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**Structure and Current Practices of
Supply Chain in Bangladesh RMG
Sector: A Study on Narayanganj BSCIC**

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Structure and Current Practices of Supply Chain in Bangladesh RMG Sector: A Study on Narayanganj BSCIC

Abstract

In general Supply Chain Management is very multidimensional. In the RMG sector the Supply Chain Management is even more complex due to features of global Supply Chain. This script aims toward assess the concept of Supply Chain Management concerning Bangladesh Ready Made Garment Industry. In the global supply chain, the structure and practices of supply chain consists of tariffs, nontariff obstructions, switch over rates and differences in product necessities, consumer savors and business observes. Along with all those, borders also present some obstacles in transportation services, which are very common for RMG sector in Bangladesh. The overall manufacturing cost can be reduced and profit can be increased by carefully using the available information and integration of supply chain. This is the right time to consider and reorganize for the Decision Makers and the Planners of Bangladesh about the SCM issue to implement in Bangladesh Garment Industry with the inspiration and dedication to uphold in the Global Garment Market with the highly competitiveness, efficiency, and productivity.

Key Words: RMG sector, Bangladesh, Supply Chain.

1. Introduction

The RMG sector captures a unique position in the economy of Bangladesh. The ready-made garment (RMG) industry has recently occupied the largest part of exports and foreign currency in Bangladesh and has been for more than a decade the second largest contributor to gross domestic product (GDP) (Asgari and Hoque, 2014). The tremendous success of readymade garment exports from Bangladesh over the last two decades has surpassed the most optimistic expectations. Today the apparel export sector is a multi-billion-dollar manufacturing and export industry in the country. Given the dominance of the sector in the overall economy, any sort of vulnerability and threat to this sector should be a matter of concern. So rather than basking in glory we should concentrate on retaining sustainable growth and competitive edge.

Although Bangladesh is adapting all the latest technology but in compare to Vietnam, Cambodia, China, Pakistan, India the productivity of the RMG workforce is not up to the mark. In this regard, Bangladesh is gradually losing its market to India and other countries. For this reason, companies operating within this industry must then be able to apply business strategies that would help sustain the growth of the clothing sector. This means that by modifying some of the existing business procedures of the apparel companies, such as their supply chain management systems, continuous progress and development in the industry may be observed. By means of identifying the current supply chain management practices of some Bangladesh garment companies, business areas for improvement can be identified. The development of the supply chain management can also likely strengthen its connection with the international market. Therefore, in this paper we have tried to identify the structure, importance, and current practice of supply chain on RMG sector and major obstacles facing by the garments owners.

The paper is divided into six parts. The current part discussed the background and the rationale for the study, and objectives of the study. The next section outlines the research methodology followed by literature review of the RMG sector. Then, the fourth part of this paper describes Structure of the Supply Chain Network of RMG Sector in Bangladesh, key indicators of supply chain of RMG sector, and findings of the overall analysis of the problems based on literature review followed by experts' opinion based on semi-structured questionnaires. Based on overall findings, the subsequent chapter consists of recommendation on faster

supply chain. Finally, the last part presents a summary of the paper. The section also admits some limitations of the study and guides the scope for further research.

2. Literature Review

In the apparel sector, all the Bangladeshi garment companies are subcontractor and producing at the low end of the market. Lam and Postle (2006) have reviewed the concept of supply chain management in textile and apparel supply chain management in Bangladesh. They discussed the strengths and problems faced by the Bangladesh textile apparel supply chains. They argued that Bangladesh apparel industry is generally not aware of the concept of supply chain management and industrial benchmark for both manufacturing and retailing industries in Bangladesh and the supply chain performance is below the world average. The evolution of supply chain management occurred during the 1990s; at this time, collaboration between manufacturers and suppliers had been established in order to enhance traditional approaches in supply management functions. At the same time, retailers as well as wholesalers had integrated their logistics operations as well so as to achieve greater competitive advantages.

Nuruzzaman (2007) took an attempt to develop more effective supply chain for Bangladeshi RMG to enjoy competitive advantage in the global apparel business through analyzing the current supply chain and investigating the relationship among the players in the supply chain. Islam (2012) analyzed that apparel supply chain matters such as new orders, raw materials supply, production processes and logistics related to finished goods delivery by using efficient supply chain process and also mentioned that Bangladesh garment industry improvement is desired in reducing the supply time required to produce and fulfill the orders placed by foreign companies. His findings are using modern fast and effective machinery can reduce time taken to deliver the order. Tanvir and Muqaddim (2013) analyzed the approach is to compile the supply chain management or the Bangladesh garment industry seriously. In the RMG sector the supply chain management is more complex owing to characteristics of global supply chain (SC). In the global supply chain, crossing borders nearby supply with a multiplicity of general obstructions to intercontinental business: tariffs, nontariff obstructions, switch over rates and differences in product necessities, consumer savors and business observes.

The business of the fashion industry is so impulsive and competitive that the driver for successful entrepreneurship is capitalizing on

opportunities and scopes by integrated efforts among supply chain partners (Sen, 2008); apparel manufacturers and traders are engaging themselves to utilize integrated supply chain management as a source for improving their business performance (Gunasekaran et al., 2008).

Different stages of supply chain have conflicting goals and objectives. Asgari and Hoque (2013) examined the opportunity that lies in an integrated supply chain to provide a competitive advantage to the Bangladesh RMG sector. Since the end consumers of the apparel fashion market are becoming increasingly time-sensitive, a decrease in lead time, besides quality and cost criteria, is needed to win more orders from buyers.

3. Methodology

For proper investigation, both qualitative and quantitative information is important. We developed our findings based on a detailed qualitative approach along with the semi-structured interviews which were undertaken after the completion of the literature review to complement the findings from the literature review as well as to gain a deeper understanding of the current problems of RMG industry in Bangladesh. A review of the literature (books, articles) was undertaken in order to gain a thorough understanding on the subject. Our research area was Naraynganj. We collected our quantitative information from the expert entrepreneur of Naraynganj BSCIS. WE relied on both primary and secondary information. Mostly we have used secondary information but in terms of expert opinion we have some primary data.

4. Findings and Analysis

4.1. Structure of the Supply Chain Network of RMG Sector in Bangladesh

Supply chain management (SCM) is the process of planning, implementing, and controlling the operations of the supply chain with the purpose to satisfy customer requirements as efficiently as possible. Supply chain management spans all movement and storage of raw materials, work-in-process inventory, and finished goods from point-of-origin to point-of-consumption.

Some of the key characteristics of the fashion industry are that the life cycle of any new styles of apparels is continuously decreasing, end demand for any garments is highly fluctuating and changing over time, various kinds of designs and styles are evolving everyday

worldwide, and the total chain from yarn and cotton supplies to final garments through a lot of suppliers from many countries is very dynamic and difficult to manage (Sen, 2008). So, apparel manufacturing companies of any country should manage the supply chain in a way that meets the total needs of the end consumers (Gunasekaran et al., 2008). This has caused the fashion industry to become increasingly complex and dynamic, and this sector has attracted many new market entrants and thus has triggered intense competitions (Gunasekaran et al., 2008).

The current RMG manufacturers of Bangladesh are importing most of the required woven fabrics from China, India, Pakistan and Indonesia whereas they are producing the knit fabrics by themselves. In this paper, we will mainly focus on knit sector. In the knit sector, the total activity can be divided into different parts: knitting, dyeing, sewing, cutting, and finishing. In Bangladesh, we need to import 95% dyes chemical from other countries and sometimes accessories. There was a time when Bangladesh was dependent to other countries for importing fabric and yarn. But now this backward linkage industry has become one of the stronger sides of RMG industry. They are producing yarn; they have their knitting section to produce fabric as per buyer's demand. Supply chain integration makes it possible to manufacture fabrics before taking orders from buyers but requires more collaboration among buyers, fabric suppliers and garment manufacturers in Bangladesh.

In the supply chain, the parties playing a major role are retailers, contractors, sub-contractors, merchandisers, buyers and suppliers and everyone plays an important role in the network. In readymade garments sector, most of the companies and industries in Bangladesh are at the lower end of the supply chain as they are mostly sub-contractors and produce end product of the supply chain.

Islam and Liang (2013) described two generalized network of raw material supply and collection processes (Figure 1 and 2). They described the role of the country's most industries as tailor shop where they receive order from the foreign buyers and collect raw materials from international and some cases from local market as per the demand of the buyers. Hence, the buyers and garments manufacturer relation remains simple.

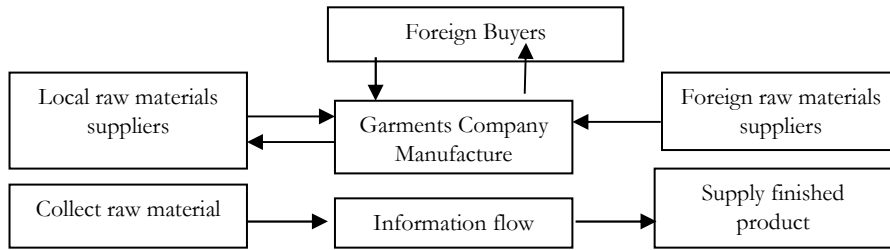


Figure 1: Business Structure and Raw Material Supply Network

Source: Nuruzzaman (2007) in Islam and Liang (2013)

On the other hand, relation between raw materials suppliers and the manufacturer is quite complex as Islam and Liang (2013) described. Accessories like buttons, level tags, collars, etc. mostly come from local markets and major fabric come from international suppliers. The figure 2 describes that a garment company gets order from a buyer which actually finds order from its foreign clients. Sometime foreign buyers directly contact with the garments company to save time and money. Garments Company collects its raw materials from both local and foreign sources. In some cases, the foreign buyer itself manage raw materials especially fabrics, cotton, etc. for their products.

In the RMG sector, the Manufacturer - Raw materials Supplier relationship is different. In this industry, the main raw materials are fabrics (Cloths) and few accessories are like button, collar etc. About 80% of the suppliers of accessories are local and accessories suppliers are not responsible to increase lead time. The process is visualized in the following figure.

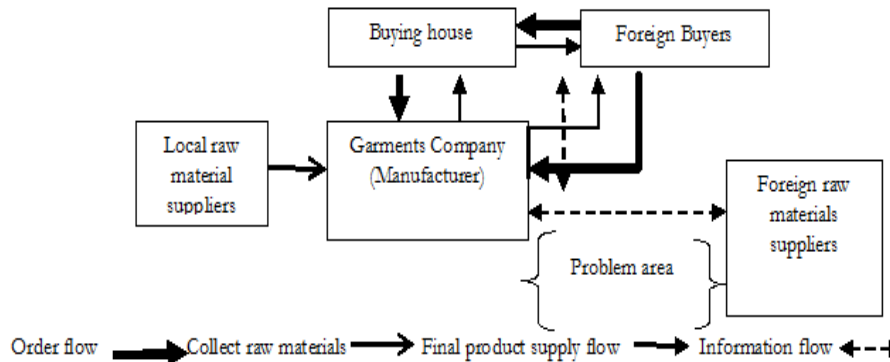


Figure 2: Business Structure and Raw Materials Collection Process

Source: Nuruzzaman (2007) in Islam and Liang (2013)

A garments company needs to maintain a close relation with foreign buyers, local buyers, raw material suppliers and transport and transshipment agencies. A generalized supply chain has been developed (figure 3) to depict this interrelationship of different parties involved in the supply chain.

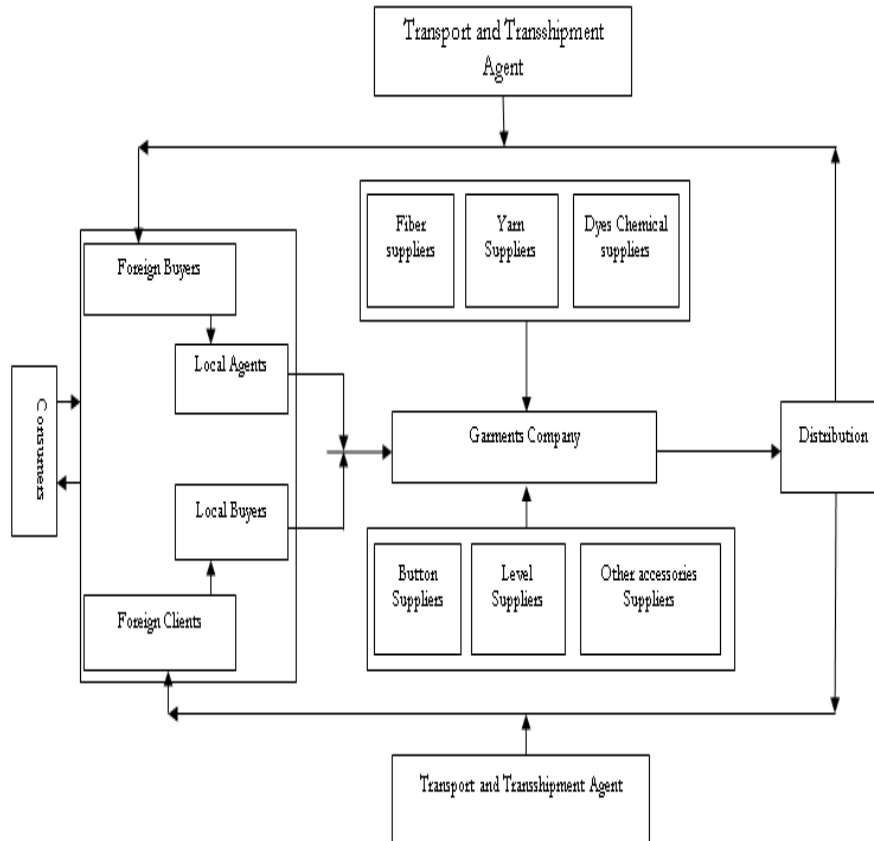


Figure 3: A General Supply Chain Network of a Garments Company

Source: Nuruzzaman (2007) in Islam and Liang (2013)

Backward Linkage for Raw Materials

The finished garments depend on linkage of three steps: i) conversion of fiber/cotton to yarn, ii) yarn to grey fabric and iii) grey fabric to dyed, printed, designed and finished product (Habib, 2011). In this linkage, Bangladesh is quite capable of conversion of cotton to yarn, knitting, finishing in knitwear sector but largely depends on foreign sources for dyes

chemical to turn the grey fabric to dyed or printed fabric (Habib, 2011). This dependency on foreign sources leads long lead time. However, in accessories sectors Bangladesh achieved a good growth as 80% of demand is met locally (Habib, 2011), though the quality of the local accessories is still an issue. And this backward linkage is now considered as strength for RMG sector as our textile and spinning mills are growing, presently they meet about 90% of local knit yarn demand (BGMEA and BKMEA).

Lead Time

Given the geographic position of Bangladesh and the prevailing shipping routes, it takes considerable time for shipments from these countries to reach the ports in Bangladesh. The time requirement is further lengthened by the fact that goods have to be brought back from China and elsewhere through transshipment at Singapore or Malaysia as goods cannot be shipped directly to Bangladesh from these countries. On the other hand, competitors like China, India and Cambodia to some extent enjoy self-sufficiency in this aspect.

Timely sourcing of raw materials from foreign sources is the main bottle neck in the supply chain of the garments industries of Bangladesh (Haque et al., 2011; Islam and Liang, 2013; McKinsey and company, 2011). The total lead time, also called manufacturer lead time, includes the time required at following stages:

- Order Processing, and Sourcing and Ordering of Raw Materials
- Manufacturing of Raw Materials
- Shipment of raw materials to Sea Port of Bangladesh
- Unloading and custom clearance at sea port of Bangladesh
- Inland Transportation (Port to RMG manufacturing point)
- Time for Sample Approval and Production of Finished Product
- Shipment of the Finished Product

The best way to shorten the lead time is to develop domestic backward linkage at country level and adoption of efficient Material Requirement Planning in industry (Habib, 2011; Sagbansua and Alabay, 2010). In this study lead-time is defined as the time it takes from getting order from a customer and received the delivered product by that customer (Azad, 2004).

4.2. Outcome from Expert Opinion

From the above literature review, we have recognized the following problems and cross-checked with few garments owners from Narayanganj BSCIC Industrial Estate through semi-structured questionnaire. And from the interviews, we have come to the conclusion that most of these problems are curable under strict policy and subsidiary from Government to some extent.

Product Development and Sampling

Product development and sampling stage fall under pre-production processes. Other pre-production processes include sample approvals, finalizing vendors and cost negotiation with raw material suppliers. Most of the factories do not consider including development stage schedule under plan. It results no control on pre-production processes. It goes long and long. When sample approval gets detailed, consequentially ordering of trims and fabric get delayed. Out of total lead time most part is consumed by pre-production functions. As a result, planned cut date (PCD) gets postponed. 30% of the respondent considered this matter as problem.

Production Urgency

Pressure and urgency increases when factory starts production processes (Cutting, preparatory and sewing), as order has already eaten up bigger part of total time scheduled for everything on fast pace. They even push their whole team on quantity production. 10% of the respondents face this problem on a regular basis on a regular interval. In this stage, they forget to care of quality of the product. Once they start ignoring standard procedures they get stuck on stitching quality or related problem rises. Repair and re-inspection become a main process. These process increases production time.

Delay from Sub-Contracting Jobs

For high fashion product, few value-added processes such as panel printing, embroidery, bead work or dyeing are needed. For these value-added processes factory normally send fabric or half stitch garment to sub-contractors for job-works as not all the garments owners have latest technology embroidery and knitting machines. Sub-contractors also come with their big commitments on delivery and quality. But when factory receives goods, they had to count some more days on their delays. As a result, shipment gets delayed and the owners need to pay extra on air

shipment or sometimes if the buyers cancel the order due to delay, they need to sell the whole lot at the local market at lower price. We had 50% respondents who do not have latest technology for value added process and as a result according to these 50%, this dependency is a reason for longer lead time. After discussing with them, our conclusion is this happens due to absence of planning at subcontractor factory.

Labor Productivity

The productive efficiency of labor is more important determinant for gaining comparative advantage than the physical abundance of labor. In Bangladesh, the garment workers are mostly women with little education and training. The employment of an uneven number of unskilled labors by the garment factories results in low productivity and comparatively more expensive apparels. Bangladesh labor productivity is known to be lower when compared with that of Sri Lanka, South Korea and Hong Kong. It's true that in Bangladesh we have cheap labor compare to other countries but at the same time it is also true that they are not really effective. The respondents were very upset while they were sharing that they have installed all the latest machineries which are used by the competitor countries but still they are lagging behind in terms of workers' productivity and this is only problem which is faced by all of them. All of them (100%) agreed that productivity is one of the major problems that they are facing now.

Others

Although we could not find any other problems but from the interview we identified few more problems faced by the RMG sector. In present scenario, on an average a business man needs 4-5 weeks time to export and incurs USD 700-800 per 20*20 containers due to the bad condition of road, transportation etc. according to most of them infrastructure is one of the major problem for delaying. Another major problem which came out through interview is utility expense and facility. They do not get electricity, gas. They have setup their own ETP plant which incurred a huge amount of investment as they did not get any subsidy from the government whereas in competitor countries, they get the facility and subsidiary from the government. They need to run their business with diesel generator as they do not get 24/7 gas and electricity facility. Therefore, due to severe utility problems, they need to face a big amount of extra expense.

5. Proposed Procedures for Faster Supply Chain

5.1. Formation of Central Bonded Warehouse

Although we could not find any other problems but from the interview we identified few more problems faced by the RMG sector. In present scenario, on an average a business man needs 4-5 weeks' time to export and incurs USD 700-800 per 20*20 containers due to the bad condition of road, transportation etc. according to most of them infrastructure is one of the major problem for delaying. Another major problem which came out through interview is utility expense and facility. They do not get electricity, gas. They have setup their own ETP plant which incurred a huge amount of investment as they did not get any subsidy from the government whereas in competitor countries, they get the facility and subsidiary from the government. They need to run their business with diesel generator as they do not get 24/7 gas and electricity facility. Therefore, due to severe utility problems, they need to face a big amount of extra expense.

5.2. Need for Material Requirement Planning (MRP)

Following the earlier discussions, it is clear that major problem in readymade garments sector of Bangladesh is its long lead time of production and delivery. MRP is a computer-based system designed to organize the timing and ordering of the dependent demand products. In this context, the bottle neck is the backward linkage of material collection. Heizer and Render (2004) evaluated different future scenarios and found that the establishment of local industries only or establishment of stock of raw materials would not shorten the lead time. Rather it depends on the inventory management and linkage with common bonded warehouse (Heizer and Render, 2004). In MRP, all raw materials and accessories are named as dependent demand which is discontinuous in nature (Sagbansua and Alabay, 2010). But for the discontinuous demand they need a better management that helps them to optimize the timing and ordering of those discontinuous demands. Computer based MRP helps to optimize timing and ordering of discontinuous demands of raw materials and thereby the lead time could be reduced (Sagbansua and Alabay, 2010). By implementing MRP, if Bangladesh can produce the best quality raw materials that will be best option as that will reduce cost and lead time.

6. Conclusion

To remain competitive, Bangladesh needs to remove all the structural impediments in the transportation facilities, power supply, and management of seaport, utility services, and overall infrastructure and in the law and order situation. The government and the RMG sector would have to jointly work together to maintain competitiveness in the global RMG market. Given the remarkable entrepreneurial initiatives and the dedication of its workforce, Bangladesh can look forward to advancing its share of the global RMG market.

In a nutshell, we can conclude that one of the biggest impediments of further growth of RMG sector is the lack of proper infrastructure. So, the concerned associations should take proper steps for infrastructure development to ensure adequate electricity, gas and port facility to RMG manufacturers. At the same time the RMG enterprises need to put emphasis on increasing efficiency and productivity of the RMG factories. More backward linkage facility should be established in the country to reduce dependency on other countries for dyes chemical by investing local backward industry in both micro and macro level. Bangladesh also need to increase the level of value addition by better combining the players in the chain of value addition and establishing industry hubs where a whole production industry including small backward linkage units will carry on the process in harmonized succession.

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