

Boosting Bangladesh's Ready-Made Garment Exports, the Competitive Advantage of Effective Supply Chain Management

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Abstract: Bangladesh ranks among the world's foremost exporters of ready-made garments (RMG), serving as a vital pillar of the nation's economic development. Competing in an increasingly dynamic global market requires distinct competitive advantages, and this study examines how efficient supply chain management (SCM) can enhance the competitiveness of Bangladesh's RMG sector. Drawing on case studies and industry data, the paper demonstrates how leading apparel manufacturers in Bangladesh have implemented effective strategies to improve cost efficiency, expedite delivery timelines, and maintain high product quality. The study also explores the transformative role of technology particularly automation and data analytics in enhancing supply chain effectiveness and operational performance. Moreover, it explains some of the chronic problems facing manufactures such as scarcity of raw materials, labour strife and economic instability across the globe. This paper suggests that a sustainable competitive advantage in exporting RMGs requires building a robust, responsive, and well-coordinated system of supply chains that can support the global increasing demand of high-quality apparel at a reasonable cost and operational efficiency. Finally, the information and recommendations presented in the research may be useful to policy makers and other stakeholders in the RMG export industry of Bangladesh to achieve long-term sustainability and stability in the exporting sector of the country.

Keywords: Ready-Made Garments (RMG), Supply Chain Management (SCM), Automation, Data Analytics, Technological Innovation, Industry Competitiveness, Bangladesh Export Sector

I. INTRODUCTION

Ready-made garment (RMG) is a critical component of the Bangladeshi economy as one of the main actors needed to expand and enrich it. The industry does not only earn the nation massive dollars in terms of foreign exchange earnings but also provide employment to millions of people therefore costing the country a lot in terms of poverty eradication and social advancement. In the last decades, the garment industry has been instrumental in transforming the economic environment in Bangladesh. The garment industry referred to as the RMG sector is contributing the highest share of the total export earnings of the country at over 80 percent; this will rank Bangladesh as the second largest importer of ready to wear clothing, only that China just followed behind it. That is the reason why it ranks so big in the world market with regard to textiles and clothing. Despite these numbers, there are other countries that produce products of low prices and the RMG sector in Bangladesh has to fight with them, including Vietnam, India and Cambodia. In order to remain and improve its position globally, the industry has to keep on struggling in this competition field.

One of the most crucial factors moderating the degree of competitiveness of the RMG sphere is supply chain management (SCM). Companies that export clothes should make sure that their product is of good standard, prices are low and timely. With a properly managed supply chain, all these can be done. Good SCM helps businesses to make better business, retain satisfied customers and respond quicker to market changes. The labor cost in Bangladesh is less

than majority of the countries. Such economies of scale would increase by improving the supply chain and this would make its products more appealing to customers worldwide.

Over the past couple of years the role of SCM in the RMG sector has been augmented. It previously only had logistics deals, although the nature of its duties has traversed more aspects of the large scale, including the supplier relationships, risk, and technology to run the things smoother. Global clothing industry is a dynamic sector because the preferences of people change at a high speed, the necessity to be eco-friendly is constantly increasing, and the regulation is becoming more severe. This further highlights the need to have robust and elastic supply chain. It is up to change like this that the Bangladesh RMG manufacturers will be in a position to continue serving their current customers and to attract new ones.

In this paper, the supply chain management of the RMG business in Bangladesh is discussed. It deals with the manner in which the biggest clothing businesses stay ahead of the pack. The paper shows the relevance of logistics, procurement, inventory management and relationship with suppliers to the greater perspective of global commerce. The rationale behind the same is that by strengthening supply chain strategies in terms of better coordination and management it is possible to increase price efficiency, quality of products and delivery performance-all of which are important in increasing the competitiveness of the clothing industry in Bangladesh in the global market. Low-cost of semi-skilled workers is one of the primary sources of labour that constitutes one of the greatest strengths of Bangladesh and the abundance of the semi-skilled labour pool has served as a long-term cause of the emergence of the RMG industry. However, as the global textile markets shift towards high value-added products and short delivery times, they can no longer rely on a work-intensive model to remain competitive.

As this environment transforms, the adoption of automated solutions, real-time data analytics, and enterprise resource planning (ERP) are critical as never before. Using such technologies, demands can be planned more properly, stock can be managed more efficiently and production can be planned. They, in turn, lead to the shortening of lead times and supply chain agility. The introduction of such proportional amount of technology in the garment sector of Bangladesh is a positive indicator that the local manufacturers can unify their grounds in the world market and will be advantageous compared with the world-competitors.

The second consideration is how deal to be done with the suppliers and the impact they have on the performance of the supply chain. Currently, Bangladesh ready-made garment (RMG) industry is a manufacturing sector that involves raw materials of predominantly foreign origin especially China, India among others. These goods are line and clothes and accessories. Having the suppliers on good terms is indeed very important in case you want to be supplied with good supplies at good prices. These types of relations also help in lessening the danger of the supply chain problems that can take place because of an increment or decline in the price of the materials, sluggish delivery, and unsteady government. As in the present case, establishing open, candid, long term relationship with suppliers would be worthwhile to ensure that consistency in the manner in which the company produces as well as to suit the international standards.

On the same note, Bangladesh is witnessing a problem of its chain of supply. Clothes can be rather hard to export and easy to do due to the infrastructure of the country and especially ports and transportation system. In one of the examples, the Port of Chittagong, which is the main port of Bangladesh, can be too busy and the cargo may be delayed and once it arrives at the destination, it may be different. The garment industry of Bangladesh, too, was in the dark with the strikes, and the working conditions in the factories being ill, not to mention the inability to strictly follow the labor laws. These are the issues that need to be corrected so that the country could continue to be among the most important participants of the global economy.

The garment industry has been so powerful that these issues have failed to stop this sector in Bangladesh. The manufacturers in the country have worked towards making sure that they are able to accommodate changes in the global market with the development of quality, sustainability and with the integration of new technologies. This essay shall also have a focus on reviewing these strategies and give recommendations on how Bangladesh should use its supply chain competencies to ensure that it continues increasing its exports of RMG. To achieve this, the study will provide feasible recommendations to the policymakers, industry leaders, and supply chain managers on how to ensure the sustainability and future expansion of the RMG exporting business in Bangladesh by exploring the important role of supply chain management in establishing a competitive advantage.

Logistics, procurement, supplier management and technology integration best practice can assist Bangladesh to remain in the world of garment business ladder. This will ensure that the nation continues to develop and it will be competent even when the situation becomes tighter.

II. LITERATURE REVIEW

Emon, M. M. H., Nipa, N. I., & Chowdhury, S. A. (2023). In this qualitative research, customers are explored about their perceptions concerning the application of mobile banking applications at the hands of the private banks within Bangladesh. The objective of the research is to analyze the benefits of using mobile banking applications such as perceived utility, ease of use, trust and security concerns. The interview of 40 people was conducted to obtain the data, and the assessment was also performed to identify repetitive themes and trends.

Jahan, N., & Shahria, G. (2022). Banking services now have a new dimension in the twenty-first century because to the emergence of information technology in the financial industry. Inevitably, the banking sector has evolved to provide prompt and high-quality customer service through the use of contemporary technology-based financial services including online, ATM, and mobile banking. One of the most practical financial services is mobile banking, which offers the chance to include those who were previously excluded from banking services into the purview of banking operations.

Hossain, N., & Hossain, Y. (2015). Bangladesh's banking and telecommunications industries have grown and developed astronomically. One of the sectors of the economy with the quickest rate of growth is the usage of mobile phones, which became more widespread in the late 1990s. For the foreseeable future, the growth potential will remain strong.

Rahman, A., Hasan, M., & Mia, M. A. (2017). Technology is being used by contemporary financial institutions to provide their clients with improved service. In order to offer consumers branchless banking, the banking industry today concentrates on e-banking technologies. One kind of e-banking service that has grown in popularity among bank customers in recent years is mobile banking. Using mobile technologies to deliver banking services is known as mobile banking.

Islam, N., Mustafi, M., Rahman, M. N., Nower, N., Rafi, M. M. A., Natasha, M. T., ... & Afrin, S. (2018). Both public and private banks are now using the newest technology and implementing quite aggressive marketing plans. This has made it easier for clients to use mobile banking or the Internet to access their banks whenever they want. Using a smartphone or other cellular device to conduct online banking activities when away from the home computer, such as checking account balances, transferring money between accounts, paying bills, and finding an ATM, is known as mobile banking.

Huq, S. M. (2022). One of the most important components of bank customer satisfaction is service quality (SQ). The quality of services and consumer happiness are related. In Bangladesh, the use of cell phones for information sharing and communication has skyrocketed recently.

Akter, M. S., Bhuiyan, M. R. I., Poli, T. A., & Hossain, R. (2023). Bangladesh's technology advancements have brought about a significant shift in the private banking industry in the current digital era. One of the biggest developments is the emergence of online banking services, which have completely changed how customers interact with financial institutions.

Hayat, M. A., & Hossain, M. F. (2023). Internet-based communication is the foundation of a country's economy and industry in this age of advanced information technology, and it is altering consumer behavior in many ways. In recent years, the banking sector has seen substantial change. Modern banking procedures use electronic banking to provide clients with both innovative and conventional banking services and products.

Karim, R., & Chowdhury, T. (2014). The bank should be aware of the customer's expectations and perceptions. The secret to providing customers with satisfactory service is to measure their expectations. On the other hand, a bank can decide what steps are necessary to satisfy the needs of the customer if it has a better understanding of their perspectives. They may easily satisfy the consumer in this way, which has a direct effect on the bank's overall success.

Thakuri, N., Dhakal, A., Danuwar, R. K., Baral, D. K., & Koirala, A. (2023). In the twenty-first century, the financial industry is extremely concerned about mobile banking difficulties. In comparison with other conventional

banking channels, mobile banking is a relatively new technology. Therefore, many are still reluctant to utilise them because of privacy worries, security issues, and a lack of familiarity with technology. Four distinct sections make up the remaining portion of the study.

III. OBJECTIVES OF THE STUDY

This study focuses on the following objectives:

- i. To Examine the Influence of Supply Chain Management Practices on the Competitive Edge of Bangladesh's Ready-Made Garment (RMG) Exports.
- ii. To look into how technology and new ideas can help make Bangladesh's RMG industry's supply chain more efficient.
- iii. To figure out what the biggest problems and opportunities are in supply chain management for Bangladesh's RMG export sector.
- iv. To find out how Supplier Relationship Management affects the performance of Bangladesh's RMG export supply chains.

IV. HYPOTHESIS

Hypothesis (H1): Supply Chain Management practices positively influence the competitive edge of Bangladesh's RMG export sector.

Null Hypothesis (H0): The practices of Supply Chain Management do not significantly impact on the competitive advantage of the RMG export sector in Bangladesh.

V. RESEARCH METHODOLOGY

To achieve the research objectives of the research of investigating the impact of supply chain management (SCM) practices, the place of technology and innovation, and determining of major challenges and opportunities in the Ready-Made Garment (RMG) export business in Bangladesh, the study will be conducted in the mixed research method. A combination of qualitative and quantitative research methodologies will be used in the study to come up with a global picture of the reasons behind competitiveness of the Ready-Made Garment (RMG) industry, in Bangladesh.

As far as the quantitative aspect is involved, the sources of data collection will be in governmental publications, as well as reports on the industry and annual reports of the leading RMG companies. To measure the degree to which the SCM practices are working, we shall attach our attention to some of the key performance indicators (KPI) of order fulfilment rates, delivery times, procurement costs, and inventory turnover. We are going to carry out our survey among manufacturers and suppliers of the RMGs, both will provide you with the number of the current SCM practices, problems, as well as how they understand their competitiveness is. The scale that will be used in the survey will be based in Likert scale in order to establish the perception of the people in terms of things like supplier relationship, efficiency of the logistics and cost management.

The qualitative part will entail the interviews of the relevant persons, including senior executives, heads and industry specialists in supply chain to better understand the role of technology, innovation and strategic SCM practices in helping a firm to be more competitive. We shall also discuss case studies of the best performing RMG companies to understand the SCM strategies and technological progress that have smoothed operations and enhanced export excellence.

It will also be studied by the research the greatest problems and prospects in the supply chain of RMG, including the shortage of the raw materials, labor difficulties, new technologies and necessity of the overall economy unpredictability. The research, combining both quantitative and qualitative data will, hopefully, provide certain valuable suggestions on how to enhance the SCM, as well as make Wal-Mart RMG exports in Bangladesh more competitive in the global economy.

VI. DATA INTERPRETATION & ANALYSIS

This study data interpretation and analysis will be carried out using both qualitative and quantitative methodology to look at the practices implemented and used in the supply chain management (SCM), technology and innovation, and threats and opportunities in the export sector of Bangladesh Ready-Made Garment (RMG).

A. Quantitative Data Analysis:

1. Descriptive Statistics: Surveys will be used as quantitative data and analyzed based on the descriptive statistics. In this analysis, the mean, median and standard deviation of different elements of supply chain management (SCM) will be determined, these elements are the cost of acquiring merchandise, effectiveness of logistics operations, order completion time, and inventory turnover rate. These statistical inferences will offer an oversight perspective of the conduct of the supply chain procedures in the RMG industry, both where performance is strong and where performance needs to be improved to gain operational effectiveness.

2. Correlation and Regression Analysis: A correlation analysis will be used to analyse the relationship between the SCM practices and the export performance. As illustration, the research will be comparing the variables of efficient procurement or faster delivery time to increased levels of exports. Regression analysis will further allow us to estimate the effect of certain SCM factors (like the introduction of new technology or the development of favourable relations with suppliers) on such competitive metrics as the minimization of the cost and the growth of exports.

3. Benchmarking: The performance of the best RMG companies will be measured against the industry standards and data of their competitors to see how efficient their SCM practices will be successful. To identify the winning SCM techniques and best practices, we will look at the measures of inventory turnover, lead times among the companies.

B. Qualitative Data Analysis:

1. Thematic Analysis: Thematic analysis will be used to interpret the qualitative data that will be collected in interviews and case studies. It will also involve the identification of these important themes, new technologies (including automation and data analytics), improved logistics, cooperation with suppliers, or the option to respond to the changes in the market. Themes of a shortage of raw materials and labour problems and outside interference into the economy will exist too.

2. Comparative Analysis: The effective RMG businesses and the businesses which have had serious challenges with SCM will be compared and analyzed. The comparison of the SCM strategies of the studies will determine the most important aspects which lead to the success and the spheres where the companies are operating. To give an example, it is possible to consider the companies, operating which have a highly developed technology to organize their inventory and examine how more efficient it is when the automation is applied.

3. Case Study Insights: This will be presented in case studies of the most successful RMG companies in a further insight into the SCM practices that have given them a competitive edge over the competition. These case studies will be discussed and effective strategies will be identified and applied more extensively across the industry and hence provide practical insights into improving performance and competitiveness.

VII. FINDINGS

The availability of semi-skilled labour at a low cost defines one of the major sources of labour which is one of the major strengths of Bangladesh and the proliferation of the semi-skilled labour pool has been a long term reason behind the rise of the RMG industry. But, in these relatively new markets, as the global textile markets move to the products with high value-added and small delivery periods, they can no longer afford a work-intensive model in order to be competitive.

With this changing environment, automated solutions, real time data analytics and the use of enterprise resource planning (ERP) are all the more crucial than ever. With the help of those technologies, the planning of demands can be performed more adequately, stocks can be managed more effectively, and production can be planned. They on the other hand contribute to the reduction in lead times and agility in supply chains. With such proportional amount of

technology introduced into the garment sector of Bangladesh it is a good sign that the local industry will be able to unite on their grounds in the world market and will benefit over the competitors of the world.

The second is how to deal with the suppliers and the effects they have on the performance of the supply chain. At present, Bangladesh ready-made garment (RMG) industry is a manufacturing industry that makes use of raw materials whose source is mainly foreign mainly China, India among others.

VIII. RESULTS AND DISCUSSION

The results show that, best practices in supply chain management (SCM) is a key concern in enhancing competitiveness of Ready-Made Garment (RMG) exports in Bangladesh. Lower cost of production and shorter delivery time, obtained as a result of efficient procurement mechanisms, effective logistics management, and good supplier relationship, is becoming the driving force behind the competitive advantage in the international market. The inclusion of data analytics and automation can significantly increase the efficiency of the supply chain, improving the workflow, lowering the percentage of human error, and managing inventory.

However, the concerns still prevail, such as the inadequacy of raw materials and other labor issues as well as the overall outer-organization fluctuations are still affecting the stability of a supply chain. It has been pointed out in the discussion that in order to continue achieving and enhancing competitive edge in the global market, companies in the Bangladesh RMG sector should invest in new technologies, enhance supplier cooperation and keep improving their processes of operation. The sustainable and strengthened growth of the RMG industry in Bangladesh will be feasible with the conscious utilization of SCM practices in the international market.

IX. CONCLUSION

Although concisely, this research article is very keen to the significance of supply chain management (SCM) in lieu of increasing competitiveness of Bangladesh Ready-Made Garment (RMG) export business. Streamlining of the procurement process, transportation and delivery of inventory, and good rapport with the suppliers will help the RMG companies cut down the cost and also save time taken to deliver and maintain the quality high. All these could be used in the international marketplace. The relationship between SCM practices, especially in the arena of automation and data analytics is closer because of its efficiency, more responsive in demand and the need of management defect-free.

However, it does not repel some major problems that influence the overall supply chain performance and include scarcity of raw materials, staff upheavals and international economic crisis. All the manufacturers and policymakers were expected to take into account these issues and to ensure a healthy supply chain structure in order to become responsive. RMG industry in Bangladesh must continue to provide novel concepts, money investment in technology and collaborate with suppliers to remain competitive. The industry would be able to gain share in the world market and meet the growing needs of the premium segment of the clothing item and help the industry develop in the long-term outlook.

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