

A Conceptual Framework of Supply Chain Management Practices and Operational Performances in Readymade Garments Industry of Bangladesh

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Abstract— The Supply Chain Management (SCM) has emerged as a new field of study which received much attention by the business houses and the researchers. Research shows that efficient SCM ensures on time arrival of raw materials at the production plant, prevents the need to source additional materials from alternative sources, avoids higher prices and guarantees higher profitability for the manufacturing company. This research develops a conceptual framework of the impact of SCM practices on operational performance in RMG industry of Bangladesh through literature review. In this study, six most important SCM practices and eight metrics for operational performances have been adapted from the prior literatures. This study found that there is a positive relationship between SCM practices and operational performances of RMG companies in Bangladesh.

Keywords- SCM Practices, Improved Working Environment, Operational Performance, Improved Training for Employees, RMG Industry.

1. Introduction

Bangladesh is the second biggest RMG exporting country for last three decades competing with other RGM producing nations after China [1]. Being the lifeline of Bangladesh economy, this sector contributes the largest amount of foreign exchange earnings for the Bangladesh economy contributing around 83% of total exports and also contributes 20% to Bangladesh GDP. The economy of Bangladesh is shifting from an agro based economy to an industrial economy which is essential part of the process of economic development. Bangladesh, one of the representatives of LDCs has recently been graduated to a lower-middle income country from a low-income country. Day by day RMG industry is facing stiff competition from other

RMG producing countries in the world those have increased efficiency and higher productivity along with wide product range. Bangladesh remains at 30 to 90 days lead time for regular products which is too long comparing to China, Sri Lanka and India. This industry can remain competitive through improving operational performances with implementing appropriate practices of SCM. But unfortunately, very little study has been found in the literature on this particular issue.

The industry started its journey in late 1970 with Riaz Garments Industry as pioneer and experienced heavy growth in the 1980 and 1990s. It was possible to have such growth because of simpler innovation, modest work environment and simple sewing machines used in this industry. The industry employs more than four million people where in more than 85% are female with more than 4500 companies. Though the industry grew mammoth for securing the second position in the RMG exporting countries after China, yet this sector has more potential in contributing for the economy. The industry has also great contribution in improving women empowerment situation in the country which has direct positive impact in the society. But, however, this is a great concern that female workers are reducing in numbers in the industry mostly because of salary discrimination, long work hours and poor work-life balance and inability to cope with newer technologies [2].

Bangladesh enjoyed 6.5 % share of the global apparel market in FY 2017-18 [3]. More than 30 billion USD worth garment items were exported from Bangladesh in 2018. 8.76% growth was registered in export earnings of Bangladesh in financial year 2018 from the apparel industry [4]. It had a target export of US\$30.16 billion in FY 2017-18 and which was achieved through relentless efforts by all

stakeholders. Now that, the industry has set a goal of US\$50 billion export by 2021 which is extremely difficult to achieve in this present global context of pandemic situation. It can well be argued that, Bangladesh RMG industry must remain competitive through implementing SCM practices for promoting operational performances for achieving this goal beside other relevant initiatives of grabbing market share diluted from China due to ongoing trade war between China and USA. Researchers across the world defined Supply Chain in many different ways using different constructs over the past years. Most definitions described SCM as a network of different companies where they interact each other for efficient conversion of raw materials in to finished products and flow of information.

In the present days, instead a company competing with another company, an SCM of one company competes with same of other companies. Multidisciplinary origin and evolution have given birth of many definitions of SCM. [5] found out 166 definitions for SCM in one of their studies where in every definition is unique. SCM became a very important subject for the researchers and also for the business enterprises of all industries. Moreover, it equally has emerged as an important strategic tool for organizations of all types. SCM has been proved as the critical success factor for the management of products and services efficiently for becoming more competitive in the market.

Under highly competitive environment, it becomes very difficult for retaining current position and ensuring the sustainability of growth of this industry. Bangladesh RMG sector has very limited option other than efficient implementation of SCM in order to reduce the lead time, improve efficiency, improve quality and customer satisfaction and ensuring value for the money buyers spend on these RMG products. SCM is nothing but moving right items to right customers at right time with lowest cost by most efficient means. It encompasses planning with forecasting, procurement, manufacturing, logistics management, inventory control, distribution and retailing. SCM practices are the combinations of functions performed in the different firms for ensuring proper management of the extended SC the companies have. Out of so many definitions available in the literatures, one of the most popular definitions of SCM is integration and efficient

management of all the related processes those are required for timely delivery of products and services along with ensuring smooth flow of information which ultimately creates customers satisfaction. Many scholars and researchers defined Operational Performance in many different ways basing on the industry. There are different ways for measuring organizational performance such as accounting measures, operational performance, survival and value measures. [6] found out that maintenance of optimum level of relationship between buyers and suppliers improve the SC performance of organizations. This study aims in finding out the impact of SCM practices on operational performance in the RMG industry of Bangladesh.

2. Research Objectives

Broad Objective: To develop a conceptual framework of Supply Chain Management practices on operational performance in RMG industry of Bangladesh.

Specific Objectives: The specific objectives of this study are outlined below.

- To review the present state of operational performances in the RMG industry of Bangladesh.
- To identify the relationships between SCM practices and the operational performance in RMG industry of Bangladesh.
- To identify the relationships between operational performance and the overall performance of RMG industry in Bangladesh.
- To construct a theoretical model for Supply Chain Management practices and operational performance in RMG industry of Bangladesh

3. Literature Review

The SCM concept was first familiarized in the 1980s and was developed from old-style logistics management. Many studies conducted in trying to determine the relationships between SCM practices and organizational performances in different industries across the world let alone in RMG industry of Bangladesh. Few researches are available in industries including manufacturing companies,

hospital industry, banking industry, and hotel industry on effect of SCM practices on operational performance but same studies on RMG industry are very scanty. More so, the study on relationship between supply chain practice and operational performance in different industries in general and in RMG industry in particular is very scarce. The particular study of interest in trying to determine the impact of SCM practices on operational performance in the RMG industry of Bangladesh is non-existent. An efficient SCM is fundamental to the competitiveness of manufacturing firms as it directly impacts their capability to respond to the market demands in judicious approach. The SCM concept was investigated from many different stand point and perspectives few of which are organizational theory, operations management, purchasing and supply management, marketing, management information systems and logistics & transportation. Prior literatures have been reviewed in this section and the research gap has been found out in Bangladesh RMG industry.

SCM practices consist of actions carried out by any organization for ensuring proper management of its extended SC. Number of researches around the world have been conducted for identifying relevant supply chain practices across different sectors. SCM practices have been studied with “supplier partnership, outsourcing, cycle time compression, continuous process flow, and information technology sharing by few researchers”. It also has been discussed with “concentration on core competencies, use of inter-organizational systems such as EDI, and elimination of excess inventory levels by postponing customization toward the end of the supply chain by other researchers”. Few other researchers identified six aspects of SCM practices: “supply chain integration, information sharing, supply chain characteristics, customer service management, geographical proximity and JIT capability”.

Many researchers defined organizational performance depending on the particular context and industry. [7] defined organizational performance as to how well an organization attains its market-oriented and

financial goals. There are few more definitions of organizational performance understanding of which is of paramount importance for having a clearer picture about operational performance. Efforts of defining organizational performance kept continuing. Organizational performance is comprised of three outcomes; product performance, financial performance and shareholder return. Organizational Performance as the ability that an organization has for achieving its goal by efficient management, good governance and dedication.

The definitions of organizational performance mentioned above are not exhaustive, but however, will help understanding operational performance of a given company. Many researchers also defined operational performance in many different ways.

RMG industry is the highest contributor in the national export of the country, but studies on SCM practices in RMG industry of Bangladesh are very scanty. The studies those were conducted were mostly concentrated in the area of work-life balance, lead time, productivity, work environment and compliance requirement, level of practices of SCM for RMG sector. There was hardly any study found on SCM practice and operational performance in the RMG industry of Bangladesh. Available literatures on related issue in Bangladesh RMG context have been critically reviewed. [8] examined the influence of SCM for providing an edge for the RMG industry. They found out that customers across the world are time-sensitive. They argued that Bangladesh RMG sector must improve quality and reduce lead time and cost for winning more and more orders from the buyers across the world for diverse RMG products range. On the other hand, few studies are available on lead time management of RMG industry. Bangladesh needs more lead time for processing a customer order. ‘Bangladesh needs a lead time for regular product between 90 to 120 days, whereas it is 19-45 days for Sri Lanka, the same is 40-50 days for China and for India it is 50-70 days.

4. Conceptual Framework

From literature study it has been found that there are numerous practices of SCM across the industry. But to keep this particular study brief and manageable only six most important and dominant SCM practices pertinent to RMG industry have been used. The construct used for studying SCM practices as independent variables have been adapted from previous studies conducted on the particular issue. [9] used four SCM practices including sharing of information, lean practice, SSP, CRM as independent variables and Financial/Operational Performance and Market performance as dependent variable for studying the relationship between SCM practices and Organizational Performance in manufacturing companies in Kenya. Again, five practices including SSP, CRM, level of information sharing, quality of information sharing and postponement for measuring SCM practice in prior study. On the other hand, [10] used four dimensions of SCM including 'CRM, SSP, training and information sharing in their study. [11] used quality of information sharing as SCM practice in a study conducted on manufacturing industry in UK.

[12], [13] & [14] measured SCM using strategic supplier and customer relationships in their study. [15] used lean manufacturing in his study of finding out the relationship between SCM practices and operational performances among other practices. [16] used outsourcing and use of IT in his study to determine the relationship between SCM practices and Organizational Performance. Cost, Flexibility, Quality and Delivery have been used as proxies for measuring operational performance in a study conducted on manufacturing companies in Brazil [17].

Justifications for considering Enabled Work Environment and Operational Performance as dependent variables along with different constructs and measures have been provided in the respective paragraphs. Selected SCM practices would improve the work environment of the RMG companies if implemented well. Enabled work environment of companies would contribute in improving the much needed operational performances for onward

improvement of overall performance of the RMG companies. But however, the relationship amongst SCM practices, Enabled work environment and operational performance are not straight forward rather this relationship is influenced by two mediating variables: Improved Training and Balanced workload for employees and one moderating variable: Management expertise. This model has been derived out of thorough literature review and will be tested later through scientific study. Considering previous literatures and importance of practices on RMG industry following conceptual framework for the study has been formulated:

Strategic Supplier Partnership (SSP)

SSP is considered as the association between the company and its suppliers. It determines how organizations engage with their suppliers for the key resources. Suppliers are considered as the strategic partners of the business in this contemporary business world. Not only keeping close ties with the suppliers will do but organizations even need to develop and finance suppliers for their growth and expansion. Necessary coordination with suppliers for different operational activities, reduces unnecessary inventory, minimizes manufacturing cost, reduces demand instability and finally increases revenue.

Customer Relationship Management (CRM)

CRM deals with the aspect of management that deals with how organizations become more responsive to the customers in ever changing business world. This management ensures better feedback system, partnership and customer service.

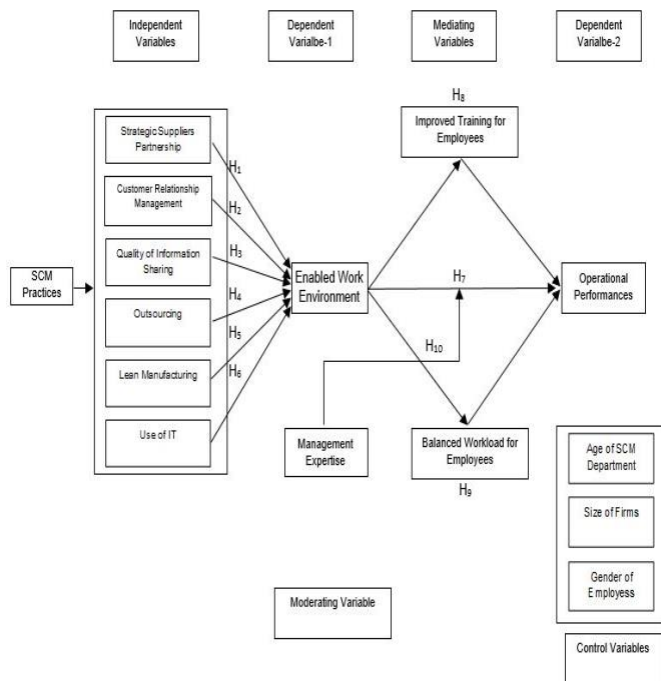


Figure 1. Author's Model

CRM deals with the aspect of management that deals with how organizations become more responsive to the customers in ever changing business world. This management ensures better feedback system, partnership and customer service. [18] argued that training, better communication system both internal and external, management support system help building effective customer relationship. Understanding of demand pattern is the most important success factor for any business organization. [19] argued that improved customer relations is instrumental in improving demand analysis, which results in efficient material and resource planning.

Quality of Information Sharing (QIS)

QIS deals with sharing required information on the products with the parties involved in extended SC. QIS is the willingness for making different data and information available to all parties involved. Timely sharing of information on re-order level, safety stock, demand management and material resource planning helps organization achieving targeted performance. Various parties along the SC must share operational activities among themselves in order to ensure seamless flow of product and information with necessary fund transfer [18]. Sharing of right and timely information improves the efficiency of the organization at all levels possible.

Outsourcing

[19] argued that outsourcing is using resources by external parties which were usually performed by internal people of the organization. Outsourcing can also be defined as getting non-core jobs done by other parties outside of the organization in an attempt to bring efficiency, reduce cost, improve quality and finally reducing lead time. In this effort, all the parties involved in the SC must act in harmony without slightest possibility of mis- coordination and disjointed manner. Transfer of any function for services to a third party which were performed in house previously is outsourcing. Firms usually do not outsource their core activities. Presently many organizations are outsourcing some of their services for becoming cost efficient. In short, outsourcing is hiring and engaging other parties for selected functions/sub-functions of the organizations which were performed in house previously. Firms which are using outsourcing as a strategic tool, normally does not outsource their core function in order not to be exploited.

Lean Practices

Lean can be considered as system which ensures efficient use of input materials in order to produce targeted quality products with much less time. Waste reduction of all kinds is the heart of the lean system. This system makes sure end products of customers' choice being produced with much more efficiently leaving no waste [20]. This is an approach of management which aims improving different process involved at various level of the organization [21]. [22] argued that there is hardly any study conducted on the use of lean practices in improving overall performance in the RMG industry of Bangladesh. Lean production is a strategic system and it provides number of benefits including improved productivity, growth in sales, improved confidence and increased profits.

Use of IT

Effective use of IT helps organizations to conduct business operations more cost efficiently. It manages information system of the company so as to enable organizations to do business more effectively. Bangladesh RMG introducing different software to bring efficiency in every function in supply chain. Companies in present days engage in the collaborative commerce through using EDI.

Adoption and using right technologies for the particular company and operation is very important otherwise it can suffer from technology redundancy. Technology makes things possible but human beings make things happen. So, appropriate technology with skilled manpower helps organizations improving operational performance. Proper implementation of Enterprise Resource Planning (ERP) systems provides an edge over other incumbents in the industry. ERP improves decision making process by managers at different level in the organization with timely sharing of required information that ultimately helps achieving customer satisfaction.

Dependent Variables

This study has considered two inter-related dependent variables including Improved Work Environment and Operational Performance. SCM practices will influence the first tier dependent variable 'Improved Work Environment' and ultimately this will have onward influence on operational Performance of RMG industry of Bangladesh.

Enabled Work Environment

Enabled work environment refers to such an environment where all workers of a particular factory have full liberty to work without any exploitation and stress. [23] mentioned few factor including timely and standard wage payment, payment of working extra hours, standard working hours, expected behavior of the co-workers and supervisors, healthcare facilities, maternity leave facilities, day care center, social security schemes, zero sexual harassment, promotion opportunity, freedom of association, training facility, appropriate safety and security condition, written appointment letter, job security bonus and other fringe benefits. The enabled work environment is combination of technical, human and organizational environment. Employee performance is dependent on work environment in many folds and has a direct influence. Organization success is also primarily depends on overall work environment of the organization. It shapes up the positive behavior of the employees and empowers them to contribute for the organizations using their potentials without any fear. The comprehensive work environment is the function of

interrelationship between employees and the same with employers.

Operational Performances

Operational Performance of any company ultimately leads to overall organizational performance. In the business environment companies use their own way of measuring performance depending on their requirement and interest. Operational performance refers to how business organizations deliver the products and services so ordered by the customers exceeding their expectations [24]. It indicates the ability of the SC to provide goods and services according to the requirement of the customers. Operational performance is widely accepted measurement for evaluating the efficiency of SCM of the RMG industry of Bangladesh.

Mediating Variables

Mediating variables, if carefully selected, helps explaining the relationship between dependent and independent variables. It makes an attempt in explaining why such a relationship exists between variables in a more understandable way. This variables reveal the underlying relationship between variables with presence of other variables in more meaningful and convincing way. In this research the mediating variables are: Improved Training of Employees and Balanced Workload of Employees.

Moderating Variable

Moderating variables influence the relationship amongst variables. Sometime for the influence of moderating variable existing relationship can be increased or it can be decreased. Use of appropriate moderating variables can help understanding the relationship in a more detailed and critical way. Management Expertise has been used as moderating variable in the conceptual framework or better understanding the relationship between dependent and independent variables.

Control Variables

In order to study the relationship between SCM practices and Operational Performance through Enabled Work Environment; first tier dependent variable considering mediating and moderating

variables, three control variables have been considered and these are: Age of Firms, Size of Firms and Gender of Employees.

5. Conclusions

RMG sector is the highest export earning sector of Bangladesh. The continuation of progress of this sector is extremely important for the economic betterment of the country. Thus, any kind of problem that arises in the way of the progress of the sector should be identified and treated as early as possible. Elimination of raised problems might not be enough to ensure the sustainability of progress and therefore operational performances should be increased by better SCM practices in the RMG industry. Therefore, this study is extremely useful for increasing the competitive advantage of Bangladeshi RMG sector by identifying the impact of SCM practices on operational performances.

The study findings have contributions to different stakeholders including policy makers, regulatory authorities, Garments company owners, investors, academics of the industry in different way. The study findings have both theoretical contributions and practical implications. As the relationship between SCM practices and Operational performances is not very straight forward and depends on many other intervening factors, so to understand the gamut of this relationship, this conceptual model incorporated number of influencing variables which is a theoretical contributions in this field of study. Regulatory bodies and industry leaders can take necessary measures for facilitating implementation of SCM through different initiatives. Academics can also have deep insight on the relationship between SCM practices and operational performance in the GMG industry of Bangladesh.

Bangladesh RMG is now facing stiff competition from many different RMG producing nations including Vietnam, Cambodia, Kenya etc. The industry must improve its overall performance through improving operational performance by implementing appropriate SCM practices. Furthermore, for capitalizing the advantage of increased demand of RMG products globally and for achieving Bangladesh export target of US\$50 billion by 2021, the industry must implement SCM practices efficiently. These all opportunities and

challenges in the RMG industry triggered this particular research study. The findings of this study will provide necessary insight to the owners and managers, regulatory bodies and government authority, academics.

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