An Analysis of the Supply Chain Management of Global Freight Links Ltd.

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Letter of Transmittal

06 April 2025

Professor Dr. Mohammed Masum Iqbal
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Subject: Submission of Thesis Paper

Dear Sir,

With great pleasure, I am submitting my thesis on **"An Analysis of the Supply Chain Management of Global Freight Links Ltd"**, which was assigned to me as part of my MBA program. I have completed this research in accordance with the guidance and suggestions you have provided me throughout the course of my research. I have tried to devote my best effort and conducted extensive literature reviews to find out the relevant materials. I sincerely hope and believe that my report will secure your approval and serve its purpose. During the process of preparation due to various constraints there may be some mistakes. However, I apologize for all those and beg your kind consideration in this regard.

I sincerely appreciate your constant support and guidance, which has been instrumental in the successful completion of this paper. I hope that the final version meets your expectations. Thank you for your time and consideration.

Sincerely,

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Approval Certificate

This is to certify that the thesis entitled *"An Analysis of the Supply Chain Management of Global Freight Links Ltd"* has been prepared by Rahat Ahmed, ID # 232-14-042, as a requirement for the completion of the MBA Program under the Department of Business Administration, Faculty of Business & Entrepreneurship, at Daffodil International University, has been reviewed and approved.

The thesis is recommended for submission and acceptance.

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Acknowledgement

First and foremost, I would like to express my heartfelt gratitude to Almighty Allah for granting me the strength, patience, and determination to successfully complete this thesis within the scheduled time. Without His blessings, this achievement would not have been possible.

I extend my sincere appreciation to my academic supervisor, **Professor Dr. Mohammed Masum Iqbal**, Department of Business Administration, Faculty of Business and Entrepreneurship, Daffodil International University, for their continuous guidance, valuable feedback, and encouragement throughout the research process. Their insightful advice and expertise have been instrumental in shaping this thesis effectively.

I would also like to express my sincere appreciation to my colleague, Abul Hasnat, for his invaluable support in providing me with practical insights during my research. His expertise and generosity in sharing crucial information have significantly enriched the depth and quality of this study.

Additionally, I extend my heartfelt gratitude to all the faculty members, my academic advisors, mentors of Daffodil International University, and all those who have contributed directly or indirectly to my research through their encouragement, guidance, and constructive feedback.

I am immensely thankful to my family and friends for their unwavering support and motivation, which kept me focused and determined to complete this thesis and course as well.

Abstract

This research explores the supply chain management (SCM) practices at Global Freight Links Ltd. while investigating Bangladesh's supply chain problems that affect the Ready-Made Garments (RMG) sector. The major barriers to SCM success stem from poor infrastructure together with political instability and disturbances from both natural disasters and economic changes. The qualitative investigation reveals high logistics expenses combined with Chittagong Port congestion and suboptimal transportation systems as well as a shortage of qualified staff among the most critical weaknesses. The economic risks are increasing because global buyers are changing their sourcing locations because of supply chain doubts. The existing SCM issues in Bangladesh have solutions that can be achieved through digital infrastructure implementation with policy modernization and logistics system updates. The recommendations prioritize investments in port facilities together with AI applications for market analysis as well as training of labor forces and better business partnerships between producers and international customers to achieve efficient pricing, sustainable operations and economic sustainability. The research aims to provide valuable findings that benefit those invested in Bangladesh garment chain sustainability along with policy creators and scientific scholars monitoring industry resilience.

Keyword: Supply Chain Management, SCM, Logistics, Bangladesh Read-Made Garments, RMG, Sustainable SCM

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Chapter I - Introduction

1.1 Introduction

The garment industry of Bangladesh functions as the economic backbone of the nation because it propels economic growth and leads global trade activities. The RMG sector remains competitive because its supply chain management system helps deliver cost-effective production on time and supports long-term success. Ready-made garments (RMG) from Bangladesh rank as the second-largest exported products worldwide with a share of 84.58% of total exports that reached $46.99 billion in FY2022-23 (Bangladesh Labour Foundation, 2024).

Raw material sourcing stands as the primary element for successful Supply Chain Management in the RMG industry. Bangladesh obtains most of its fabric materials together with yarns and dyes through imports from China India and Pakistan. A properly managed supply chain system allows manufacturers to receive materials without delays thus reducing their need for expensive emergency purchases. The fashion industry fights multiple substantial obstacles which endanger its long-term viability and international market standing. The main barriers to industry include inefficient Supply Chain Management systems as well as poor infrastructure and environmental and social issues. The stability of the industry remains affected by natural disasters and geopolitical instabilities and pandemics since the COVID-19 pandemic led to $3 billion revenue loss in 2020 (Hossain & Alam, 2022). The Bangladesh garment industry needs to adopt sustainable supply chain management as an absolute business requirement. The implementation of sustainable SCM practices brings simultaneous economic benefits and environmental advantages and external shock resistance. Organizations depend on implementing globally established sustainability criteria to preserve market entry into regions such as Europe and North America that enforce strict environmental and social standards.

This assessment investigates methods to enhance the sustainability and operational efficiency of Bangladesh garment industry Supply Chain Management systems through the resolution of pollution issues along with social problems and inadequate infrastructure. Stakeholders will benefit from research findings because the work conducts practice evaluation and inefficiency detection. The thesis aims to contribute to Sustainable Supply Chain Management research through its presentation of strategies for creating resilient efficient global competitive garment operations in Bangladesh.

1.2 Background of the study

The garment industry of Bangladesh serves as a main force in global apparel production which drives both economic advancement and poverty reduction efforts in the country. From the 1980s until today the sector demonstrated rapid growth which made Bangladesh achieve the position of second-largest exporter of ready-made garments (RMG). Numerous operational deficiencies along with system weaknesses diminish the achievements of Bangladesh's supply chain processes. The garment industry depends on advanced distribution systems that combine multiple network components starting from transportation through warehousing and customs processing and ending in delivery. Key challenges include:

- **Port Congestion:** The majority trade of Bangladesh passes through Chittagong Port yet the port deals with extreme congestion (Suman, 2024). Shipping containers require an average of 11 days for clearance procedures even though Vietnam and India manage this process in only 2–3 days.
- **Inadequate Infrastructure:** The insufficient infrastructure network affects transit times negatively because poor road conditions combine with limited rail connectivity to create higher shipping expenses. The duration for transporting goods between Dhaka and Chittagong amounts to 10–12 hours when the actual distance is only 260 kilometers yet exceeds established global standards. (Haroon, 2024)
- **High Logistics Costs:** The total product cost in Bangladesh includes 15%–20% for logistics expenses which exceeds the 8%–10% range observed in developed economies (Dhaka Tribune, 2024). The industry faces lower competitiveness in price-sensitive global markets because of these inefficient operations.

External incidents such as natural disasters along with geopolitical instability create additional challenges to supply chain vulnerability. Bangladesh holds a position among the countries most threatened by disasters worldwide while floods maintain a regular pattern of disruption to transportation systems. The COVID-19 pandemic illustrated the fragility of global supply chains as shipment delays and canceled orders led to a $3 billion loss in revenue for garment production in 2020. (Hossain & Alam, 2022)

Bangladesh has multiple possibilities to enhance both the sustainability and resilience of its supply chain operations. Strategic investments in infrastructure along with digital technology adoption and stakeholder collaboration will revolutionize the logistics system. The research explores the diverse challenges facing Bangladeshi garment supply chain logistics to show why a sustainable reconstruction becomes necessary. This study assesses operational inefficiencies

and external disturbances while conducting benchmarking of international leading practices to establish viable recommendations that boost the industry's sustainability performance and market competitiveness.

1.3 Objectives of the Study

The purpose of this study is to understand supply chain management for integrating sustainability in the garment industry of Bangladesh. Specific objectives include:

i. To illustrate the Supply Chain Management of Global Freight Links Ltd.
ii. To identify the problem related to SCM of Global Freight Links Ltd.
iii. To make some recommendations for integrating sustainability.

1.4 Scope of the Study

This study explores supply chain managements aspects within the Bangladesh garment industry. An investigation into social and infrastructure obstacles which affect both supply chain performance and sustainability will be conducted. Stakeholder perspectives from manufacturers along with logistics providers and policymakers and NGOs will be incorporated to achieve comprehensive insights about challenges and solutions throughout this study.

Chapter II - Literature Review

2.1 Supply Chain Management

Supply Chain Management (SCM) functions as the core foundation of international trading because it unites multiple intricate systems which transport products and store resources while overseeing inventory management. The essential aspect enables productive movement of products and services from manufacturers to consumers by passing through multiple intermediaries between them (GeeksforGeeks, 2024). The modern business environment demands stronger than ever understanding and optimization of supply chain logistics systems. The production industry experiences escalating expectations from companies to speed up delivery while lowering costs and enhancing their supply chain transparency. The numerous entities that create a supply chain create exceptionally complex procedures to deliver products and services to customers (Islam, Monjur, & Akon, 2023).

Businesses now use Sustainable Supply Chain Management (SSCM) as an innovative solution which combines responsible environmental and social practices with supply chain management systems. SSCM integrates practices that support environmental protection with social welfare improvement and economic sustainability across all phases of product and service life cycles. The growing demand for sustainable products along with climate change emergencies along with regulatory requirements has turned SSCM into an essential priority for companies all around the world (Khatun, 2024). Organizations that implement sustainable transportation methodologies along with warehouse energy conservation strategies and waste reduction initiatives and ethical sourcing procedures will fulfil market requirements and strengthen their ecological impact and profitability.

2.2 Overview of Global Fright Links Ltd in SCM

Global Freight Links BD operates as a leading Bangladeshi company since 1995 by providing international freight forwarding services and shipping logistics along with distribution for Ready Made Garments (RMG) industry of Bangladesh. The company expanded its operations throughout the years to achieve its position as a major player in transportation where it delivers essential supply chain management services.

Global Freight Links Ltd. delivers its services through ocean freight and land freight as well as its primary specialization in air freight. The company delivers break bulk and consolidation services together with door-to-door transportation and handling of garments on hanger (GOH)

products. Their sea freight services include both import and export capabilities that deliver shipments through effective transportation across worldwide maritime routes. The land freight services provided by this company maintain seamless transportation throughout Bangladesh territory.

The operations of this company heavily depend on their warehousing capabilities and their custom clearance procedures. The company operates modern storage facilities which enable safe distribution through efficient solutions. Through their customs brokerage expertise they help businesses comply with regulations which enable seamless border movements of their goods. Project management and heavy and dangerous goods transport operations are among the specialized services of their organization.

As an essential supply chain management provider Global Freight Links Ltd. unify all logistics elements that handle material acquisition through product delivery to customers. The services provided optimize costs and delivery times and improve overall customer satisfaction. The company delivers end-to-end supply chain solutions which enable businesses to optimize operations and stay competitive in the market space.

2.3 Factors Affecting Supply Chain Vulnerability

Multiple challenges confront Bangladesh at present which has considerably affected the operations of its supply chains. Multiple issues including political instability and logistical disruptions together with energy crises and global economic dependencies cause these weaknesses (Shashua, 2024). These factors have triggered a series of negative impacts throughout all sectors but they specifically affect the ready-made garment (RMG) industry which drives Bangladesh's economic growth.

The main existing problem in Bangladesh supply chains stems from political turmoil combined with civil unrest. The violent demonstrations that compelled Prime Minister Sheikh Hasina to resign generated both leadership instability and increased business uncertainty throughout Bangladesh (Adegeest, 2024). Public demonstrations combined with curfews together with internet shutdowns have led to extensive disruptions of regular business functions throughout the nation. The RMG industry stands as the biggest victim of this situation since it provides 18% of Bangladesh's GDP while producing 86% of its export revenue. An uncertain state forces numerous production facilities to suspend operations because they face safety uncertainties and operational problems stemming from widespread demonstrations. The international apparel

supply chain suffers major operational disruptions because it depends on Bangladeshi export volumes (METRO GLOBAL, 2024).

The international trade dependency on Chittagong Port has caused supply chain vulnerabilities because of the port's bottlenecks that service more than 90% of Bangladesh's external trade. Current berth delays at the port cause ships to stay in the Bay of Bengal beyond one week resulting in severe port congestion. Port container storage yards have reached excessive capacity levels of 80% while exceeding their functional range which causes cargo operations to become less efficient. The customs clearance process has become significantly slower following periods of unrest because they experienced an 85% reduction in clearance operations. The rail network linking the port with continental destinations suspended its operations for security reasons thereby creating additional delays for shipments. (Illidge, 2024)

Exporters use airfreight as a substitute for disrupted sea freight, but the method presents new operational difficulties for them. The dramatic increase in airfreight rates reaches 20% which creates costly difficulties for exporters needing transportation. The Dhaka Airport holds approximately 3,000 tons of undelivered cargo because of its restricted capacity and scarce freighter aircraft availability. The maximum daily capacity of passenger aircraft stands at 600–700 tons but remains inadequate to serve the exporter demand that strives to execute foreign orders. (Illidge, 2024)

The energy crisis in Bangladesh acted as an essential factor that damaged supply chain operations. Industrial manufacturing throughout key textile and clothing production sectors has stopped entirely due to an acute gas supply problem. The intense gas shortage drives up manufacturing expenses for domestic as well as export products thereby leading to elevated prices for local consumers and diminished overseas sales as manufacturing slows down. The present government supply of 2,500 million cubic feet of gas per day (mmcfd) remains at its lowest level since April 2020 while demand currently reaches 3,800 mmcfd. Due to the gas crisis most of the textile mills operating in Savar Ashulia Gazipur Maona and Narsingdi are functioning at 30 to 40 percent capacity because they are gas-intensive facilities. The acute gas crisis has harmed the textile and garment sectors of Bangladesh which export 85 percent of the country's exports while creating millions of jobs for poor people. (Mirdha & Chakma, 2024)

The economic stability of Bangladesh constantly faces risks due to its substantial export revenue from clothing products which total $47 billion annually. International buyers who want to maintain supply chain reliability are adopting a sourcing approach which adds one additional country beyond Bangladesh such as India or Vietnam to their supply chain network. The time

spent waiting at ports and airports leads exporters to pay demurrage fees alongside their existing logistical problems. (FIBRE2FASHION, 2024)

Political instability together port and airport delays together with ongoing power problems and internet service interruptions alongside global supply chain connections create major supply chain challenges for Bangladesh today. The factors challenge both domestic industries in Bangladesh and present major difficulties to global companies that depend on Bangladeshi exports.

2.4 Infrastructure and SCM: A Vital Interplay

The essential base of every economic system function as an essential component for efficient goods and service transportation, especially in supply chain management. The physical and digital systems along with facilities and networks constitute infrastructure which enables goods transportation and storage and management from origin to destination. (BEEONTRADE, 2023)

2.4.1 *Physical Infrastructure in SCM*

Physical infrastructure includes all concrete assets which constitute transportation networks such as roads and railways and ports and airports in addition to storage facilities like warehouses and distribution centers with utility systems that enable logistics operations. The components serve as fundamental elements that guarantee uninterrupted product movement between different areas.

- **Transportation Infrastructure:** The core of logistics depends on transportation networks as they allow suppliers to link with manufacturers and distributors and customers through a connected system. Timely delivery of goods depends on efficient operation of highways together with railroads and ports and airports. For instance:
  - The worldwide distribution of goods is primarily conducted through seaports because they move approximately 80% of all merchandise by volume that passes through international borders.
  - The adoption of superior road quality systems delivers shorter transportation durations for both national and international freight truck operations.
  - The transportation method through railways delivers economical bulk delivery advantages at extensive distances.
  - Improper transportation infrastructure development at key locations such as ports and roads create traffic jams that increases delivery time and expense.

- **Storage Infrastructure:** The smooth operation of inventory management absolutely depends on warehouses plus distribution centers.
    - Businesses that use warehouses benefit by maintaining product inventory near consumer bases or industrial sites.
    - By implementing modern warehouse automation technologies such as robotics operators can reduce labor expenses while achieving higher order fulfilment precision and efficiency. (Gordon, 2023)
    - The design quality of storage facilities alongside insufficient capacity leads to inventory mismanagement and spoilage problems mainly affecting perishable goods.

2.4.2 *Digital Infrastructure in SCM*

Digital infrastructure consists of software systems together with communication technologies which allow supply chains to track and exchange data in real time for making immediate decisions.

Electronic Data Interchange (EDI): Electronic Data Interchange (EDI) facilitates the automation of purchasing orders and invoicing among enterprise allies through its system. The automation cuts down human mistakes while speeding up operational activities. Development of Electronic Data Interchange (EDI) software has reached a market value of USD 1.88 billion worldwide during 2023. GDAX data shows the global EDI industry will experience 10.5% annual growth until 2025 when it reaches $2.1 billion from its current $1.2 billion position (BEEONTRADE, 2023)

Tracking Systems: The supply chain receives constant shipment visibility through the implementation of RFID (Radio Frequency Identification) tracking systems. GPS systems implemented in vehicles enable users to check delivery path details and estimate how long it will take to arrive.

Big Data Analytics: Organizations use Big Data Analytics' sophisticated analytical instruments to enhance delivery routes while forecasting consumer needs and implementing early guidance for risk management. Predictive analytics serves as an example of how it can detect upcoming delivery schedule disruptions by recognizing weather events among other possible disturbances.

Chapter III - Methodology

3.1 Research Approach

The research design for this study relies mainly on qualitative methods. This research approach focuses on detailed evaluation of secondary information and industrial insights to study logistics operations in the garment supply chain.

3.2 Data Sources

The study draws its information primarily from secondary sources found throughout different online repositories. This study utilizes research data from academic publications, case analysis of the garment sector and government policies and industry reports that focus on Supply Chain Management within the RMG industry related to Global Freight Links Ltd. Secondary data bases the research in existing knowledge and supports cross-context analysis.

In addition to secondary data, qualitative insights will be obtained directly from Global Freight Links Ltd., a company specializing in supply chain logistics operations within the garment supply chain. The research provides detailed information about supply chain logistics management and freight forwarding operations combined with customs clearance practices with real-world application of these processes. The collaboration with Global Freight Links Ltd. enables researchers to access concrete details which enrich the findings from secondary research materials.

3.3 Research Limitations

The use of secondary data may limit the precision and the coverage of the study. There is limited availability or restricted access to datasets in the public domain for obtaining up to date information on efficiency and sustainability indicators for the logistics system. Additionally, GLOBAL FREIGHT LINKS LTD. provides insight into the clothing industry, which is still valuable but not necessarily generalizable to all clothing firms because of the differences in company specific practices and operational strategies. In order to reduce bias, the study will use primarily publicly available data and industry wide information.

3.4 Limitation and Future Work

The study faces limitations from using secondary data because it restricts the depth of possible insights. The research findings from GLOBAL FREIGHT LINKS LTD cannot be directly applied throughout the clothing sector due to the unique practices and operational strategies among each company. Competitive concerns lead firms to avoid revealing comprehensive information about their supply chain operations as well as sustainability practices. Future research needs to conduct industry surveys and case studies to collect primary data because it will enhance understanding of actual logistics challenges faced by the industry. Future research should explore how digital transformation alongside AI-driven logistics solutions affect Bangladesh's supply chain efficiency levels.

Chapter IV - Findings and Analysis

4.1 Current State of Supply Chain Management

The supply chain logistics sector in Bangladesh combines both notable advancement with ongoing difficulties. The industry advances rapidly because of expanding exports and domestic consumption together with government infrastructure development but multiple obstacles persist. The World Bank's Logistics Performance Index (LPI) shows Bangladesh has made some progress in logistics performance yet multiple critical obstacles continue to affect the sector.

- **Market Size and Growth:** The logistics sector of Bangladesh keeps expanding due to three main drivers including export growth alongside rising domestic consumption together with government-led infrastructure development.

Year	Exports of RMG (Million USD)	Total Export of Bangladesh (Million USD)	% of RMG to Total Export
2020-21	31456.73	38758.31	81.16
2021-22	42613.15	52082.66	81.82
2022-23	38142.10	46430.71	82.15
2023-24	36151.31	44469.74	81.29

Table 4.1 Comparative Statement on Export of RMG & Total Export of Bangladesh (BGMEA, 2024)

- **Raising Cost and Delays:** Logistics expenses in Bangladesh stand higher than those of neighboring countries thus reducing business competitiveness. Bangladesh export rates for airfreight have increased by 20% because of rising shipping demand that led to airport cargo congestion in Dhaka. Businesses face substantial cost challenges because they must juggle a backlog through limited airfreight capacity which prevents exports from being shipped. The current method of transporting cargo by passenger planes results in an average daily total of 600 to 700 tons but this strategy worsens delivery delays (METRO GLOBAL, 2024).
- **Political Instabilities:** The country's political situation has deteriorated after Prime Minister Sheikh Hasina stepped down and anti-government protests started causing extensive delays within the logistics sector. The worldwide record for vessel berthing delays presently exists at Chittagong port where this facility processes more than 90% of

Bangladesh's international trade cargo. During early August 2024 approximately fifty ships remained outside Chittagong port because of demonstrations together with curfew restrictions and internet outages which forced ships to wait at the docks for seven days or more. The import container demurrage costs have skyrocketed because the port yard space occupies 80% of its capacity which exceeds the normal threshold of 60% (METRO GLOBAL, 2024).

- **Operational Challenges:** The unrest has caused operational challenges through multiple effects including public transport shutdowns and curfews that block goods transportation. Manufacturing operations have discontinued which creates supply chain blockages and breaks down communication systems within logistics systems (Conqueror Freight Network, 2024). The disruption of rail transport adds more complexity to imported product shipment and temporary closures of cross-border links with neighboring countries remain in effect (METRO GLOBAL, 2024).
- **Customs and Regulatory Process:** Customs operations have benefited from the implementation of ASYCUDA World which represents a customs automation system. The regulatory environment in Bangladesh shows inefficiencies which result in extended delays during import and export procedures.
- **Infrastructure and Long-term Growth:** The recent infrastructure investments in Bangladesh have failed to eliminate the underlying problems affecting its logistics sector efficiency. The logistics industry maintains a value of $1.89 billion during 2024 while dealing with elevated costs for logistics services and extended customs processing times. The World Bank’s Logistics Performance Index shows Bangladesh holds a low position because the country needs more improvements to reach global market competitiveness (Saha, Shakhawat, Hoque, & Dip, 2024).
- **Technology Adoption:** Bangladesh advances its digital transformation by implementing online tracking systems alongside data analytics to boost supply chain visibility. The adoption rate of technology remains lower than international benchmarks at present. The implementation of contemporary logistics technologies would lead to increased operational performance together with better visibility and tracking capabilities.
- **Skilled Workforce:** The country possesses numerous workers but requires better trained personnel to support logistics operations and supply chain management activities. The implementation of training programs and logistics expertise advancement will create solutions to reduce supply chain delays. According to Bangladesh Institute of Development Studies (BIDS), skill shortage of more than 60% exists within the RMG sector making it the second worst among all industries (The Business Post, 2023).

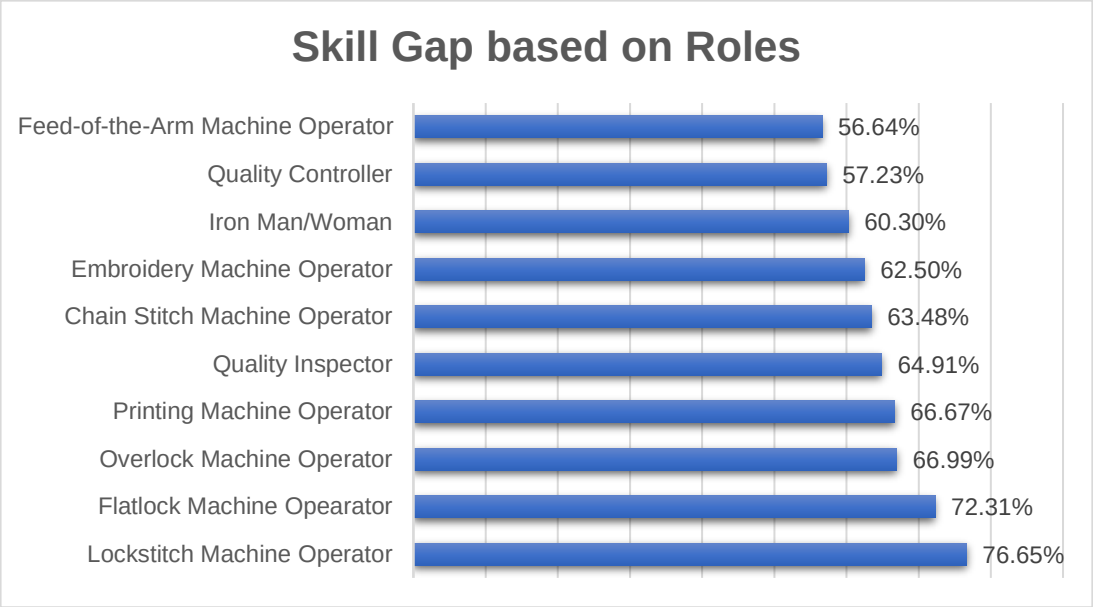

Figure 4.1 Skill Gap, in %, based on the role of RMG workers (LightCastle Analytics Wing, 2023)

The SCM sector of Bangladesh needs multiple essential alterations to boost performance. The government must establish infrastructure development as its top priority because it leads to enhanced connectivity and lowers transportation expenses. The use of contemporary technological systems enhances both operational efficiency as well as visibility and tracking systems. Educational training investments are important for developing professional logistics personnel. The removal of complex regulations together with streamlined bureaucratic procedures creates an environment that simplifies business operations thus making it attractive to investors. The development of logistics infrastructure and services through private sector participation allows both parties to use their expertise and investment benefits.

The international marketplace is growing more competitive because India along with Vietnam continues to develop their logistics networks. Delayed infrastructure advancement will prevent Bangladesh from drawing in foreign trade and investment opportunities. Environmental sustainability stands as a crucial problem since worldwide pressure requires logistics sectors to embrace eco-friendly standards. The nation requires readiness to face expected geopolitical disturbances affecting its operations. The fast-growing industrialization along with urbanization threatens to overload current infrastructure thus causing additional congestion problems. Rising logistics service demand actively tests existing infrastructure and resources because of Bangladesh's economic growth and expanding trade activities. digitization in the logistics field introduces a new supply chain vulnerability through cyberattacks which requires organizations to implement strong cybersecurity defense systems.

4.2 Social Challenges of Supply Chain Management in RMG sector

The Ready-Made Garments (RMG) supply chain operating in Bangladesh faces multiple social problems that endanger both its future development and operational sustainability. The following section details these social challenges with full breakdown:

Labour Rights Issues: Workers in the Ready-Made Garment (RMG) industry encounter multiple problems which affect their quality of life and their ability to support themselves. The sector maintains its status as the major employer but suffers from poor workplace environments which forces workers to accept wages unable to cover basic necessities thus preventing their ability to support themselves or their dependents. The lack of rest breaks and fair overtime payment during long work shifts forces workers into physical and mental exhaustion. The removal of child labour from main manufacturing sites has improved but subsidiary factories occasionally employ underage workers which shows that total child labour elimination requires additional work. The supply chain of RMG experiences substantial social problems because labour rights violations continue to persist which demands ongoing reform and better worker protection policies.

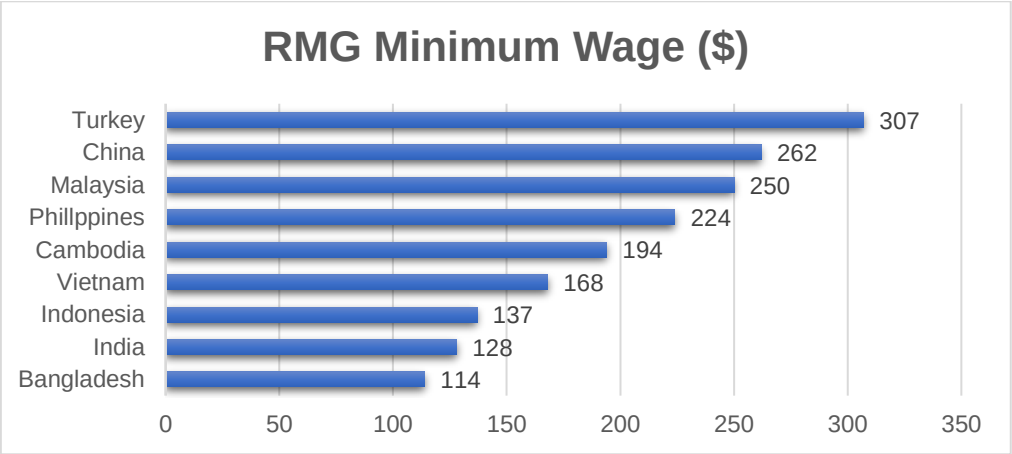

Figure 4.2 Minimum Wages for RMG Workers (LightCastle Analytics Wing, 2023)

Worker Safety Concerns: Following the Rana Plaza collapse of 2013 safety conditions for workers remain an essential problem that continues to burden the industry (Shashua, 2024). The RMG sector faces major safety problems in its workplace due to factories not following international safety protocols which leads to facility flaws and limited exit paths and hazardous crowd density in production zones. Workers encounter major health threats from dangerous materials and machinery at their workplace because they lack proper protective gear and insufficient safety training. The safety monitoring program of the Accord on Fire and Building Safety has brought overall improvements to the industry yet small subcontractors remain a

critical oversight area because compliance checks are often inadequate which puts workers at risk of unsafe workplace conditions.

Gender Inequality: The RMG sector of Bangladesh experiences ongoing gender discrimination which affects all female workers who represent most of the workforce. Women workers across Bangladesh earn lesser pay than men do when performing the same work duties which results in substantial salary differences. The workforce of female employees endures constant verbal mistreatment and sexual harassment as well as discriminatory behavior in and outside their working environment. Women form the majority of the workforce, yet their professional progress is restricted because few holds managerial roles thus reflecting entrenched gender discrimination across the occupational structure.

Political Instability and Social Unrest: Political upheaval along with public disturbances create additional unpredictability to the RMG supply chain operations.

- Protests Impacting Production: Student protests together with political demonstrations interrupt both factory operations and logistics networks. The combination of an ongoing energy crisis with rising business costs and delayed shipments has led apparel exporters to handle their factories at substantially reduced capacity levels which results in a 25-40% decrease in orders received. (SUNTECH Insights, 2024)
- Global Buyer Hesitation: The global sourcing market shows reluctance due to political instability which causes buyers to slow their orders and seek different supply sources. The majority of manufacturers avoid accepting such orders because global buyers are offering price reductions of up to 20% even though production costs have risen by 20-33%. (SUNTECH Insights, 2024)

Lack of Social Protections: The majority of RMG workers experience major difficulties because employers provide insufficient essential social protections through temporary employment contracts that do not guarantee ongoing work opportunities. The current situation deteriorates because manufacturing facilities provide inadequate healthcare centers together with insufficient insurance that leaves employees without necessary medical assistance and long-term protection benefits.

Exploitation by Global Buyers: Global market participants force Bangladeshi suppliers to deliver fast high-quality products at minimal prices through excessive pressure. The intense manufacturer pricing competition forces them to cut investments in worker safety measures

The World Bank's Logistics Performance Index 2023 ranked Bangladesh in the 88th spot out of 139 countries thus revealing major issues in the business-supplementing sector (Dhaka Tribune, 2024). Business owners and economists identify complex customs procedures as the main business development barrier.

4.3 Poor Infrastructure Cripples Supply Chain Management

Any supply chain functions through physical and digital systems which include transportation networks together with storage facilities as well as communication platforms and management software. The poor quality or wrong design of infrastructure systems generates production bottlenecks throughout the entire supply chain operation. The weak infrastructure creates several problems that result in greater expenses and prolonged delivery times alongside dissatisfied customers.

Transportation Bottlenecks: All transportation infrastructure elements including roads, highways, railways, ports and airports function as essential components for goods movement from starting points to ending locations. The insufficient maintenance of transport infrastructure together with inadequate infrastructure creates major delivery delays and breaks supply chains.

The combination of limited road capacity with poor maintenance standards and heavy traffic congestion causes regular delivery delays at both ports and roads because outdated equipment and limited docking areas create additional unloading time. The delivery routes remain inefficient because inadequate rail networks lack proper transportation connections between important regions. The bottlenecks in infrastructure create multiple problems for supply chain reliability which extends transit times thus reducing the efficiency of goods delivery operations.

Inefficient Warehousing and Storage Facilities: Warehouses together with distribution centers serve as fundamental elements for inventory management systems. The use of poorly designed storage facilities in the wrong locations results in the following negative effects:

- The disorganization in layouts creates longer handling periods.
- The inefficient utilization of space leads to higher inventory carrying expenses.
- The inability to quickly locate products led to delays in order fulfillment.

For example, the absence of modern inventory tracking systems such as RFID (Radio Frequency Identification) in a warehouse generates stock mismanagement that causes both overstocking and stockouts.

Communication Breakdowns: The digital infrastructure for communication stands essential for managing supply chain coordination because it enables seamless operational activity between partners. Companies which lack Electronic Data Interchange (EDI) and Transportation Management Systems (TMS) experience three major consequences:

- Errors in data exchange between partners.
- Delays in decision-making due to lack of real-time information.
- Miscommunication between departments such as procurement, logistics, and sales.

The absence of proper coordination creates workflow problems that reduce operational effectiveness.

Increased Transportation Costs: The high expenses related to transportation stem directly from inadequate infrastructure which results in the following consequences:

- Costly fuel consumption occurs because of road deterioration and traffic jams.
- The expense for detouring shipments through inaccessible areas represents a new cost to the company.
- The poor state of the roads creates additional vehicle maintenance costs.

Elevated Inventory Costs: Lacking efficiency in warehouses drives up inventory costs since businesses need to maintain increased safety stocks as protection against delays stemming from poor logistics systems. The capital remains locked up because of this situation and it could fund growth projects.

Penalties and Losses Due to Delays: Customers may impose penalty fees and business deals get missed when delivery delays occur. Retailers who use just-in-time inventory systems become especially at risk because suppliers fail to deliver on time due to problems with their infrastructure.

Reduced Competitiveness: The higher operational expenses faced by businesses located in infrastructure-deficient areas challenge their ability to compete with better-equipped rivals in global markets through pricing and service quality standards. Vietnam along with India and Cambodia and Indonesia together with emerging nations like Ethiopia gain market advantages through their investments in strategic infrastructure and beneficial trade agreements and political stability and low costs and global standards compliance.

4.4 Impact of External Disruption

Bangladesh stands as the world's second-biggest clothing exporter after China so its manufacturing problems affect supply chain operations around the globe. Several international fashion brands and retailers now face frequent shipping delays and unmet orders which compel them to revise their supply chain sourcing operations. Industry experts predict the acceleration of business plans to shift their sourcing away from Bangladesh which will create opportunities for countries like Vietnam and India as well as Indonesia and Cambodia (Adegeest, 2024). The RMG sector disruptions create tensions between Bangladesh and its principal trading nations that operate in Europe and North America. Several external factors triggered massive disruptions in the supply chain operations throughout the RMG industry in Bangladesh.

The gas crisis in Bangladesh since June 2024 has reduced factory production by more than 30% causing international buyers like H&M and Zara to miss their delivery deadlines. (The Business Standard, 2024). The current unrest has made existing labor challenges more severe throughout Bangladesh's ready-made garment sector where millions of workers are employed. Long-term interruptions can result in massive workforce reductions and economic difficulties that produce further social disruptions. The worldwide fashion industry constantly monitors recent developments in Bangladesh throughout the events. Major brands and retailers may decide to rethink their sourcing procedures because international supply chains demonstrate their weakness as vulnerable points.

The political turmoil following Sheikh Hasina's departure from power led widespread factory closures across the country because of political unrest. The unstable political situation created doubts among investors and disrupted vital trade agreements Bangladesh had with its primary business partners. International importing companies now face increased risk in their Bangladesh connections because they show reluctance to make their full purchases through the country. Internal problems in Bangladesh have given India an opportunity to establish itself as an alternative site for apparel manufacturing operations. Indian textile exports are expanding quickly because the nation benefits from better infrastructure and encounters fewer trade disruptions together with government backing. The current market shifts threaten to diminish Bangladesh's position as the world's leading apparel export market. Supply chain logistics experiences major obstacles from external disturbances which negatively affect operational effectiveness and expenses and harms customer satisfaction levels.

4.5 Upstream and Downstream Challenges for Global Fright Links Ltd

The materials and operational flow through supply chains move in an "upstream" to "downstream" direction from source materials to final delivery of products. The Ready-Made Garment (RMG) sector of Bangladesh relies heavily on these operational principles for analyzing its production processes.

4.5.1 Upstream Supply Chain

All operations involved in getting raw materials and production inputs and procurement to manufacturers are encompassed within the upstream supply chain.

Key Activities:

- **Raw Material Procurement**: The procurement of fabrics along with yarn and buttons and zippers comes primarily from China India and Vietnam because Bangladesh lacks local textile production facilities.

- **Supplier Relationships**: The company establishes partnerships with suppliers for managing product material delivery by conducting complicated supply chain negotiations and handling logistics operations.

- **Import Logistics**: The company manages customs procedures and shipping services together with warehousing duties for imported materials because these components represent about 80% of all RMG inputs.

- **Compliance & Quality Assurance**: Ensuring quality and sustainability standards in raw materials.

Challenges:

- **Dependency on Imports**: The high level of imported raw materials leads to significant market price instability and disrupted supply chains (e.g. COVID-19 pandemic).

- **Long Lead Times**: The import process of raw materials into Bangladesh requires 90–120 days whereas other countries like China and India typically need 40–70 days which extends the start date of production.

- **Infrastructure Bottlenecks**: Weak port efficiency created by bureaucratic customs processes together with poor infrastructure networks result in additional delivery delays.

4.5.2 Downstream Supply Chain

The downstream supply chain encompasses all activities starting from finished goods production that led to distribution through retail and final consumer delivery.

Key Activities:

- **Manufacturing**: The manufacturing sector employs workers to perform activities of cutting, stitching and factory assembly operations.

- **Quality Control**: Manufacturers need to meet quality control requirements established by international standards including ISO and WRAP to fulfill the demands of retailers such as H&M and Zara.

- **Export Logistics**: The company requires export logistics support from freight forwarders for complying with export documentation while ensuring tight delivery timelines.

Challenges:

- **Delivery Delays**: Production and shipment delays occur because of political disturbances and electricity/gas supply limitations and transportation strikes.

- **Cost Pressures**: The increasing labor expenses and Cambodian and Vietnamese factory competition push factories to reduce their profit margins while maintaining high quality standards.

- **Compliance Demands**: The requirement for ethical workers and environmental certifications from buyers leads to growing administrative needs in the market.

The leading RMG factories that have supply chain integration between factories and suppliers reached improved financial success at a rate of 15–20% because of their lead time reductions and supplier cooperation advancements (Sakib & Islam, 2022). However, utility supply deficiencies together with systemic challenges like corruption continue to act as major obstacles.

Chapter V - Discussion

5.1 Interpretation of the Findings

The RMG industry of Bangladesh serves as a fundamental economic driver yet its Supply Chain Management systems have encountered major difficulties during recent times. The 2013 Rana Plaza accident revealed critical deficiencies in workplace security and supply chain transparency to the world. The tragic industrial accident killed more than 1,100 people and led the world to focus on sectoral workplace hazards and operational secrecy (WARPTEX, 2022). The Accord on Fire and Building Safety alongside other initiatives were created to enhance factory inspections and establish safety standards compliance. The supply chain reforms have failed to adequately address worker rights violations which continue to affect lower levels of the global supply chain.

The Supply Chain Management of RMG in Bangladesh faced a key evaluation period throughout the COVID-19 pandemic. The worldwide garment market breakdown because of lockdowns triggered international retailers to cancel billions of dollars in orders. Business order cancellations triggered major employment cuts while lowering wages especially affecting women workers. The shutdowns of factories disrupted manufacturing operations which led to delayed deliveries because of raw material shortages from China (Hossain & Alam, 2022). The crisis forced supply-chain companies to speed up their digital transformation by implementing blockchain technology to enhance their tracking capabilities. The global pandemic showed that organizations must develop stronger and varied sourcing approaches (WARPTEX, 2022).

The RMG sector of Bangladesh has faced direct consequences from geopolitical conflicts through various effects. The Russia-Ukraine war triggered increased fuel expenses and transportation expenses while creating market instability for European buyers of Bangladesh RMG industry (Rabbani, Chowdhury, & Rahman, 2024). Western brands started looking for alternative suppliers in Bangladesh because of USA trade tariffs against China (Anwar, 2019). The industry advantage for Bangladeshi manufacturers resulted from this shift but it created more competition with other low-cost producers like Vietnam. The supply of Indian cotton raw materials remains crucial yet occasional political tensions disrupt cross-border logistics because of improved trade agreements between countries.

Sustainable supply chain management in this sector faces high risk due to the recent political turmoil after Prime Minister Sheikh Hasina's resignation along with rising tensions with India and disrupted international relations. Various obstacles confront the industry which include

production limitations alongside international political forces. The political tensions between Bangladesh and India create new barriers that affect sustainable supply chain management operations within the RMG sector. The historical textile industry relationship between India and Bangladesh has faced a critical turning point as political tensions might push foreign buyers to look beyond Bangladesh toward Indian manufacturers and other regional suppliers including Vietnam and Sri Lanka.

The RMG industry in Bangladesh deals with significant sustainability challenges because textile waste and dyeing process water pollution continues to be major environmental concerns. Various industries have started implementing environmentally friendly practices through recycling fabrics into new textiles under circular economy systems and by adopting sustainable dye solutions. Sustainability demands more investment in renewable power generation through solar energy and better cooperation between public institutions and non-profit organizations together with key stakeholders.

The RMG industry of Bangladesh continues to advance safety protocols and digital transformation yet faces substantial barriers to maintain enduring sustainability throughout its supply chain logistics systems. The country must achieve a proper balance between economic development and social responsibilities to sustain its position as a prominent global garment exporter. The political turmoil in Bangladesh together with its strained relationship with India has created major disruptions to sustainable supply chain management throughout its RMG industry. The RMG industry faces major challenges because factory closures reduce capacity while Bangladesh faces an ongoing gas crisis for energy availability and Bangladesh-India geopolitical tensions affect trade and international buyers have increasing concerns about reliability and ethical standards.

5.2 Unlocking Bangladesh's Potential through SCM

The strategic SCM system outlines resource management throughout the whole value chain but logistics executes operational tactics by moving products efficiently from suppliers to end-users.

Alignment Between Strategy and Execution: Cost reduction strategies of supply chain management merge perfectly with logistics' delivery excellence to establish an efficient product flow that enables Bangladesh to reach its market expansion and product expansion targets.

Enhanced Collaboration Across Stakeholders: Logistics and Supply Chain Management establish essential cooperation requirements to unite suppliers with manufacturers and

distributors with retailers and customers. The collaborative method between suppliers and manufacturers generates innovative product designs via strong partnership development. Distribution systems under effective management produce fast product delivery to market which boosts the operational efficiency of the entire supply chain system.

Data-Driven Decision Making: The combination of SCM-logistics systems creates substantial supply chain data which AI analytical tools extract to uncover supply chain patterns and operational weaknesses that affect brand development strategies.

Sustainability Initiatives Supporting Brand Image: Organizations using sustainable practices in logistics operations and ethical material sourcing receive substantial support regarding their brand image because it demonstrates their commitment to sustainable business practices. This approach creates both consumer satisfaction for environmentally conscious customers and new business collaboration potential with CSR-focused organizations. Businesses can develop better reputations and reach environmentally conscious consumers by implementing environmental programs which create opportunities for strategic partnerships with similar organizations.

Improved Financial Performance Enabling Growth Opportunities: Business expansion opportunities develop because better financial results come from lower operational expenses and higher revenue growth which results from better customer service achieved through effective logistics management practices. The improved financial stability enables organizations to reach self-dependence which lets them redirect funds into research and development programs. Organizations that prove their logistical excellence obtain an advantage in market competition which helps them win significant contracts for sustained market dominance.

The RMG industry of Bangladesh presents chances to transition toward sustainable operations despite facing challenging situations. The investment in renewable power options such as solar energy enables Bangladesh to decrease its natural gas reliance and strengthen its capacity to withstand future crises involving cyclones and geopolitical LNG import disruptions. Improved diplomatic relations with neighbouring countries especially India will create better trade conditions that reduce barriers to efficient cross-border logistics operations.

The implementation of digital technologies would enhance transparency across every step in complex globalized value chains starting from material procurement up to delivery thus helping sceptical global buyers rebuild trust during the post-crisis period that demands reliability most.

The entire foundation of operations gains greater fairness by implementing ethical reforms which ensure timely payments and wage compliance and adherence to labour legislation.

5.3 Implications for Sustainability

The RMG sector in Bangladesh together with other industries faces severe supply chain disruptions that result from unpredictable events. Business success relies heavily on companies detecting weaknesses in their logistics operations before they can establish proper mitigation strategies. Companies need to lead proactive risk assessments for developing strategies that reduce disruption effects. Businesses can create plans to reduce the impact of uncontrollable factors which also enable them to eliminate some effects of disruptions completely.

The Bangladesh RMG industry need to strengthen its partnership network by choosing strategic partners who utilize modern technologies including visibility platforms alongside tracking solutions and predictive analysis capabilities because supply chain constraints will continue after 2024. The tools provide better risk prediction capabilities which lead to more efficient disruption management. The RMG industry of Bangladesh needs to incorporate powerful supply chain resilience strategies into its sustainability initiatives. Companies that implement advanced technological solutions including generative AI and predictive programs succeed in managing disruptions and simultaneously reduce waste and enhance resource efficiency and meet global sustainability goals. The method maintains industry competitiveness as it addresses environmental issues connected to manufacturing procedures.

Depending solely on a single supplier in Bangladesh exposes one's business to substantial disruption risks. Unforeseen circumstances like civil unrest or severe weather events have the potential to render a supplier entirely inoperable for an extended duration. To safeguard against such risks, it is crucial to identify reliable suppliers and logistics partners who can ensure the continuity of shipments, even if one supplier faces operational disruptions. Analysts should review lead times by measuring delivery performance against suppliers and carriers in addition to tracking industry standards for Bangladeshi shipping routes. An extensive evaluation process helps individuals understand their supply network better to select dependable carriers effectively.

Proactive supply chain planning requires developers to run simulations that measure all-encompassing effects of their decisions throughout the supply chain. Every business decision beginning with site selection and ending with shipping route determination creates multiple

resulting effects. Through scenario analyses planners obtain visual insight about decision effects and can perform multiple option tests with a click of a mouse.

Every business operating in Bangladesh must establish plans regarding potential disruptions. Businesses in Bangladesh must have backup suppliers set in place when a local supplier faces factory closure. To handle international conflicts that affect shipment delivery businesses must develop essential reshoring protocols. Each risk needs its own predefined operational strategy which includes step-by-step protocols together with defined department responsibilities. Organization-wide vulnerability assessments must remain regular because the risk environment continues to change. This method makes organizations prepared to deal with unexpected events.

Bangladesh faces continuing economic difficulties because its main problem revolves around enduring high inflation levels. The investigation of supply chain logistics disruptions requires equal importance to economic indicators assessment. The country must maintain constant attention to supply chain resilience to guarantee ongoing development alongside stability.

The sustainable development of Bangladesh's RMG industry requires extensive analysis of its multiple dimensions. The industry has shown substantial advancement in environmental programs but requires faster progress toward all sustainability dimensions that include environmental protection alongside social equity and economic sustainability. Every sustainability challenge including climate change impacts and worker welfare concerns and financial barriers for SME green technology adoption and the scarcity of circularity practices needs stakeholders from all levels to work together. Bangladesh can establish itself as the leader in sustainable manufacturing through innovative alignment with global standards from Conference of the Parties (COP) agreements and EU directives which will support continuous growth of its vital RMG sector.

5.4 Potential Opportunities for Sustainable Supply Chain Management

Sustainable SCM integration allows businesses to achieve operational improvements through opportunities that reduce their environmental impact. Through sustainable SCM integration manufacturers achieve higher cost efficiency and better delivery timetables and quality standards and regulatory compliance along with market superiority in global markets.

- **Enhanced Cost Efficiency:** The RMG industry functions with low profit margins because of which cost savings becomes essential. The implementation of effective SCML systems leads to reduced costs through inventory optimization and

transportation efficiency and waste reduction capabilities. Efficient logistics also reduces lead times, which can translate into cost savings.

- **Timely Delivery:** Fast fashion requires all operations to be completed in a timely manner. The market demands fast delivery of product orders from buyers. The delivery deadlines and buyer satisfaction levels are maintained through SSCM because it guarantees timely deliveries of raw materials as well as immediate shipping of finished products.
- **Quality Control:** Consistent quality maintenance serves as an essential factor for attracting and keeping buyers. The supply chain management system ensures continuous quality standards through its operations between material procurement and product production and distribution. Strong logistics operations protect transportation-bound and stored goods from damage.
- **Compliance and Sustainability:** International buyers prioritize sustainable practices while maintaining ethical sourcing standards when making business decisions. Manufacturers of RMG products must fulfill legal requirements and environmental standards and social responsibility criteria through the implementation of SCM. The supply chain system enables companies to put sustainable practices into effect including material recycling and waste reduction.
- **Competitive Advantage:** A globalized market benefits from efficient SSCL which delivers a noteworthy competitive advantage to companies. RMG manufacturers who optimize their supply chains deliver better prices alongside faster delivery times and superior quality which leads to more successful sales to buyers.
- **Risk Management:** The RMG supply chain operates through complex systems that face vulnerabilities against natural disasters together with political instability and pandemics. Business continuity remains under protection through the implementation of risk management strategies which are part of effective supply chain management.
- **Enhanced Brand Image and Customer Loyalty:** The commitment to sustainability brings environmentally conscious customers who support both brand reputation and customer loyalty.

The RMG industry of Bangladesh can achieve efficiency growth along with market competitiveness and operational resilience by implementing sustainable supply chain management which also comply with international sustainability directions. Through expense optimization along with regulatory advantages and technological developments the industry can become a prominent force in sustainable clothing production.

Chapter VI – Problems and Recommendations

6.1 Interpretation of the Problems

The Bangladesh Ready-Made Garments (RMG) sector encounters multiple severe problems which restrict its supply chain operation and sustainability development.:

- **Political Instability and Civil Unrest**: The business environment becomes unstable when political turmoil and brutal civil unrest occur because these disruptions affect facility operations and create safety risks for production sites.

- **Poor Infrastructure**: The combination of insufficient transport infrastructure and heavy traffic congestion at Chittagong Port creates expensive supply chain operations and logistical challenges.

- **Communication Breakdowns**: Operational effectiveness suffers from communication breakdowns because Electronic Data Interchange (EDI) and Transportation Management Systems (TMS) are absent which causes data exchange errors and delays in decision-making and miscommunication.

- **Compliance Demands**: The growing number of ethical labor and environmental certification demands from buyers creates extra administrative work that makes supply chain operations more complex.

- **Utility Supply Deficiencies**: The supply chain operates with reduced efficiency because corruption and systemic issues affect utility supply which leads to production capability limitations.

- **Lack of Skilled Workforce**: Operational deficiencies in the supply chain grow worse because of an insufficient number of qualified staff which restrains the industry from process innovation and improvement.

- **External Disruptions**: Natural disasters together with economic fluctuations cause substantial problems for supply chain stability and reliability thus making operations more complicated.

- **Worker Safety Concerns**: Safety concerns related to workers persist after Rana Plaza because numerous factories ignore international safety standards thus creating dangerous work environments.

- **Labor Rights Violations**: Labor rights violations which encompass substandard wages and unsafe workplace environments continue to affect the industry thus requiring permanent improvements.

- **Market Vulnerability**: The RMG sector remains exposed to market risks because it depends on worldwide supply networks, but these networks become unstable because of geopolitical conflicts and pandemics.

The performance and sustainability of the RMG sector in Bangladesh suffer from multiple challenges that require extensive supply chain management reforms and improvements to overcome them.

6.2 Recommendations

Developing a sustainable supply chain management system for the Bangladesh Ready-Made Garment industry requires simultaneous attention to environmental sustainability and long-term operational efficiency. The current logistical obstacles in the country necessitate the adoption of multiple recommendations to turn this sector into a sustainable system.

❖ **Environmental Sustainability:**

- Reduce emissions: Lowering operations emissions can be achieved by promoting alternative clean transport fuels together with route optimization and efficiency improvements in vehicle systems.
- Minimize waste: Waste reduction programs should be implemented within logistics operations together with sustainable packaging material recommendations.
- Conserve resources: The preservation of resources can be achieved through the promotion of warehouse and transportation energy-efficient technology alongside renewable energy utilization.

❖ **Social Responsibility:**

- Improve working conditions: Provide all workers with fair wages and safe working environments along with reasonable working hours and fair compensation.

- Promote ethical sourcing: The organization should encourage suppliers' use of materials from ethical sources which maintain both labor standards and environmental protection policies.
- Support local communities: The company should connect with local communities to create a positive impact from logistics activities and reduce operational negative effects.

❖ **Economic Viability:**

- Improve efficiency: Logistics operations will achieve higher efficiency through process optimization and new technological adoption which reduces costs and improves operational performance.
- Enhance transparency: Supply chains can achieve better transparency through implementing track-and-trace technology which enhances visibility and accountability throughout supply chain operations.
- Promote collaboration: The supply chain should support cooperation between all stakeholders who can exchange valuable information together with resources and successful practices.

❖ **Strengthen Collaboration Between Brands and Suppliers**

- Encourage Transparent Contracts: Fashion brands should establish transparent supply contracts through long-term commitments that specify pricing details along with volume demands along with sustainability conditions.
- Establish Joint Investment Initiatives: Brands should join with Bangladeshi suppliers through joint investments to develop green technologies and recycling facilities which distribute risks and benefits between brands and suppliers.
- Create Accountability Mechanisms: Brands should implement independent audits alongside certification programs to verify their sustainable commitment practices.

❖ **Focus on Cost-Efficiency Without Compromising Sustainability**

- Adopt Energy-Efficient Technologies: Brands should invest in renewable energy technologies and energy-efficient machines as this will decrease operational costs throughout the long term.
- Optimize Logistics Networks: Data analytics tools should be used to optimize logistics networks which will enable route optimization and minimize fuel consumption and carbon footprint reduction.

- Negotiate Better Trade Agreements: Factory owners should team up with policymakers to gain better trade agreements which include incentives and sustainability-based subsidies for their exported clothing products.

❖ **Build Capacity Through Training and Education**

- Provide Sustainability Training Programs: The company should teach sustainability training programs to both factory personnel and operation managers about environmentally friendly production methods and waste disposal systems.
- Collaborate With Academic Institutions: The company should establish partnerships with academic institutions in Bangladesh to create training programs for sustainable manufacturing practices.
- Raise Awareness Among Stakeholders: The organization should organize sustainability awareness workshops for brands suppliers and policymakers and their relevant stakeholders.

❖ **Leverage Technology for Greater Transparency**

- Implement Blockchain Technology: Businesses should establish blockchain systems which enable continuous monitoring of raw materials from their origins until production completion to provide transparent visibility across all stages.
- Adopt IoT Solutions in Factories: Industrial facilities should integrate Internet of Things (IoT) technology to track their real-time consumption of energy and water usage and emissions in the manufacturing process.
- Use AI-Powered Demand Forecasting Tools: Businesses should employ AI-Powered Demand Forecasting Tools to enhance demand prediction accuracy thus reducing production amounts and waste.

❖ **Port and Infrastructure Development**

- Expand and modernize ports: The main export hub of Bangladesh needs modernization work because it operates from the Chittagong Port. The development and expansion of deep-sea ports at Payra and existing facilities will decrease port congestion and cut down shipping delays at docks.
- Establish dedicated logistics hubs: Special economic zones alongside logistics hubs need to be built next to key RMG production zones. The implementation of this strategy would decrease logistical costs and transportation duration for improved supply chain performances.

❖ **Efficient Warehouse Management and Inventory Optimization**

- Warehouse automation: The implementation of warehouse automation systems for inventory management and warehouse operations would create a more efficient operation that produces fewer errors leading to reduced transportation demands and corresponding emissions.
- Centralized warehouses for raw materials and finished goods: Centralized raw material storage facilities alongside production centers will minimize unnecessary transportation to achieve better cost efficiency combined with sustainability benefits.

❖ **Collaboration with International Standards**

- Comply with global sustainability certifications: The government of Bangladesh should support its manufacturers by promoting adherence to worldwide sustainability standards including the ISO 14001 environmental management protocol.
- Collaboration with logistics providers: The collaboration between Bangladesh and international green logistics specialists enables complete supply chain sustainability throughout raw material procurement to final product delivery.

❖ **Advocate Policy Support from the Government**

- Introducing Tax Incentives for Green Investments: The government should create tax benefits along with subsidies for factories which implement environmentally conscious technologies.
- Enforce Environmental Regulations: Environmental regulations must be enforced through scheduled checks that penalize non-compliant actions.
- Support Export Diversification Efforts: The sector should use government support to promote exporting more valuable products such as organic cotton clothing and recycled fabric clothing.

The RMG industry of Bangladesh faces a critical decision to unite its economic development plans with world requirements for environmental responsibility. The RMG industry of Bangladesh can establish itself as a global sustainable supply chain leader through technological innovations along with infrastructure development and regulatory support. Through investments in environmentally responsible transportation methods and digital systems and warehouse optimization and workforce education Bangladesh can create an efficient sustainable and economical supply chain network for its RMG sector. Through the combined efforts of industries and government departments together with appropriate policy incentives the RMG sector could establish sustainable logistics practices that serve as an example for the global garment industry.

6.3 Conclusion

The Ready-Made Garment (RMG) sector in Bangladesh has grown to become a cornerstone of the country’s economy. However, its supply chain logistics face significant inefficiencies due to infrastructure deficits, regulatory hurdles, and external disruptions, such as political instability and global economic shifts. The study underscores that sustainable supply chain management are essential for maintaining Bangladesh’s competitive advantage in the global apparel industry. The present challenges allow Bangladesh to pursue improvements in its logistics system. Digital investments alongside sustainable logistics approaches and enhanced infrastructure enable better efficiency along with reduced costs and support international sustainability standards. The industry's strength and public perception will increase through active attention to social matters such as wage fairness and workplace safety and gender equality.

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