garment industry should also be evaluated from a consumer point of view, particularly after the Rana Plaza disaster (Hoque et al., 2020; Roy et al., 2018), to check how sustainable practices can bring changes in factory premises, especially for garment workers (Soundararajan et al., 2018).

7.4.3 Single researcher mode.

The final limitation of this study is related to the research process. In particular, all semi-structured interviews, surveys, transcription translation, coding, theme development, and statistical analysis were carried out entirely by a single researcher. Although these findings are based on the explanations given by the research participants on the implementation issues of SSCM, a researcher is also part of the study, raising potential concerns about research bias in interviews and data analysis. Several attempts were made to avoid it, but the issue of individual research prejudices cannot be completely eliminated from the research process. For example, strict research protocols were followed to maintain research rigors.

7.5 Future research opportunities

Despite this limitation, this study has proposed a series of recommendations and a holistic framework for SSCM implementation for a manufacturing-based garment industry. Based on the theoretical framework offered by this study, a range of future research opportunities can be suggested.

7.5.1 Additional SC stakeholder engagement

First, this study is an initial attempt to identify employee engagement's effect on manufacturing-based industry's shopfloor's sustainable practices. Further research is needed to empirically test the suggested relationship of this study, particularly involving other stakeholders of the garment supply chain. It would be interesting to investigate employee's participation in SSCM, from other stakeholder's perspectives. This is important because sustainability initiatives along supply chains eventually depend on the perception, consciousness, action, and support of other SC partners, especially consumers.

7.5.2 LEED and non-LEED factory's engagement

Second, the findings of this study are heavily supported by LEED-based factory shopfloor practices, where inbound stakeholders are already familiar with the concept/rules/regulations and the benefit of having sustainable practices. Potential research is needed between LEED factory performance evaluation and non-LEED factory participation, specifically for SSCM practices (i.e., social, economic, and environmental). Therefore, it would be interesting to investigate the perceptions of inbound stakeholders of non-LEED factories about sustainable practices and performance (Yadlapalli et al., 2018).

7.5.3 Longitudinal empirical study: pre-Covid and post-Covid scenario.

Third, as this research has been carried out just before the COVID disruptions, it would be interesting to identify the perceptions of the inbound stakeholders about sustainable practices, specifically after the COVID scenario. An empirical longitudinal study would be interesting to investigate considering the same research respondents. For example, a semi-structured interview with the top level of management and a survey with the lower level of management within the factory's boundary.

7.5.4 Cross-country/cross-sectional empirical research

Fourth, this study is an initial attempt to empirically develop a holistic framework, involving employee engagement in a developing country context like Bangladesh. More research is needed to empirically test the suggested relationship of this study against a large cross-sectional data set, which could allow a more generalisable conclusion. As this study focused only on a single manufacturing industry, more empirical research is needed across countries to understand any difference in the practices of SSCM in other industries as well as in other countries. Therefore, it would be interesting to investigate SSCM performance considering more diverse manufacturing industries in the context of developing countries, such as leather products (Bangladesh), garment (India and Vietnam), service industry (Bangladesh), and plastic (Thailand).

7.5.5. Focus on employee engagement as a research stream.

Finally, throughout the findings of Chapters 4 and 5, the importance of employee engagement in manufacturing-based garment industry's sustainable practices, more specifically on garment shop floor operational activities, is highlighted. Several signposts were made throughout the discussion (see Chapter 6), and highlighted why academics and practitioners should focus on employee engagement as an emerging

research stream. The most noteworthy was that the quantitative findings highlighted exactly how and where management should focus to improve the SSCM practices of the garment shop floor, as well as the SSCM performance. As for academics, the empirical findings also highlighted the need for more research in this regard.

7.6 Summary of the Chapter

This chapter summarises the whole thesis and answers each research question. The thesis' contributions were drawn up, and the limitations and possible future directions were discussed from various perspectives. To conclude, although this thesis crossmatch between qualitative and quantitative findings to identify SSCM forces in a manufacturing-based contextual industry and explored the influence of employee engagement on garment shopfloor's sustainable practices, there are still many gaps to be filled in the future. In this area, which is really young and needs more research attention, the author believes that there will be more studies on it in the coming years.

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Appendix

A Semi-structured interview questions

Cardiff Business School
Ysgol Busnes Caerdydd

Interview Questions

Aim of the Research: The purpose of this research to explore how sustainable supply chain management (SSCM) and its moderating forces help to generate sustainable development for the garments employees' of Bangladesh. Specially, how the inbound stakeholders influenced the key practices of SSCM in this industry.

Background/General

- **Overview of the organization** (i.e., name of the company/government institution, main service/production, production capacity, number of employees, operating years, average annual sales, type of business alliance (i.e., suppliers/manufactures/retailer/ others), principal export destination)
- **Overview of the participant** (i.e., designation, job responsibility, working years, level of education).

Part: 1 Sustainability

- Are you familiar with the term sustainability/sustainable development?
- What does the term sustainability mean to you? (i.e., economical, environmental and social).
- What are the potential benefit of sustainability for your organization?
- What you think that your employee consider, how good you are at sustainability?
- Do you have any plan to expand your business in more sustainable way? Why?
- Do you think these plans can give you advantage over competitors?

Part: 2 Sustainability & Supply Chain Management

- In case of garments business, what is sustainable supply chain management (SSCM) mean to you? How important it is and why?
- How far a supply chain management is consider sustainable? Can you draw it?

- Do you think SSCM can bring change in your business performance (i.e., operational, financial, environmental)? How?
- What are the potential benefit and cost of having SSCM in your business? (i.e., positive/negative).
- How do measure the advantages/ impact of SSCM?

Part: 3 Sustainability & Stakeholders

- Who are your inbound stakeholders? Do you think employee is an inbound stakeholder?
- Is there any relation between stakeholder and SSCM? How can they create pressure/ impact on SSCM?
- What are the available practices of stakeholder's in current garments business of Bangladesh?
- Are there any moderating forces related to SSCM? If yes, what are they? (i.e., superiors, competitors, governing bodies, and social obligations).
- Do these forces have any effect/impact on your operational/financial business/operation? How?
- Which/who are particularly relevant to your decision-making process? Do these forces (i.e., above one) vary depending on your stakeholder group? How?
- Do these forces of stakeholders affect your SSCM implementation? How?
- What you think about employee engagement in SSCM? How can they engage with it?
- How can your stakeholders encourage the performance of your employee?

Part 4: Willingness to Engage/ Invest

- Are you willing to engage/ invest in SSCM?
- What are the forces that should be considered for SSCM while decision making?
- Are you willing to involve sustainable management procedure to influence the performance of your business?

Follow up/ Probing Questions

- Can you confirm whether SSCM is important for you?
- Can you confirm whether you are willing to engage more in SSCM procedure?
- Can you confirm whether you are willing to engage your employee more in SSCM procedure?

B Survey Questions

Cardiff Business School
Ysgol Busnes Caerdydd

Survey Questions

Project Title:

To measure employees' perception about sustainable supply chain management and its moderating impact on financial and operational performance of Garments industry: Insight from transitional economy.

Investigators:

Sharmin Akter Julie (PhD student), JulieSA@cardiff.ac.uk , Professor Andrew Potter (Supervisor), PotterAT@cardiff.ac.uk , Dr. Ruoqi Geng (Supervisor), GengR@cardiff.ac.uk

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Dear Participant,

You are warmly invited to participate in a research project, conducted by **Cardiff Business School** on the topic of **sustainable supply chain management (SSCM) in garments industry of Bangladesh**. The main purpose is to explore how SSCM and the pressure from stakeholders help to generate sustainable development for the garments employees of Bangladesh.

This is an **independent research** and will take approximately 30 minutes to complete. Your response will be kept strictly **confidential and anonymous**. Further, as a participant you have the right to **withdraw your participation at any time**. There is no risk associated with participating in this survey. This is also promise that all data collected from participants will be used only for research purposes and this study does not relate with **any kind of your job performance.**

Please provide your opinion according to your background and experience. However, if you are unduly concerned about your responses to any of the questionnaire items or if you find participation in the project distressing, you should contact **Professor Andrew Potter** at your convenience. **Andrew** will discuss your concerns with you confidentially and suggest appropriate follow-up, if necessary.

Yours sincerely,

Sharmin Akter Julie
PhD student at Logistics and Operations Management Section.
Cardiff Business School, Cardiff University. CF10 3EU, United Kingdom.

Consent to Participate:

I understand and agreed with the information given above and I am giving my consent to participate in the research.

I work as an employee of the …….factory of Bangladesh.

Agree ☐ **Do not agree** ☐

Employees' perception about sustainable supply chain management (SSCM) and its moderating impact on financial and operational performance of Garments industry of Bangladesh.

All information will remain strictly confidential

To maintain anonymity, please do not write your name on the questionnaire. However, if you would like a summary of results, please contact **Sharmin Akter Julie** by phone or email as per contact details provided above. Below is an example how to complete the questionnaire:

Measurement Statement	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
Sustainability is essential for modern business.	1	2	3	4	5	6	7

The instructions below will assist you in completing the questionnaire:

By circling 7, your response is more towards **Strongly Agree** that sustainability is important and necessary for modern business.

- It is important that you **Please Answer All The Questions** to the best of your knowledge, even if some may appear to be similar. Your answers to all sections of this questionnaire are vital to the success of this study. Unfortunately partly answered surveys are not useable. Therefore, please do not leave questions unanswered.
- There are no right or wrong answers.
- If you wish to comment on any of the questions, please use the space provided at the end of the questionnaire.
- The findings of this study will be reported in an aggregated form, so no organization, department or individual respondent can be identified.
- If you have any queries or comments about questionnaire, please do not hesitate to contact **Sharmin Akter Julie** (JulieSA@cardiff.ac.uk).

We appreciate highly your time and effort to participate in this research project. If you would like a copy of the findings sent to you, please phone, mail or send your business card separately to the questionnaire. Please fold and sealed it in the provided envelop.

Part 1: Respondent Profile

The following information requires details of the respondent. Please indicate your response in the box provided.

1. What is your position in the organization?

   Supervisor ☐ Assistant supervisor ☐ Line Manager ☐ Floor Manager ☐ Technician ☐ Site Inspector ☐

   Operator ☐ Helper ☐ Others, please specify_____

2. Which department are you associated to?

   Fibre ☐ Cutting ☐ Sewing ☐ Finishing ☐ Accounts ☐ Transport ☐

   Others, please specify_____

3. What is your level of education?

   Post Graduate ☐ Graduate ☐ HSC ☐ SSC ☐ Secondary ☐ Primary ☐

   Others, please specify_____

4. How long have you been working in the current position?

   Up to 2 years ☐ 2-4 years ☐ 5-10 years ☐ Over 10 years ☐ Over 15 years ☐ Over 20 years ☐

5. Your organization is _____ in this business alliance:

   Manufacture ☐ Supplier ☐ Retailer ☐ Warehouse ☐

   Others, please specify_____.

6. What type of company is your organization?

   Domestic ☐ National Owned ☐ Multinational ☐ Joint venture ☐ Foreign owned ☐

7. Please indicate what category of product your organization produces,_____

_____

_____

8. Please indicate the geographical location you work in

_____

9. What does sustainability (i.e. environmental, economical and social) mean to you?

Please specify_____

_____

10. Does your company understand sustainable supply chain management initiatives?

Yes ☐ No ☐ If yes, what are they (please specify)_____

11. Do these initiatives help you?

Yes ☐ No ☐ If yes, how are they help (please specify) _____

_____

12. In your opinion, why does your organization undertake sustainable supply chain management initiatives? (You can choose more than one).

My firm doesn't understand sustainable supply chain management initiatives? ☐ Government requirements ☐

Consumer requirements ☐ Wholesaler/Retailer requirements ☐ Supplier requirements ☐

Win over competitors ☐ Goodwill/emotional good ☐ It's what our companies normally do ☐

Part 2: Measuring the level of sustainability participation

Measurement Statement	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
	1	2	3	4	5	6	7
Our factory maintains good sustainable practices.							
Our factory follows standards for sustainability (i.e. ISO 14001) quite strictly.							
Our factory provides work-place safety training regularly.							
Our factory ignores eco-friendly raw materials for production.							
Our factory provides a standard living and regulated overtime wage for workers.							
Our factory uses limited amount of hazardous/harmful/toxic materials.							
Our factory efficiently consumes natural energy (i.e. use of sunlight, natural air).							
Our factory neglects waste management.							
Our factory breaches health and safety standards (i.e. building fire safety) strictly.							
Our factory doesn't use child labour.							
Our factory discriminates amongst the workers.							
Our factory has favourable employee initiatives (i.e. health care, insurance schemes).							

Part 3: Measuring the level of SSCM participation

Measurement Statement	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
	1	2	3	4	5	6	7
Our factory have a strong commitment to SSCM from managers.							
Our management is not familiar with other factory's knowledge and skills of SSCM.							
Our management does not believe in gift giving as bribery between company representatives and SCM partners.							
We have strong alliances with our supply chain partners.							
Supply chain partners help our factory to improve our network.							
Our supply chain partners deliver sustainable audits for ensuring internal sustainable management.							
Our supply chain partners encourage our factory to ensure a better work/life balance across the supply chain.							
Our supply chain partners maintain transparency within the SCM network.							
Our factory's management introduce employee health and safety compliance and auditing systems with other factories.							
Our supply chain partners ensure that other factories do not use child labour.							
Our supply chain partners pay their workers a living wage.							
Our factory discriminates among the workers.							

Part 4: Measuring the level of stakeholder involvement

Measurement Statement	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
	1	2	3	4	5	6	7
I, know who our stakeholders are.							
Our factory has large number of stakeholders (i.e. suppliers, retailers and wholesalers) compared to most of our competitors.							
Our stakeholders have a direct influence on our operation.							
Our stakeholders are unfamiliar about our training schemes.							
Our stakeholders have specific activities for community involvement and development.							
We feel peer pressure from our stakeholders to increase our working performance.							
We adjust our activities according to our stakeholders' demands.							
It is our factory's regular culture to be productive all the seasons.							
We get extra monetary benefits for seasonal (i.e. pick up time) work.							
The governing bodies regularly check-up our work pattern to ensure health and safety standards.							
The governing bodies regularly visit us to make us knowledgeable about new environmental rules and regulations.							
We are unable to talk with supervisory bodies about our concerns.							

Part 5: Measuring the level of employee engagement

Measurement Statement	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
	1	2	3	4	5	6	7
We took part strongly in our factory's growth and development.							
Our management works for our empowerment.							
Our management practices fair behavioural norms for everyone.							
Our management provides constructive feedback on our performance.							
We feel liberal while do our work socializing.							
Our factory's management appreciates, encourages and supports our psychological wellbeing'.							
Our factory's work conditions are more satisfactory than our competitors.							
Our factory has little space in between our work stations.							
Our managers provide positive feedback.							
We have a proactive attitude towards our work responsibilities.							
We feel a sense of pride in working there.							
We do not get enough help in our work, at peak time.							
Our motive is to increasing our success along with our organizational prosperity.							
We feel pressure from other factories to increase our performance.							
Our management have little mechanism for our empowerment.							

We feel stress while working there.							
We are solely responsible for our sustainability performance.							

Part 6: Measuring the level of firm performance

Measurement Statement	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
	1	2	3	4	5	6	7
Environmental Performance							
Our factory is efficient in using resources (i.e. electricity).							
Our factory is struggling in sustainable raw material consumption.							
Our factory's management is incompliant with current environmental laws.							
We are pleased with our factory's current environmental reputation.							
We are pleased with our factory's environmental impact and risk to the general public.							
Our factory can do better in terms of environmental sustainability.							
Economical Performance							
Our factory shares a great part in producing our owners' equity.							
Our factory provides a higher profit margin than other factories.							
Our factory has a higher sales volume than the similar kind of other factories.							
Our factory has a prestigious brand name among our other factories.							

Our management is satisfied with our factory's market share.							
Social Performance							
We are pleased with our management in terms of awareness among employees on sustainability initiatives (i.e. healthcare, insurance schemes and safety programs.)							
Our factory's management is inattentive to our wellbeing.							
Our factory's management works with our union to create awareness and protection of worker rights.							
We are satisfied with our factory's management in terms of community involvement and development.							
Overall, the total condition of our factory is favourable for sustainable development.							

Thank you very much for your cooperation.

C Survey questionnaire in hybrid language (Bangla + English)

প্রকল্প শিরোনাম:

টেকসই সাপ্লাই চেইন ম্যানেজমেন্ট এবং গার্মেন্টস শিল্পের আর্থিক ও পরিচালিত পারফরম্যান্সে এর মধ্যপন্থী প্রভাব সম্পর্কে কর্মীদের ধারণার পরিমাপ করা: ক্রান্তিকালীন অর্থনীতি থেকে অন্তর্দৃষ্টি।

তদন্তকারী:

শারমিন আক্তার জুলি (পিএইচডি শিক্ষার্থী), JulieSA@cardiff.ac.uk, অধ্যাপক পটার (সুপারভাইজার), PotterAT@cardiff.ac.uk, ডাঃ রুওকি গেঙ্গ (সুপারভাইজার), GengR@cardiff.ac.uk

প্রিয় অংশগ্রহণকারী,

বাংলাদেশের গার্মেন্টস শিল্পে **টেকসই সাপ্লাই চেইন ম্যানেজমেন্ট (এসএসসিএম)** শীর্ষক **কার্ডিফ বিজনেস স্কুল** কর্তৃক পরিচালিত একটি গবেষণা প্রকল্পে অংশ নেওয়ার জন্য আপনাকে আন্তরিকভাবে আমন্ত্রণ জানানো হচ্ছে। মূল উদ্দেশ্যটি কীভাবে এসএসসিএম এবং স্টেকহোল্ডারদের চাপ বাংলাদেশের গার্মেন্টস কর্মীদের টেকসই বিকাশ ঘটাতে সহায়তা করে তা সন্ধান করা।

এটি একটি **স্বাধীন গবেষণা** এবং প্রায় 30 মিনিট সময় লাগবে। আপনার প্রতিক্রিয়া কঠোরভাবে **গোপনীয় এবং বেনামে** রাখা হবে। আরও, একজন অংশগ্রহণকারী হিসাবে **যে কোনও সময় আপনার অংশগ্রহণ প্রত্যাহার করার অধিকার আপনার রয়েছে।** এই সমীক্ষায় অংশ নেওয়ার সাথে কোনও ঝুঁকি জড়িত নেই। এটি প্রতিশ্রুতি দেয় যে অংশগ্রহণকারীদের কাছ থেকে সংগৃহীত সমস্ত ডেটা কেবল গবেষণার উদ্দেশ্যে ব্যবহার করা হবে এবং **এই গবেষণাটি আপনার কাজের পারফরম্যান্সের কোনও ধরণের সাথে সম্পর্কিত নয়।**

আপনার পটভূমি এবং অভিজ্ঞতা অনুযায়ী আপনার মতামত প্রদান করুন। তবে, যদি আপনি প্রশ্নাবলির আইটেমগুলির কোনও সম্পর্কে আপনার প্রতিক্রিয়া সম্পর্কে অযৌক্তিকভাবে উদ্বিগ্ন হন বা যদি আপনি এই প্রকল্পে অংশীদারিত্ব মনে করেন, তবে আপনার সুবিধার্থে আপনার প্রফেসর পটারের সাথে যোগাযোগ করা উচিত। আপনার উদ্বেগগুলি গোপনে আপনার সাথে আলোচনা করবেন এবং প্রয়োজনে যথাযথ ফলোআপের পরামর্শ দেবেন।

আপনার আন্তরিক,

শারমিন আক্তার জুলি

লজিস্টিকস GÛ অপারেশনস ম্যানেজমেন্ট বিভাগে পিএইচডি শিক্ষার্থী।

কার্ডিফ বিজনেস স্কুল, কার্ডিফ বিশ্ববিদ্যালয়, সিএফ 10 3 ই.ইউ, যুক্তরাজ্য।

<u>অংশ নিতে সম্মতি:</u>

আমি উপরে বর্ণিত তথ্যের সাথে বুঝতে এবং সম্মত হয়েছি এবং আমি গবেষণায় অংশ নেওয়ার জন্য আমার সম্মতি দিচ্ছি।

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সম্মত ……. **অসম্মত** ……

<u>সমস্ত তথ্য কঠোরভাবে গোপনীয় থাকবে</u>

নাম প্রকাশ না করার জন্য, দয়া করে প্রশ্নাবলীতে আপনার নাম লিখবেন না। তবে, আপনি যদি ফলাফলের সংক্ষিপ্ত বিবরণ চান, দয়া করে উপরে প্রদত্ত যোগাযোগের বিবরণী অনুযায়ী ফোন বা ইমেলের মাধ্যমে **শারমিন আক্তার জুলির** সাথে যোগাযোগ করুন। নীচে কীভাবে প্রশ্নপত্রটি সম্পূর্ণ করবেন:

পরিমাপের বিবৃতি	**দৃঢ়ভাবে অসম্মতি**	**অসম্মত**	**কিছুটা অসম্মতি**	**নিরপেক্ষ**	**কিছুটা সম্মতি**	**সম্মত**	**দৃঢ়ভাবে সম্মতি**
আধুনিক ব্যবসায়ের জন্য টেকসই প্রয়োজনীয়তা।	1	2	3	4	5	6	7

<u>নীচের নির্দেশিকাগুলি আপনাকে প্রশ্নপত্র সম্পূর্ণ করতে সহায়তা করবে:</u>

7wU প্রদক্ষিণ করে, আপনার প্রতিক্রিয়া দৃঢ়ভাবে সম্মতির দিকে আরও রয়েছে যে আধুনিক ব্যবসায়ের জন্য টেকসই গুরুত্বপূর্ণ এবং প্রয়োজনীয়।

- এটি গুরুত্বপূর্ণ যে আপনি দয়া করে **সমস্ত প্রশ্নের উত্তর** আপনার জ্ঞানের সেরাটির কাছে দিন, এমনকি কিছু কিছু একইরকম বলে মনে হচ্ছে। এই প্রশ্নাবলীর সমস্ত বিভাগে আপনার উত্তরগুলি এই অধ্যয়নের সাফল্যের জন্য অতীব গুরুত্বপূর্ণ। দুর্ভাগ্যক্রমে আংশিক উত্তর জরিপগুলি ব্যবহারযোগ্য নয়। অতএব, অনুগ্রহ করে প্রশ্নগুলি ছেড়ে যাবেন না।
- এর কোনো সঠিক অথবা ভুল উত্তর নেই.
- আপনি যদি কোনও প্রশ্নের উপর মন্তব্য করতে চান তবে দয়া করে প্রশ্নাবলীর শেষে প্রদত্ত স্থানটি ব্যবহার করুন।
- এই অধ্যয়নের ফলাফলগুলি একত্রিত আকারে জানানো হবে, সুতরাং কোনও সংস্থা, বিভাগ বা স্বতন্ত্র উত্তরদাতাকে চিহ্নিত করা যায় না।

- প্রশ্নাবলী সম্পর্কে আপনার যদি কোনও প্রশ্ন বা মন্তব্য থাকে তবে দয়া করে শারমিন আক্তার জুলি (JulieSA@cardiff.ac.uk).এর সাথে যোগাযোগ করতে দ্বিধা করবেন না।

আমরা এই গবেষণা প্রকল্পে অংশ নেওয়ার জন্য আপনার সময় এবং প্রচেষ্টার প্রশংসা করি। আপনি যদি প্রেরিত ফলাফলগুলির একটি অনুলিপি চান তবে দয়া করে ফোন করুন, মেল করুন বা আপনার ব্যবসায়িক কার্ডটি প্রশ্নপত্রটিতে আলাদাভাবে প্রেরণ করুন। দয়া করে এটি সরবরাহিত খামে ভাঁজ এবং সিল করে দিন।

নিম্নলিখিত তথ্যের জন্য উত্তরদাতার বিশদ প্রয়োজন। প্রদত্ত বাক্সে আপনার প্রতিক্রিয়া ইঙ্গিত করুন।

সংস্থায় আপনার অবস্থান কী?

- সুপারভাইজার
- সহকারী সুপারভাইজার
- লাইন ম্যানেজার
- ফ্লোর ম্যানেজার
- টেকনিশিয়ান
- সাইট ইন্সপেক্টর
- অপারেটর
- সহায়ক
- .....

আপনি কোন বিভাগের সাথে যুক্ত?

- ফাইবার
- কাটিং
- সেলাই
- পরিবহন
- .....

আপনার শিক্ষার স্তরটি কী?

- স্নাতকোত্তর
- স্নাতক
- এইচএসসি
- এসএসসি
- মাধ্যমিক
- প্রাথমিক
- .....

আপনি বর্তমান অবস্থানে কত দিন কাজ করছেন?

- 2 বছর
- 2-4 বছর
- 5-10 বছর
- 10 বছরের বেশি
- 15 বছরের

- 20 বছরের বেশি

আপনার সংস্থা এই .....

- সরবরাহকারী
- খুচরা বিক্রেতা
- গুদাম
- .....

আপনার সংস্থাটি কোন ধরণের সংস্থা?

- গার্হস্থ্য
- জাতীয়
- মালিকানাধীন
- বহুজাতিক
- যৌথ উদ্যোগ
- বিদেশী মালিকানাধীন

আপনার সংস্থাটি কোন শ্রেণীর পণ্য করে তা দয়া করে চিহ্নিত করুন,

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.....
.....

টেকসইতা (অর্থাr পরিবেশগত, অর্থনৈতিক এবং সামাজিক) আপনার নির্ধারন করুন

.....
.....
.....

আপনার সংস্থা কি টেকসই সরবরাহ শৃঙ্খলা পরিচালন উদ্যোগ বুঝতে পারে?

- হ্যাঁ
- না,
- .....

এই উদ্যোগগুলি কি আপনাকে সহায়তা করে?

- হ্যাঁ
- না,
- .....

আপনার মতে, আপনার সংস্থা কেন টেকসই সরবরাহ চেইন পরিচালনার উদ্যোগ গ্রহণ করে? (আপনি একাধিক চয়ন করতে পারেন)।

আমার ফার্মটি টেকসই সরবরাহকারী চেইন পরিচালনার উদ্যোগগুলি বুঝতে পারে না?

- সরকারের প্রয়োজনীয়তা
- গ্রাহক প্রয়োজনীয়তা পাইকার / খুচরা বিক্রেতা প্রয়োজনীয় সরবরাহকারী প্রয়োজনীয়তা
- প্রতিযোগীদের শুভেচ্ছার / সংবেদনশীল ভাল জয়

- আমাদের সংস্থাগুলি সাধারণত এটি করে t

পরিমাপের বিবৃতি	দৃঢ়ভাবে অসম্মতি	অসম্মত	কিছুটা অসম্মতি	নিরপেক্ষ	কিছুটা সম্মতি	সম্মত	দৃঢ়ভাবে সম্মতি
	1	2	3	4	5	6	7
আমাদের কারখানাটি ভাল টেকসই অনুশীলনগুলি বজায় রাখে।							
আমাদের কারখানাটি টেকসইতার জন্য মানদণ্ড অনুসরণ করে (আইএসও 14001) বেশ কঠোরভাবে।							
আমাদের কারখানাটি নিয়মিতভাবে কাজের জায়গা নিরাপত্তা প্রশিক্ষণ সরবরাহ করে।							
আমাদের কারখানা উত্পাদন জন্য পরিবেশ বান্ধব কাঁচামাল উপেক্ষা করে।							
আমাদের কারখানা শ্রমিকদের জন্য একটি মানসম্পন্ন জীবন যাপন এবং নিয়ন্ত্রিত ওভারটাইম মজুরি সরবরাহ করে।							

আমাদের কারখানাটি সীমিত পরিমাণে বিপজ্জনক / ক্ষতিকারক / বিষাক্ত পদার্থ ব্যবহার করে।							
আমাদের কারখানাটি দক্ষতার সাথে প্রাকৃতিক শক্তি গ্রহন করে (যেমন সূর্যের আলো, প্রাকৃতিক বায়ু ব্যবহার)।							
আমাদের কারখানা বর্জ্য ব্যবস্থাপনাকে অবহেলা করে।							
আমাদের কারখানা স্বাস্থ্য এবং সুরক্ষার মানগুলি (যেমন বিল্ডিং ফায়ার সুরক্ষা) কঠোরভাবে লঙ্ঘন করে।							
আমাদের কারখানা শিশুশ্রম ব্যবহার করে না।							
আমাদের কারখানা শ্রমিকদের মধ্যে বৈষম্যমূলক আচরণ করে।							
আমাদের কারখানায় অনুকূল কর্মী উদ্যোগ রয়েছে (অর্থাত্ স্বাস্থ্যসেবা, বীমা প্রকল্প)।							

পরিমাপের বিবৃতি	দৃঢ়ভাবে অসম্মতি	অসম্মত	কিছুটা অসম্মতি	নিরপেক্ষ	কিছুটা সম্মতি	সম্মত	দৃঢ়ভাবে সম্মতি
	1	2	3	4	5	6	7
আমাদের কারখানার পরিচালকদের কাছ থেকে এসএসসিএমের প্রতি প্রতিশ্রুতি রয়েছে।							
আমাদের পরিচালনা এসএসসিএমের অন্য কারখানার জ্ঞান এবং দক্ষতার সাথে পরিচিত নয়।							
আমাদের পরিচালনা সংস্থাটির প্রতিনিধি এবং এসসিএম অংশীদারদের মধ্যে ঘুষ হিসাবে উপহার দেওয়ার বিষয়ে বিশ্বাস করে না।							
আমাদের সাপ্লাই চেইন অংশীদারদের সাথে আমাদের শক্তিশালী জোট রয়েছে।							
সাপ্লাই চেইন অংশীদাররা আমাদের কারখানাকে আমাদের নেটওয়ার্ক উন্নত করতে সহায়তা করে।							
আমাদের সাপ্লাই চেইন অংশীদাররা অভ্যন্তরীণ টেকসই পরিচালনা নিশ্চিত করার জন্য টেকসই অডিট সরবরাহ করে।							

আমাদের সাপ্লাই চেইনের অংশীদাররা আমাদের কারখানাকে সরবরাহ চেইন জুড়ে আরও ভাল কাজ / জীবনের ভারসাম্য নিশ্চিত করতে উত্সাহিত করে।							
আমাদের সরবরাহ চেনের অংশীদাররা এসসিএম নেটওয়ার্কের মধ্যে স্বচ্ছতা বজায় রাখে।							
আমাদের কারখানার পরিচালনা কর্মচারীদের স্বাস্থ্য এবং সুরক্ষা সম্মতি এবং অন্যান্য কারখানার সাথে নিরীক্ষণ সিস্টেম প্রবর্তন করে।							
আমাদের সরবরাহ শৃঙ্খলের অংশীদাররা নিশ্চিত করে যে অন্যান্য কারখানাগুলি শিশুশ্রম ব্যবহার না করে।							
আমাদের সাপ্লাই চেইনের অংশীদাররা তাদের কর্মীদের জীবন-যাপনের বেতন দেয়।							
আমাদের কারখানা শ্রমিকদের মধ্যে বৈষম্যমূলক আচরণ করে।							

পরিমাপের বিবৃতি	**দৃঢ়ভাবে অসম্মতি**	**অসম্মত**	**কিছুটা অসম্মতি**	**নিরপেক্ষ**	**কিছুটা সম্মতি**	**সম্মত**	**দৃঢ়ভাবে সম্মতি**
	1	2	3	4	5	6	7

আমি জানি আমাদের স্টেকহোল্ডাররা কারা।							
আমাদের বেশিরভাগ প্রতিযোগীদের তুলনায় আমাদের কারখানায় প্রচুর স্টেকহোল্ডার রয়েছে (সরবরাহকারী, খুচরা ব্যবসায়ী এবং পাইকার)।							
আমাদের স্টেকহোল্ডারদের আমাদের অপারেশনের উপর প্রত্যক্ষ প্রভাব রয়েছে।							
আমাদের স্টেকহোল্ডাররা আমাদের প্রশিক্ষণ প্রকল্পগুলি সম্পর্কে অপরিচিত।							
আমাদের অংশীদারদের সম্প্রদায়ের সম্পৃক্ততা এবং উন্নয়নের জন্য নির্দিষ্ট কার্যক্রম রয়েছে।							
আমরা আমাদের কাজের পারফরম্যান্স বাড়ানোর জন্য আমাদের স্টেকহোল্ডারদের কাছ থেকে চাপ অনুভব করি।							
আমরা আমাদের স্টেকহোল্ডারদের চাহিদা অনুযায়ী আমাদের ক্রিয়াকলাপগুলি সামঞ্জস্য করি।							
সমস্ত মৌসুমে উত্পাদনশীল হওয়া আমাদের কারখানার নিয়মিত সংস্কৃতি।							

আমরা মৌসুমী (সময় নেওয়ার) কাজের জন্য অতিরিক্ত আর্থিক সুবিধা পাই।							
প্রশাসনিক সংস্থা স্বাস্থ্য ও সুরক্ষা মান নিশ্চিত করার জন্য নিয়মিতভাবে আমাদের কাজের ধরণটি চেক-আপ করে।							
নতুন পরিবেশের নিয়মকানুন এবং নিয়মনীতি সম্পর্কে আমাদের জ্ঞানশীল করতে নিয়ন্ত্রক সংস্থা নিয়মিত আমাদের দেখতে যান।							
আমরা আমাদের উদ্বেগ সম্পর্কে তদারককারী সংস্থার সাথে কথা বলতে পারছি না।							

পরিমাপের বিবৃতি	**দৃঢ়ভাবে অসম্মত**	**অসম্মত**	**কিছুটা অসম্মত**	**নিরপেক্ষ**	**কিছুটা সম্মতি**	**সম্মত**	**দৃঢ়ভাবে সম্মতি**
	1	2	3	4	5	6	7
আমরা আমাদের কারখানার বৃদ্ধি এবং বিকাশে							
আমাদের পরিচালনা আমাদের ক্ষমতায়নের জন্য কাজ করে।							
আমাদের পরিচালনা সবার জন্য ন্যায্য আচরণের নিয়ম অনুশীলন করে।							

আমাদের পরিচালনা আমাদের কর্মক্ষমতা সম্পর্কে গঠনমূলক প্রতিক্রিয়া সরবরাহ করে।							
আমাদের কাজ সামাজিকীকরণ করার সময় আমরা উদার বোধ করি।							
আমাদের কারখানার পরিচালনা আমাদের মনস্তাত্ত্বিক সুস্থতার প্রশংসা করে, দেয় এবং সমর্থন করে ।							
আমাদের কারখানার কাজের পরিস্থিতি আমাদের প্রতিযোগীদের চেয়ে বেশি সন্তোষজনক							
আমাদের কারখানার মধ্যে আমাদের ওয়ার্ক স্টেশনগুলির মধ্যে খুব কম জায়গা রয়েছে।							
আমাদের পরিচালকরা ইতিবাচক প্রতিক্রিয়া সরবরাহ করে।							
আমাদের কাজের দায়িত্বগুলির প্রতি আমাদের সক্রিয় মনোভাব রয়েছে।							
সেখানে কাজ করে আমরা গর্ববোধ অনুভব করি।							
পর্যাপ্ত সময়ে আমরা আমাদের কাজে পর্যাপ্ত সহায়তা পাই না।							
আমাদের উদ্দেশ্য আমাদের সাংগঠনিক সমৃদ্ধির পাশাপাশি আমাদের সাফল্য বৃদ্ধি করা।							

আমরা আমাদের কর্মক্ষমতা বাড়াতে অন্যান্য কারখানার চাপ অনুভব করি।							
আমাদের ব্যবস্থাপনায় আমাদের ক্ষমতায়নের খুব কম ব্যবস্থা আছে।							
সেখানে কাজ করার সময় আমরা মানসিক চাপ অনুভব করি।							
আমরা আমাদের টেকসই পারফরম্যান্সের জন্য একমাত্র দায়বদ্ধ।							

পরিমাপের বিবৃতি	**দৃঢ়ভাবে অসম্মত**	**অসম্মত**	**কিছুটা অসম্মত**	**নিরপেক্ষ**	**কিছুটা সম্মতি**	**সম্মত**	**দৃঢ়ভাবে সম্মতি**
	1	2	3	4	5	6	7
পরিবেশগত সক্ষমতা							
আমাদের কারখানা সম্পদ (যেমন বিদ্যুত) ব্যবহারে দক্ষ।							
আমাদের কারখানা টেকসই কাঁচামাল ব্যবহারে লড়াই করছে।							
আমাদের কারখানার পরিচালনা বর্তমান পরিবেশগত আইনগুলির সাথে সঙ্গতিপূর্ণ নয়।							
আমরা আমাদের কারখানার বর্তমান পরিবেশ সুনামের সাথে সন্তুষ্ট।							

আমরা আমাদের কারখানার পরিবেশগত প্রভাব এবং সাধারণ মানুষের জন্য ঝুঁকি নিয়ে সন্তুষ্ট।							
আমাদের কারখানা পরিবেশগত স্থায়িত্বের ক্ষেত্রে আরও ভাল করতে পারে।							
অর্থনৈতিক পারফরম্যান্স							
আমাদের কারখানাগুলি আমাদের মালিকদের ইক্যুইটি উত্পাদন করতে একটি দুর্দান্ত অংশ ভাগ করে দেয়। টেকসই উদ্যোগ (যেমন, স্বাস্থ্যসেবা, বীমা প্রকল্প এবং সুরক্ষা কর্মসূচী) কর্মীদের মধ্যে সচেতনতার ক্ষেত্রে আমরা আমাদের ব্যবস্থাপনায় সন্তুষ্ট)							
আমাদের কারখানাটি অন্যান্য কারখানার তুলনায় উচ্চতর লাভের মার্জিন সরবরাহ করে।							
আমাদের কারখানার অনুরূপ অন্যান্য কারখানাগুলির তুলনায় বিক্রয় পরিমাণ বেশি।							
আমাদের কারখানায় আমাদের অন্যান্য কারখানার মধ্যে একটি নামী ব্র্যান্ডের নাম রয়েছে।							
আমাদের পরিচালনা আমাদের কারখানার বাজার ভাগ নিয়ে সন্তুষ্ট।							

সামাজিক পারফরম্যান্স							
আমাদের কারখানার পরিচালনা আমাদের সুস্থতার প্রতি যত্নশীল নয়।							
আমাদের কারখানার পরিচালনা শ্রমিকদের সচেতনতা এবং সুরক্ষা সুরক্ষার জন্য আমাদের ইউনিয়নের সাথে কাজ করে।							
আমরা সম্প্রদায়ে জড়িত হওয়া এবং উন্নয়নের ক্ষেত্রে আমাদের কারখানার পরিচালনায় সন্তুষ্ট।							
সামগ্রিকভাবে, আমাদের কারখানার মোট অবস্থা টেকসই উন্নয়নের পক্ষে অনুকূল।							

D. Participation information sheet

Cardiff Business School
Ysgol Busnes Caerdydd

Research Ethics

Participation Inform Sheet

This study is being conducted by Sharmin Akter Julie (JulieSA@cardiff.ac.uk), who is a PhD student under the supervision of Professor Andrew Potter (PotterAT@cardiff.ac.uk) and Dr. Ruoqi Geng (GengR@cardiff.ac.uk) in Cardiff Business School, UK.

This research project involve semi-structured interview, to explore how sustainable supply chain management (SSCM) and its' moderating forces help to generate sustainable development for the garments' employee of Bangladesh. The main purpose is to measure the perception of employees' about sustainable supply chain and identify inbound stakeholders who determine the key forces associated with the effectiveness criteria of SSCM.

Participation in this study is entirely voluntary and participants can withdraw from the study at any time without giving reason. Participants also have the right not to answer or say 'No Comment' to any questions during the session. The company's approval in this study does not oblige respondents to participate in the study. Participation will not be linked in any way with job performance, and nor will the researcher share the name of participants with the company.

The interviews will take one (1) hour to cover and be audio-recorded only when it is approved by the participants. Transcripts of the interview and research findings will be available to the participants if requested. Participants also free to ask any questions at any time during the session. If for any reason, respondents have second thought/s about his/her participation in this project, he/she is free to withdraw or discuss his/her concerns with the researcher, Sharmin Akter Julie (JulieSA@cardiff.ac.uk) or Professor Andrew Potter (PotterAT@cardiff.ac.uk).

The researcher is undertaking the independent research which will not influence or be influence by the sponsor. All information provided by the respondents held confidentially and securely, such that only the researcher can trace this information back to the respondents individually. Participants can request information and feedback about the purpose and results of the study applying directly to the researcher, Sharmin Akter Julie (JulieSA@cardiff.ac.uk). All the information will stored in accordance with the Data Protection Act, 1998.

Date:

Sharmin Akter Julie
PhD student at Cardiff Business School.
Cardiff University.
Aberconway Building, Column Road.
CF10 3EU

E. Consent form

Cardiff Business School
Ysgol Busnes Caerdydd

Research Ethics

Consent Form

I understand that this study is being conducted by Sharmin Akter Julie (JulieSA@cardiff.ac.uk), who is a PhD student under the supervision of Professor Andrew Potter (PotterAT@cardiff.ac.uk) and Dr. Ruoqi Geng (GengR@cardiff.ac.uk) in Cardiff Business School, UK. The main purpose is her research is to explore how sustainable supply chain management (SSCM) and its' moderating forces help to generate sustainable development for the garments' employee of Bangladesh. This project will involve semi-structured interview and require one (1) hour of my time.

I understand that my participation in this study is entirely voluntary and that I can withdraw from the study at any time without giving reason. I also have the right not to answer or say 'No Comment' to any questions during the session. I understand that the company's approval in this study does not oblige me to participate in the study and my participation will not be linked in any way with my job performance, and my name will not be shared with the company.

I understand that the interviews will be audio-recorded only under my approval. Transcripts of the interview and research findings will be available for me if I made request. I understand that I am free to ask any questions at any time during the session. If for any reason I have second thought/s about my participation in this project, I am free to withdraw or discuss my concerns with the researcher, Sharmin Akter Julie (JulieSA@cardiff.ac.uk) or Professor Andrew Potter (PotterAT@cardiff.ac.uk).

I understand that the researcher is undertaking the independent research which will not influence or be influence by the sponsor. The information provided by me held confidentially and securely, such that only the researcher can trace this information back to me individually. The information will be retained for up to one year and will then be deleted or destroyed. I understand that if I withdraw my consent I can ask for the information I have provided to be deleted or destroyed in accordance with the Data Protection Act, 1998.

I, _____(name) consent to participate in the study.

I, _____(name) allow my interview to be audio recorded.

Signed:

Date:

F Ethics approval

Cardiff Business School
Ysgol Busnes Caerdydd

Sharmin Julie
Cardiff Business School
Cardiff University

14 January 2020

Dear Sharmin,

Ethics Approval Reference: 1920002

Project Title: To measure employees' perception about sustainable supply chain management and its' moderating impact on financial and operational performance of Garments Industry: Insight from transitional economy.

I would like to confirm that your project has been granted ethics approval as it has met the review conditions.

Should there be a material change in the methods or circumstances of your project, you would in the first instance need to get in touch with us for re-consideration and further advice on the validity of the approval.

I wish you the best of luck on the completion of your research project.

Yours sincerely,

Electronic signature via email

Dr. Debbie Foster
Chair of the School Research Ethics Committee
Email: CARBSResearchEthics@cardiff.ac.uk