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1) Introduction

Bangladesh's ready-made garments (RMG) sector is among the most globally integrated manufacturing ecosystems in the Global South. The country is now the second-largest apparel exporter and garments (RMG) industry account for 80% share of export earnings for the country and millions of industrial employment, where most of them are women (Cajal-Grossi, Macchiavello and Noguera, 2023). The sector's success was built on scale, low conversion costs and decade long buyer relationships (Sharma, 2024). Yet, the factories supply chain is under converging pressures, such as: volatile demand, input price swings and logistics constraints, tighter buyer compliance requirements and widening policy expectations on human rights due diligence and decarbonization across the textile value chain (Economics Observatory, 2025).

In 2013, the collapse of a garments building, which killed more than 1100 garments worker, known as Rana Plaza catastrophe triggered a step-change in supply chain governance, inspection regimes and remediation in Bangladesh, led by global brands, unions, and local stakeholders (Wing, 2024). Post pandemic, the pressure to compress lead times, digitize planning and visibility, diversify sourcing and build resilience has accelerated (e.g., end to end tracking, predictive analytics and traceability to verify environmental and social claims) (Sharma, 2024). Contemporary reviews find that sustainable supply chain management (SSCM) and technology adoption positively correlate with performance outcomes (service, cost, agility), suggesting that Bangladesh's next competitiveness frontier is capability-led, not cost-only (Kumar et al., 2023).

While the industry has reduced lead times compared to decades past, the current order-to-delivery cycle remains much longer than competitors like China , partly due to continued reliance on imported fabrics causing supply delays (Abir, 2021). There is evidence of increasing digitalization (e.g. use of ERP systems, AI, and IoT) to streamline supply chains, which has improved efficiency in some firms (Habib *et al.*, 2024). However, barriers such as high capital costs, skill gaps, and legacy systems still impede full digital transformation

1.1 Research Aim:

To analyse supply chain management (SCM) practices and performance challenges in Bangladesh's garment industry within a globalized market and to identify capability bundles integration and collaboration, digital visibility and analytics, resilience routines, and sustainability practices that most improve supply-chain performance and buyer compliance.

1.2 Research Objective:

i) Evaluate the sustainable supply chain practices in the Bangladeshi RMG sector along with their impact, advantages and compliances.

- ii) Analyze the strategies for increasing the supply chain responsiveness which includes developing backward linkages, improving processes, and implementing lean or agile practices. Assess their effectiveness against international standards.
- iii) Review the digital technology that has been applied for analytics and resources planning the industry to determine the speed of transformation and coordination.
- iv) Examine how well stakeholders collaborate including manufacturers, suppliers, logistics providers, and buyers. Consider how integration and sharing information affects supply chain performance.
- v) Identify the risk management techniques for disruptions like pandemics, political instability, or sudden demand changes and evaluate how to improve.

1.3 Research Questions:

RQ1. Which supply chain management practices helped Bangladesh's RMG sector to evolve and how are they following the international requirements?

RQ2. What are the major bottlenecks that undermine responsiveness and what strategies are being used to match with the international standards?

RQ3. What interventions, challenges and practices in supply chain and risk management deliver the most robust performance?

1.4) Significance

The study will synthesise recent global evidence with Bangladesh-specific realities, translating them into a practicable improvement roadmap for RMG firms, buying houses, and policy stakeholders. The study is significant both practically and academically. It will help industry stakeholders understand what supply chain adaptations are needed for Bangladesh to retain its status as a preferred sourcing destination amid shifting global (Özkanlısoy and Bulutlar, 2023) and it will contribute to the scholarly conversation by filling a noted gap regarding emerging-market supply chain strategies in the post-quota, post-pandemic (Imran et al., 2024)

2) Literature Review

2.1 Concepts and measurement of supply-chain performance in apparel

Apparel supply chains are buyer-driven global networks in which design/branding remains at the global lead firm while manufacturing is sourced to cost-competitive locations. Performance is multi-dimensional reliability (OTIF/fill rate), responsiveness (order cycle time), agility/flexibility, cost, and asset utilization and increasingly includes sustainability and traceability indicators (Özkanlısoy and Bulutlar, 2023). The SCOR model remains the industry-standard reference to structure processes and metrics, with recent updates validating SCOR-v13-aligned scales for contemporary digital contexts (Nguyen, 2024).

2.2 Bangladesh's RMG supply chains: structure, sourcing and lead times

Bangladesh's RMG relies heavily on imported fabrics and accessories from China and other hubs, causing long materials lead times before cut make trim and binding the sector to maritime schedules and port capacities. Empirical and review work shows that high import dependence and port/inland logistics frictions drive long order to delivery cycles compared with near shore competitors (Wing, 2024). Pandemic-era studies further underline that input disruption and order cancellations cascaded through RMG, magnifying exposure to single country sources and data-poor planning (Sharma, 2024). Nonetheless, the overall trend in literature is that sustainability is moving from a niche concern to a necessary component of SCM strategy. It is expected that firms which proactively invest in green supply chain practices and social compliance will gain favor with premium buyers and be better prepared for emerging regulations (such as the EU due diligence laws) (Sharma, 2024).

2.3 Integration & collaboration, and the role of network complexity

A consistent finding is that internal integration and external collaboration (information sharing, joint planning, supplier development, CPFR/VMI) raise logistics/operational performance, often mediating the impact of strategy on performance (Dağdeviren and Erturgut, 2024). Large-sample studies in 2023–2024 show integration’s partial mediation and the importance of relational quality for operational outcomes (Dağdeviren and Erturgut, 2024).

2.4 Digital transformation: visibility, analytics, and traceability

Digital tools IoT/telematics, ERP/APS integration, advanced analytics/AI and blockchain improve end to end visibility and decision speed, enabling better forecasting, inventory control and exception handling (Ahmed et al., 2021). Reviews and cases document that digitalization raises operational excellence and resilience, with visibility as a key mechanism linking technology to performance (Stroumpoulis, Kopanaki and Chountalas, 2024). In apparel, blockchain pilots aim to verify provenance and compliance, aligning with brand and regulatory demand for traceability (EU, 2022). The Bangladeshi government and industry associations are also promoting “Industry 4.0” readiness through training programs, policy incentives, such as: tax breaks for automation equipment (Dhar, 2021). The “Technology Organization Environment” (TOE) framework is often cited in studies to explain this trajectory, such as: the technological readiness, organizational capability and external environment collectively shape how fast digital transformation proceeds (Habib et al., 2025).

2.5 Sustainability, compliance and performance after Rana Plaza

Recent evidence shows that SSCM practices environmental, social and governance combined with technology adoption, yield net performance gains (reliability, cost, customer satisfaction) (Kumar et al., 2023). As policy tightens (EU due diligence, eco-design), Bangladeshi suppliers that embed traceability and green practices are better positioned for preferred-supplier status. Besides, compliance with labor, safety, and environmental standards is a defining issue for the garment supply chain, especially in Bangladesh where past tragedies and ongoing labor concerns have drawn global attention. After the Rana Plaza collapse in 2013 and other factory fires, a consensus emerged that business-as-usual was unacceptable; global retailers, local industry, and governments initiated collaborative programs to uplift compliance (Wing, 2024). The Accord on Fire and Building Safety (driven by mostly European brands) and the Alliance for Bangladesh Worker Safety (led by North American brands) conducted extensive factory inspections and remediation, leading to improved building integrity and fire safety in thousands of factories (Wing, 2024). Bangladesh’s government and industry associations have responded by promoting compliance as a competitive strength for example, emphasizing the large number of

greencertified factories and adopting the slogan of “safe and ethical” manufacturing to attract business (Focus, 2024). Factories that invest in compliance (safe facilities, fair labor practices) tend to secure orders from higher-end clients and avoid disruptions (like strikes or accidents) that can halt production (Sharma, 2024). However, compliance costs need to be supported by the economics of the supply chain, which loops back to sourcing practices. If buyers persistently pay low prices or delay payments, suppliers may be forced to cut corners, undermining compliance efforts (Sharma, 2024) .

3) Methodology

This research will adopt a qualitative, secondary-data-based methodology to evaluate supply chain management strategies in Bangladesh’s garment industry focusing on the practices of the industries, with analyzing the available industry reports, studies and other relevant documents. The study will systematically collect and analyze existing data and literature rather than engaging in primary data collection (e.g. interviews or surveys), in line with the proposal guidelines to use only secondary data.

Research Design: The study is designed to explore and describe the current SCM strategies. It will function akin to a case study of the Bangladesh RMG supply chain, examining multiple strategic dimensions (sustainability, agility, digitalization, etc.)

For example, news on how many factories have adopted a new traceability platform, or coverage of a major buyer’s sourcing policy shift, will be useful evidence. This design tackles the complexity of the topic by focusing on the specific context of the Bangladesh garments sector and particular strategy areas, using the data from secondary sources.

Data Collection Methods: For this research, Data will be collected from different credible secondary sources, such as: peer reviewed journal articles, conference papers, industry reports, Government reports, news articles, reports from international agencies, trade publications etc. The journal articles will focus on the relevant SCM issues of Bangladesh and some contexts that are similar to the context of Bangladesh’s, such as: resilience and sustainable supply chain practices. Besides, publications from Bangladesh Garment Manufacturers and Exporters Association (BGMEA), the Bangladesh Ministry of Commerce, the Ministry of Industries will be analyzed. Reports or case studies by organizations such as the International Labour Organization’s “Better Work program”, the International Finance Corporation (IFC) etc. will be analyzed. Lastly, Bangladeshi and international news reports and articles from different credible news outlets will also be analyzed.

4) Expected Findings

- ii) The research is expected to find that the lead time reduction is a top priority for Bangladeshi manufacturers. It is anticipated that finding evidence that backward linkages have modestly improved, such as: more local sourcing of fabrics and trims than a decade ago, contributing to slight lead time improvements (Hossian, Kabir and Latiffee, 2019).
- ii) The study also expected to find the recent digital adoption in Bangladesh's garment industry. Many leading factories are likely to integrate digital systems that have demonstrable benefits: for instance, integrated ERP systems reducing inventory costs and IoT solutions improving production monitoring. The findings will probably note success stories where digital tools improved quality, lead time and traceability (Habib et al., 2024).
- iii) It is also expected that the TOE factors come into play – larger firms with more resources (organizational factor) and those under strong buyer pressure (environmental factor) are forging ahead with Industry 4.0 initiatives, while smaller firms lag behind due to cost and skill barriers (Habib et al., 2024). An anticipated finding is that external forces (e.g., big buyers insisting on digital compliance platforms, or government incentives) are effectively pushing more firms to digitize (Habib et al., 2024). Therefore, the study will likely conclude that digital transformation, although at an early stage, is a positive and accelerating trend that will continue to shape supply chain efficiency and visibility in the coming years.
- iv) The study expects to find evidence that relational buyers provide better outcomes for suppliers with higher margins and stability, whereas spot-buying practices by some brands squeeze suppliers' margins and complicate production schedules (Cajal-Grossi, Macchiavello and Noguera, 2023). Likely, data from recent research will illustrate that suppliers tied to relational contracts perform better financially than those chasing ad-hoc orders (Cajal-Grossi, Macchiavello and Noguera, 2023). The expected interpretation is that while Bangladeshi firms are trying to move up the value chain and prefer stable relationships, the prevalence of intense price competition globally means many suppliers still accept unfavorable terms.
- v) The study is likely to find that true end-to-end integration is nascent, with improvements mostly in pockets. It may highlight some examples of vertical integration, such as: large firms controlling textile production to garment manufacturing, which have yielded efficiency gains and resilience by controlling more of the chain. Also, instances of better information integration
- vi) The study may cite evidence such as increased usage of multi-sourcing strategies for key inputs or maintaining slightly higher buffer stocks for critical materials post-COVID. A possible finding is that the sector as a whole is moving toward greater resilience with collective efforts by industry bodies to develop emergency response protocols. Yet, certain structural vulnerabilities, like heavy reliance on a few markets, continue to exist (Ali, Rahman, and Frederico, 2021).

5) Limitation

First of all, it is important to acknowledge that the research will be dependent mostly on secondary sources and that might create most of the limitations. Some industry data might be proprietary or not up-to-date. For example, exact lead time statistics or detailed compliance audit results might be confidential to companies or only partially released. The study must then rely on proxies or older data. If different sources give different figures, the study will have to reconcile or range-bound these numbers, which introduces some uncertainty. There is also the risk of subjectivity in analysis inherent in qualitative research. The interpretation of documents will be made to remain objective and base conclusions on evidence, the selection of what literature to emphasize or how to interpret a mixed finding can introduce some bias.

Again, the recommendations derived might not directly apply to a different context without adjustments. Since the proposal is being completed within certain time and resource constraints, there may be limitations in the volume of sources that can be reviewed. The target of including many high-quality references will be met but inevitably some potentially valuable sources could be missed. Also, if the analysis encounters conflicting viewpoints (for example, one study praising the efficacy of a government policy and another criticizing it) the scope may not allow a full deep dive into reconciling those conflicts beyond noting them as areas for further research.

6) Timeframe

Phase	Activities	Outputs	Week(s)
1. Preliminary Research	Refining the research scope	Detailed research plan	1
2. Extensive Literature Review	Reading all the relevant literature	Solid literature review	2
3. Data collection	Collect secondary data	Transcripts, survey dataset, document corpus	3–4
4. Analysis	Descriptive stats, optional measurement checks	Themes; tables/figures	5–6
5. Drafting	Write results, discussion, implications, limitations	Full draft	7–8
6. Revision & submission	Supervisor feedback, proofreading, formatting	Final dissertation	9

7) Conclusion

In conclusion, this proposal evaluates the supply chain management strategies of the Bangladeshi RMG industry, while covering different aspects. Besides, it also shows that how Bangladesh's RMG sector is still facing different major issues like long lead time, despite notable progress in sustainability. Moreover, the industry is still facing issues on partial supply chain integration, compliance enforcement, while a better resilience is needed. Ultimately, the study will focus on helping both academic literature and practical discussions on Bangladesh's RMG sector thoroughly. The study will depict a garment supply chain in Bangladesh that is evolving. An ongoing improvement narrative is expected, showcasing a greater adoption of sustainable practices which will be paired with areas that need further development. The successful firms will be highlighted that significantly reduced lead times and effectively managed challenges during the pandemic by following specific strategies. Completing this research will fulfill an academic requirement and serve as a reference for stakeholders interested in managing supply chains sustainably and efficiently in the garment sector and beyond.

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