

Supply Chain Management Practices in Services Industry: An Empirical Investigation on Some Selected Services Sector of Bangladesh

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Abstract-*The aim of this study is to examine the supply chain management practices in services industry of Bangladesh. Study revealed that there are differences in practices between manufacturing and services industry with few counts like inventory management, logistics management and use of technology etc. Within the selected sub-sectors, there are differences in the level of practices in supply chain management with banking sector is the highest whereas in hotel industry the practice is the lowest. This study also investigates the effect of supply chain responsiveness in terms of operation system responsiveness, logistic process responsiveness, supplier network responsiveness and competitive advantage of the firm. This study contributes for the services providers to increase their efficiency levels while making policy. On the basis of findings, strategic supply chain management practices should be implemented in more detailed ways in services industry of Bangladesh.*

Key words: *Supply Chain Management (SCM), Service Supply Chain Management Practices, Supply Chain Key Performance etc.*

1. Introduction

In today's competitive business, there is an increased focus on delivering value to the customer. Today, the largest share of Gross Domestic Product (GDP) in developed countries is accounted by the services sector. The major employment opportunities in developed and developing countries are also largely contributed by services sector [1]. The services industry is characterized differently than manufacturing as sales are intangible, and depend more on people's education, experience, and ethics etc.

Global economy is gradually shifting from manufacturing based economy to Services based economy, so as the case in Bangladesh. There had been many researches on the Supply Chain Management Models but most of the studies were focused on manufacturing industry. The focus on

attention of most of businesses is providing products and Services that are more valuable compared to its competitors. Concurrent to the focus on customer value, the marketplace in which businesses operate today is widely recognized as being complex and turbulent [2]. Due to expansion of the market from domestic to global market, it increases customer demands, for instance demanding lower prices, faster delivery, higher quality products or services and increase the variety of items [3]. Ref. [4] stated that the end customer in the marketplace today determined by the success of failure of supply chain management practices. Many previous researches explored the importance of integrating suppliers, manufacturers, and customers or supply chain integration [5]; since the objective of every supply chain should be to maximize the overall value generated. Supply chain management concept is required to minimize the cost incurred in providing the services. To recognize the supply chain as a key and vital area, both in the public and private sectors, have focused attention on its effectiveness. In a number of organizations, cost-effective supply chain is a matter of survival as purchased goods and services account for up to 80 percent of sales revenue, while in the public sector there is an ever-increasing demand for savings in the procurement process. The globalization of some sources makes it essential that the professional practice is improved and regarded as a key element in the preparation of company or organization strategies [6].

1.1 Statement of the Problem

Supply Chain Management (SCM) practices contribute significantly to the growth of the firm and its performances. All organizations-whether producing tangibles or

intangibles-are concerned with place distributions. That is how to make their offerings available and accessible to users at affordable cost. Therefore place is shown as one of the seven elements of the marketing mix for services sector. In general, this element of the marketing mix has been neglected as far as services are concerned for most texts deal with place decisions in the context of the movement of physical items. Ref. [7] suggests that the subject of place decisions for services is confused as people struggle with the concept of a distribution channel for items which are intangible, often inseparable from the person performing the service and perishable, in the sense that inventory cannot be carried. The most frequently used channel by service organizations however is that which operates through intermediaries. Service channel structures vary considerably and some are now complex. In some service transactions, a number of service organizations may be involved. So, it is essential to examine how much services sector are practicing the supply chain management in their operations.

1.2 Research Questions

- To what extent the services industry practices the concept of Supply Chain Management (SCM)?
- What role does Supply Chain Management (SCM) Practice play towards the service performance in Bangladesh?
- What factors may limit the practices of Supply Chain Management (SCM) in services sector?

1.3 Research Objectives

The main objective of the study is to investigate supply chain management practices in services industry of Bangladesh. However, the specific objectives of the study are:

- To explore the degree to which Services industry are aware of the Supply Chain Management (SCM);
- To find out the challenges of Practices of SCM in service industry in Bangladesh;
- To provide some recommendations on the basis of findings.

2. Key Concepts of Supply Chain Management

2.1 Supply Chain Management (SCM)

The world is becoming increasingly resource aware and resource constrained. To build a sustainable future, supply chain needs to be sustainable. The term "Supply Chain" has received many definitions over the past years as it gained popularity, with most definition describing it as a network of different entities interacting together to make materials and information flow [8]. Companies will no longer compete against companies, but rather supply chain will compete against supply chain" [8]. Supply Chain Management (SCM) lacks a universal definition, mainly due to its multidisciplinary origin and evolution [9]. A literature review by [10] revealed as many as 166 unique definitions of SCM. According to International Chamber of Commerce, SCM is the management of the acquisition, transformation and delivery processes that enable and direct the flows of products & services – as well as the supporting reciprocal flows of information & funds – along a chain leading from the sources of the original inputs up to the end customers, all aimed at achieving the best possible customer service at the lowest possible cost. The goal of Supply Chain Management (SCM) is to integrate both information and material flows seamlessly across the supply chain as an effective competitive weapon [11]. *The Council of Logistics Management (2000)* defines supply chain management as the systemic, strategic coordination of the traditional business functions and tactics across these businesses functions within a particular organization and across businesses within the supply chain for the purposes of improving the long-term performance of the individual organizations and the supply chain as a whole.

SCM practices involve a set of activities undertaken in an organization to promote effective management of its supply chain [12]. SCM practices can be defined in various ways. It does this by integrating both information and material flows seamlessly across the supply chain as an effective competitive weapon [13]. Ref. [14] Stated SCM is a novel management philosophy that recognizes that individual businesses no longer compete as solely autonomous units, but rather as supply chains.

2.2 Service Supply Chain Management (SSC)

SSC Management encompasses the planning and management of all activities involved in sourcing and

integrating services across functional and organizational boundaries necessary for meeting the needs of the end customer. The structure of SSC has some similarities with the product supply chain, as the services are created, purchased and transferred from one element to another in a form of a chain. The structure of SSC is a complex network, which combines direct or indirect service providers around service integrator [15]. Ref.[16] refers that a SSC consists of a customer, a service provider and an initial service provider. A social capital link was introduced between customer and service provider as well as service provider and service supplier [17]. Based on the delivery of the different forms of services, the structure of SSC can be divided into three forms: serial-SSC, parallel SSC and hybrid SSC [13]. Ref. [18] refers that structured an application SSC with three members that are application infrastructure provider, application service provider and customer etc.

SSC management is the management of information, processes, resources and service performances from the earliest supplier to the ultimate customer [19] SSC is a service-network that reorganizes different service entities in order to satisfy customers' requirement by using modern management technology to break down and rebuild a system. It considers customers' demands as starting point and takes a complex service or an Integrated Service Package as a series of process in service when the service-industries are developed to some extent [13]. SSC can be defined as follows: an integration of a series of entities (individual person, organization, enterprise) to provide personalized service directly or indirectly [20] SSC refers to the supply and demand chain of service which integrates the service resources using new technologies and management models [21]. The Producer SSC management is an integrated management mode of service information, service processes, service capacity, service performance and service funds from the initial service supplier to the ultimate customer in the process of producer service outsourcing [15].

3. Supply Chain Management (SCM) Practices and Services Industry in Bangladesh

Supply chain system is not very sound in Bangladesh, especially in the services sector. There are evidences of using supply chain management in the manufacturing sector with limited scale. Service beneficiaries are not receiving full benefit of the services because of lack of efficient service delivery process. SCM practices involve a set of activities undertaken in an organization to promote effective management of its supply chain [12]. The short-term objectives of SCM are to enhance productivity, reduce inventory and lead time. The long-term objectives of SCM are to increase market share and integration of supply chain [12]. SCM practices can be defined in various ways [22] coined SCM practices as practices that include supplier partnership, outsourcing, cycle-time compression, continuous process flow and information technology sharing. Ref. [23] defined SCM practices as the set of activities that organizations undertake to promote effective management of the supply chain. Ref. [24] termed SCM practice as a special form of strategic partnership between retailers and suppliers. Ref. [25] viewed SCM practices in terms of reducing duplication effects by focusing on core competencies and using inter-organizational standards such as activity-based costing or electronic data interchange, and eliminating unnecessary inventory level by postponing customizations towards the end of the supply chain. Ref. [12] categorized SCM practices from the following aspects: close partnership with suppliers, close partnership with customers, just-in-time supply, strategic planning supply chain benchmarking, few suppliers, holding safety stock and sub-contracting, e-procurement, outsourcing and many suppliers. Ref. [26] identified seven theoretical processes of service supply chains which include information flow, capacity and skills management, demand management, customer relationship management, supplier relationship management, service delivery management and cash flow. In general, SCM practices are categorized into demand management, customer relationship management, supplier relationship management, capacity and resource management, service performance, information and technology management, service supply chain finance, and order process management [27]. Services are used

intensively in the production of all goods, making up around 10-20 percent of production costs in both manufacturing and agriculture, and sometimes more. Over the past three decades, Bangladesh has evolved from a controlled economy to a market oriented economy through a wide range of policy reforms which include reforms in trade policy, industrial policy, monetary and fiscal policy, exchange rate policy, and promotion of foreign direct investment. Service sectors are increasingly becoming the core of Bangladesh economy. It has been observed that implementation of Supply Chain Management Practices in Service Sector of Bangladesh is not remarkable. However few process/ practices like use of technology demand management, inventory management, lead time management, sourcing etc have been used to a limited scale.

SCM has allowed company to rethink their entire operation and restructure it so that they can focus on its core competencies and outsource processes that are not within the core competencies of the company. Due to the current competitive market, it is the only way for a company to survive.

4. Growth and Development of the Services Economy in Bangladesh

Service has become the largest sector of the economy of Bangladesh. The shift towards service economies has been a feature of many economically developed countries in recent years. Service sector has the growing potential to be driver of sustain able economic growth and significant poverty alleviation in Bangladesh.

Table 1. Sector Wise GDP Change in Percentage

Years	Agriculture	Industry	Service	Total
1941-1950	70	4	26	100
1951-1960	62	5	33	100
1961-1970	55	10	35	100
1971-1980	44	11	45	100
1981-1990	32	12	56	100
1991-2000	25	15	60	100
2001-2011	18	30	52	100
2012-2016	17.2	28.9	53.9	100

[Source: www.worldbank.org &

<https://www.cia.gov/library/publications/the-worldfactbook/Fields/2012.html>]

The services sector has been a major driver of exports. The main contributors have been export of workers and a

range of other factor and non-factor services. Other service export income also grew significantly although at a more modest pace of 8% per year. Income from remittances and other service is a major source of exports and an important driver of GDP growth. The solid contribution of services sector to export earnings is self-evident.

5. Literature Review

Since the decade of 1990's supply chain area has caught the attention of researchers and ever since various streams in supply chain have evolved, namely – Supply Chain Management (SCM) strategy, SCM framework, trends & challenges, SCM alliances & relationships, logistics development, supplier development, IT integration, Vendor Managed Inventory (VMI), quality in supply chain, reverse SCM, green SCM, environmental & social issues in SCM, Marketing practices, Technology management etc. [28]. Supply chain management is, "a set of three or more entities (organizational or individuals) directly involved in the upstream and downstream flow of products, services, finances, and/or information from source to customer" [29].

The best supply chain practices are the initiatives that influence the whole supply chain, its parts or key processes [30]. Ref. [31] stated that on the other hand used eleven supply quality-management practices to study and test manager's perception on the association between supply-chain quality management practices and organizational performance. The eleven factors were: top management leadership; training; product design; supplier quality management; process management; quality data reporting; employee's relations; customer's relations; benchmarking; supplier selection; and supplier participation. Despite the increasing popularity of SCM, most organizations have not fully implemented it to exploit the benefits. Most challenging aspect of SCM is the lack of understanding of the supply chain management concept. However, supply chain management is a long, complex and dynamic process. Its successful implementation needs to be associated with a thorough understanding of the

concept itself [32]. The core function of supply chain management is the process of locating, obtaining and transporting inputs required, which in turn requires a focus physical product and product *suppliers* [33]. It is evident that both industries; manufacturing and services are attempting to procure inputs that can be utilized to provide value to the end customer. Ref. [34] reviews that article on manufacturing Supply Chain Management pitfalls and opportunities, nearly all fourteen pitfalls could also be conferred to the services industry. While much work has been done to analyze the supply chain management construct in a manufacturing (goods-producing) environment, the same cannot be said in the services arena. Services Supply Chain Management (SSCM) is a combined service of different service providers, located in multiple locations to minimize the cost structure, who are capable and work under network to meet variable demands by accomplishing multitasks [35]. There are many definition of SSCM with different focuses. The focused points derived from definitions of SSCM are described in table 2:

Table 2. Focused Points Derived from Definitions of SSCM

S L	Reference s	Focus points in the definition
1.	[26]	Flow of information, money from original supplier to customer.
2.	[19]	Network of SC partners to produce service.
3.	[13]	Services network of service organization to meet customer demand as starting point.
4.	[20]	Integration of entities to provide services.
5.	[21]	Balancing supply and demand through integration of service resources.
6.	[36]	Customer and result oriented process from planning to strategic level
7.	[15]	Integration of information and resources from supplier to customer.

These practices are influenced by contextual factors such as type of industry, firm size, its position in the supply chain, type and length of supply chain [13].

This is highlighted by studies that point out significant differences in sourcing services. Ref. [36] identified that cooperative relationships among supply partners may help service supply chain partners overcome the ambiguities of the service environment. They also posited that the relationship between supply chain relationships and supply chain performance that has been validated in manufacturing may not be generalizable to services.

Scoping down to service industry, service supply chain management structure possesses similarities to that of product supply chain as services are created, purchased and transferred from one element to another in the form of a chain [38]. Organizations began to realize that it is not enough to improve efficiencies within an organization, but their whole supply chain has to be made competitive. They now realize that understanding and implementing effective supply chain management (SCM) practices is an essential prerequisite to profitably competing in a global marketplace [39]. There is lacking of awareness about SCM in hospital, thus healthcare managers are less efficient in supplying medication [40]. SCM might play a significant role for health care providers to ensure savings in this industry as going forward system. The healthcare executives can improve the bottom line figure through process improvement of core SCM process strategically. In today's changing business environment, there is an increased focus on delivering value to the customer at the cheapest possible costs. Hotel companies, both big and small, must focus on how to offer products and services while keeping costs low. The current recession has affected businesses from all over the world, including the hotel industry [41]. The hotel industry is a billion dollar industry that mostly depends on the availability of free time and disposable income. Banking sector portrays the whole economy of a country. Undoubtedly, the industry is increasing day-by-day with new banks and their branches. Deposits and credits of these banks are also increasing which have contributed to the economic

development of the country. Recently, there are many participants involved in providing the banking services to the client with effectively. So it is required to adopt the concept of supply chain management in Banking sector of Bangladesh. In the food industry, it is crucial for restaurants to achieve high level of customer satisfaction and this can be achieved through superior customer service. Undoubtedly, the success of a restaurant business depends on superior service quality, value and customer's satisfaction [42]. The workers are not alert of their jobs. Customers have to wait for them to take the orders or clean up the table. The workers need to know that the waiting time for food is a crucial factor for customers' satisfaction and complaint [43].

Despite the extensive research on the supply chain management, the availability of rigorous academic research about the supply chain management practices in services sector is scarce. A comprehensive survey of literature reveals that although there is no dearth of research works in this field, even in the sub-continental context, no such work has yet been done in Bangladesh. This justifies the significance of this study from several points of view and the rationales for the study may be analyzed from different points of view. Supply chain management and service management will get the importance to develop the service sectors in Bangladesh. Based on the discussion on the literature, the following theoretical model has been developed:

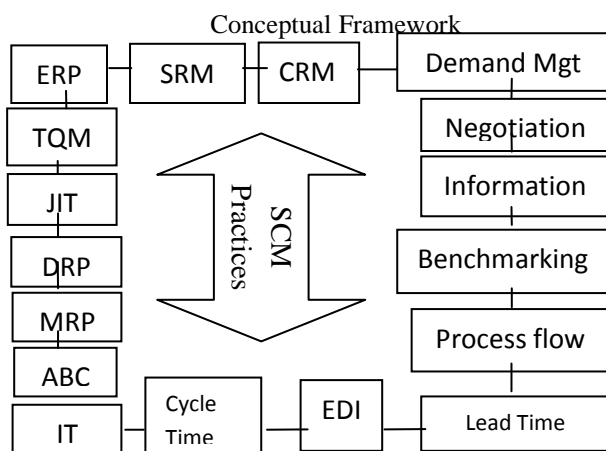


Figure 1. Conceptual Framework

6. Research Methodology

To conduct this study, both primary and secondary data have been used. Primary data have been collected through administering a structured questionnaire. Secondary data have been collected from the credible and reliable sources. For the purpose of the study, a group of respondents consisting of employees of service firms who are directly or indirectly involved in services delivery process of the organization. Thirteen each Private Commercial Banks, Hotels, Fast Food Restaurant and Local Hospitals have been selected for the study. 54 people who are directly or indirectly involved in supply chain management practices have been selected for the study. Convenient sampling techniques have been used to determine the sample size. Dhaka city was chosen as the case study since it is the hub of all services activities of Bangladesh. The collected data have been analyzed using advanced statistical tools i.e. SPSS software etc.

7. Findings and Discussion

There has been total 36 Supply Chain Practices listed in the questionnaire. Total 54 respondents from four sub sectors including Restaurant, Hotel, Hospital and Banking Industry have responded to the questionnaire. It is found that 'Demand Management' is the most effective in all four sub sectors where as 'Postponement Strategy' is least followed in the restaurant industry. Cost Leadership strategy is least followed in Hotel Industry whereas Supply Chain Measurement system and Implementation of Enterprise Resource Planning is least effective in Hospital Industry and Banking Industry.

Table 3 Grand Mean of Responses from Questionnaire

	Restaurant	Hotel	Hospital	Bank
Grand Mean	3.736	3.732	3.491	3.75

Source: Primary, 2016

36 statements regarding the variables of supply chain have been exposed to the respondents by five points likert scale. Means of each variable under four sub-sectors selected were found out. Subsector wise Grand mean has been calculated as shown above. Result represents that grand mean of Banking sector

is 3.75 which is close to the 4.0 in five points rating scale which means level of practices of supply chain management is highest amongst all subsector of services. It can also be inferred that services sector of Bangladesh practices supply chain management with varied level.

7.1 Hypotheses Test

Five hypotheses have been formulated after careful study of all available literatures and keeping consistency with research questions and objectives. All five hypotheses have been rejected. It can be argued that the practice of Supply Chain Management is maximum in Banking Industry with lowest significance value of .000 and highest t value of 5.865 whereas least practice of the same has been found in Hotel industry with maximum significance value of .012 and lowest t value of 3.361. Test result shows that there is practice of Supply Chain Management in the service industry of Bangladesh at satisfactory level.

Table 4. Hypothesis Test – Sub Sector Wise

TYPE	Test Value = 3					
	t	d f	Sig. (2- tailed)	Mean Differe nce	95% Confidence Interval of the Difference	
					Lo wer	Upp er
Restaur ant	4.4 31	1 1	.001	.62269	.313 4	.932 0
Hotel	3.3 61	7	.012	.61111	.181 1	1.04 11
Hospit al	3.7 01	9	.005	.40000	.155 5	.644 5
Bank	5.8 65	2 3	.000	.59375	.384 3	.803 2

Source: Primary, 2016

Table 5. Hypothesis Test – Overall

	Test Value = 3
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	t	df	Sig. (2- tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Avg Respon se	8.936	53	.000	.56687	.4396	.6941

Source: Primary, 2016

There has been 36 practices listed down in the questionnaire and an effort is made for reducing the dimensions following factor analysis. 36 practices have been reduced to five factors/components and after discarding few practices which did not have any association with other practices. Remaining practices have been categorized under five factors with their priority. Here one point may be mentioned that the cumulative variance is 54.323% rest of the variances has been accounted by other practices which are not statistically significant.

The test result shows that Internal Supply Chain Management influenced the response most with high correlation value in all four sub sectors. The SCM practices under the category of Internal Supply Chain Management had more contribution in the responses in all four sub-sectors of Bangladesh Service Industry. On the other hand, services firms face the severe challenges to fulfill the commitment of the clients due to unexpected political turmoil, sudden labour unrest, port inefficiency, custom inefficiency, bureaucratic problems, lack of use of technology, import dependency for raw materials, less labour productivity measurement etc.

is gradually shifting from manufacturing based economy to service based economy with Bangladesh is no exception to it. Today, the largest share of Gross Domestic Product (GDP) in developed countries is accounted by the service sector. The major employment opportunities in developed and developing countries are also largely contributed by service sector (Breen & Crawford, 2004). Firms those operate in the services industry crossing international borders to continue providing their services to their clients. The services industry is characterized somewhat differently than manufacturing as sales are intangible, and depend more on people's education, experience, and ethics. The use of supply chain management, generally in business, and especially in the services industry is not mature yet globally. The practice of SCM is highest in banking sector whereas same is the lowest in hotel industry of Bangladesh. However there is a satisfactory level of practice of SCM has been evident from the study.

Table 6. Regression Analysis

TYPE	Model	Unstandardized Coefficients		Standardized Coefficient	t	Sig.	
		B	Std. Error				
Restaurant	1	(Constant)	3.558	.011		330.240	.000
		Internal Supply Chain Management	.280	.013	.422	22.015	.000
		Logistic Management	.250	.010	.522	26.197	.000
		Information Flow	.231	.007	.702	31.090	.000
		Capacity and Resource Management	.166	.010	.269	16.368	.000
		Customer Relationship Management	.078	.024	.069	3.216	.018
Hotel	1	(Constant)	3.580	.017		210.076	.000
		Internal Supply Chain Management	.273	.015	.767	18.657	.003
		Logistic Management	.196	.019	.349	10.174	.010
		Information Flow	.217	.035	.352	6.223	.025
		Capacity and Resource Management	.166	.021	.302	8.004	.015
		Customer Relationship Management	.078	.021	.229	3.678	.067
Hospital	1	(Constant)	3.568	.007		533.446	.000
		Internal Supply Chain Management	.276	.005	.702	53.174	.000
		Logistic Management	.266	.010	.299	26.871	.000
		Information Flow	.258	.010	.362	26.494	.000
		Capacity and Resource Management	.155	.005	.426	32.899	.000
		Customer Relationship Management	.076	.007	.119	10.241	.001
Bank	1	(Constant)	3.566	.007		528.876	.000
		Internal Supply Chain Management	.262	.007	.545	37.954	.000
		Logistic Management	.248	.005	.602	50.518	.000
		Information Flow	.237	.008	.359	30.517	.000
		Capacity and Resource Management	.155	.005	.358	31.788	.000
		Customer Relationship Management	.084	.007	.169	12.047	.000

Source: Primary, 2016

8. Conclusion

There is no unique definition for Supply Chain Management and service supply chain management globally. Researchers from different nations defined the same from their own perspective. Global economy

8.1 Recommendations and Suggestions

Five categories/factors have been reduced out of 36 practices listed down in the questionnaire to respondents. The practices of Supply Chain Management is evident in all sub sectors identified including Restaurants, Hotels, Hospitals and Banking sector of Bangladesh. Demand management practice is most inflectional in the service industry and Internal Supply Chain Management comprises of Supply Chain Benchmarking, Activity Based Costing, Elimination of waste/Unnecessary inventory level, Internal Supply Chain management, Material Requirement Planning, Distribution Resource Planning, Total Quality Management, Supply Chain Performance Measurement System is the most influential those influenced the response by the respondents. Basing on the analysis of the test results following recommendation and suggestions have been put forward:

Services Industry should continue the practice of Internal Supply Chain Management more satisfactorily.

The Industry should increase the practice of Customer Relationship Management, Information Flow, Capacity and Resource Management and Logistic Management of Supply Chain Management in order to ensure customer satisfaction.

Hotel, Restaurant and Hospital Industry of Bangladesh should improve the level of practice of SCM in order to become more customers responsive.

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