

A Survey of Supply Chain Management Practice and Performance in Bangladesh

Syed Shakil Ahmed*^α, Hussnain Ghafoor **^β, Md Rashedul Islam***^Ω, Md Mazharul Islam****^μ

^{α,β} Department of Logistic Engineering, Wuhan Textile University

^Ω Department of Chemistry and Chemical Engineering, Wuhan Textile University

^μ Department of Mechanical Engineering and Automation, Wuhan Textile University

DOI: 10.29322/IJSRP.8.10.2018.p8293

<http://dx.doi.org/10.29322/IJSRP.8.10.2018.p8293>

Abstract: Supply chain management (SCM) is new idea including the combination of all the esteem making components in the supply, assembling, and distribution forms, from raw material extraction, through the change procedure, to end-client utilization. The reason for this paper is to investigate the SCM exercises did by manufacturing organizations in Bangladesh. A postal review was completed to distinguish the status of SCM in Bangladesh and decide the issues in SCM that are critical for Bangladesh producers. The paper presents primer discoveries from this study.

Keyword: Supply Chain Management, Service Supply Chain Management Practices, Supply Chain Key Performance etc.

INTRODUCTION

Supply chain management (SCM) is a new theory with the combination of all the value-creating backgrounds in the supply, manufacturing, and distribution developments, from raw material concluded the alteration process to end user consumption. SCM exercises are roused by the objectives of client benefit, pressure of lead time, and stock decrease. SCM is encouraged extraordinarily by the latest in correspondence innovations, for example, the electronic data interchange (EDI) and the web [1]. This grants snappy correspondence of end-shopper request to the upstream phases of the supply chain.

Various articles have been distributed in the research literature pushing the standards of SCM [2-6]. Many case analyses [7-12] have been distributed, confirming the benefits of SCM. The inquiry emerges regarding the sum of this message has achieved the professionals. The exploration portrayed in this article was completed to evaluate the choice of SCM practices in Bangladesh. A short literature review is exhibited in the following segment. This is followed by primary outcomes of the investigation. In the last area, some finishing up comments are displayed.

LITERATURE REVIEW

New and Payne [13] have defined an experimental examination exploring the power interaction in supply chain (SC) partnerships. They found that the connections were deviated; contingent upon whether it was with upstream or downstream associations. Watts and Hahn [14] described on a study conceded out to evaluate the level and achievement of supplier progress programs. They observed these projects to be wide in scope and very pervasive (63%), particularly among the bigger firms reviewed. The main point of these projects was more to enhance the purchased items than to enhance the capacity of the supplier. Krause [15] completed a survey of firms on the level of supplier improvement exercises and on the advantages collected from the exercises. The reacting firms partook all the more regularly in constrained inclusion, for example, supplier assessment and comment, site visits, demands from enhanced execution, and guarantees of expanded present or future business than in broad association, for example, preparing/instruction of suppliers' work force or interest in suppliers' tasks. While the suppliers' advancement endeavors were for the most part productive, the purchasing firms were not exceptionally happy with the outcomes. From this examination, Krause [15] recommended a three-pronged way to deal with competition, business motivating forces, and direct association in supplier's operations.

Galt and Dale [16] examined ten associations in the U.K. and found that they were attempting to diminish their supplier base, and to enhance their interchanges with the supplier desperately. Fernie [17] completed a global examination of SCM in basic supply retailing businesses. He discovered critical contrasts in stock held in the SC by the U.S. and European basic need retailers, which could be clarified by their SCM acceptance. In a comparative

vein, Tan et al.[18] looked for a connection between firms' SCM practice and their acts. They could demonstrate a positive and significant correlation between sure SCM practices and acts of their respondent firms. Kwan [19] examined the utilization of information technology (IT) in SCM in Singapore hardware and compound businesses, and found that the main two SCM methodologies were: 1) to position coordination as one of the center capabilities inside the organization, 2) to create to demand as opposed to forecast. The top obstruction to its utilization was an absence of education and training.

Despite the fact that there is a lot of distributed literature that clarifies or lectures SCM, there is a relative absence of exact investigations looking at SCM practices and their effects. As far as anyone is concerned, there is no distributed investigation of SCM practices in Bangladesh. There is some investigation regarding GSCM impact and practices [20, 21]. Notwithstanding, past investigations [22] have discovered that Bangladesh producers were by and large lingering behind in the use of new ideas in assembling. Chowdhury, Alam and Habib [23] explored SCM practices in the services industry of Bangladesh which incorporates the service industry's training idea, job and factors may constrain the acts of SCM. They discover, Internal SCM impacted the reaction most and the services firms confront the serious difficulties to satisfy the responsibility of the customers because of astonishing political conflict, sudden work distress, port carelessness, custom improvidence, bureaucratic issues, absence of utilization of innovation, import reliance for raw materials, less work efficiency estimation and so forth. From these investigations, the predominance of SCM in Bangladesh isn't exceptionally encouraging, yet it is surely important to look at how well Bangladesh firms are doing here.

SURVEY

The essential objective of the research reported in this paper was to benchmark SCM practices in Bangladesh. A survey methodology was received.

THE RESPONDENTS

A survey questionnaire was sent in May 2017 to the 357 biggest Bangladesh manufacturing associations with a demand to forward it to the individual responsible for coordination in that association. In the end 97 usable reactions were gotten (27.17% response rate). Half (47%) of the respondents were territorial/national business tasks contending essentially in Bangladesh. Worldwide business activities contending overall constituted 44% of the sample. The leftovers (9%) were nearby/city business activities contending among just local organizations. As far as their situation in the supply chain, the dispersion of the respondents is given in Table 1. The extent of the respondents claiming to practice some type of SCM was 87%. These respondents announced including the accompanying parts of the SC in their SCM exercises as given in Table 2. The most elevated extent is included with final products manufacturers. Predictable with the biggest group of the respondents (final product manufacturing), the vast majority of our respondents are associated with SC exercises instantly upstream or downstream of their situation in SC. Not very many of the respondents are engaged with recycling.

Table 1. Supply Chain Arranging of the Respondents

Position in the SC	Percentage
Natural Resource Manufacturing	9%
Component Manufacturing	13%
Ending Produce Manufacturing	51%
Distribution	27%

Table 2. SCM Activities of the Respondents

Supply Chain Modules	Percentage
Final Produce manufacturers	85%
Corporal distribution	81%
Wholesalers	69%
Component manufacturers	63%
Retailers	57%
Raw material manufacturers	46%

Final consumers	35%
Recycling	18%
Miners/raw material extractors	13%
Extraction from the Earth	5%

SURVEY FINDINGS

The respondents utilized a Likert scale (1 = Low, 5 = High) to assess the majority of the things in the survey. The average responses and discussions are presented below.

Corporate strategy and SCM issues

The respondents were given 25 issues in SCM exercises and requested to assess their significance. The best ten issues recognized by the respondents are given in Table 3. It creates the impression that time pressure and between firm correspondences parts of SCM are of the most vital to the respondents.

Table 3. Top Ten Issues in Supply Chain Management Activities

SCM Issue	Average Importance Rating
On-time delivery of the association's items directly to the clients' purposes of utilization	4.65
On-time delivery of the purchased materials straightforwardly to the company's purposes of utilization	4.56
Deciding clients' future needs	4.51
Increasing the firm's Just-In-Time (JIT) capabilities	4.01
Enhancing the integration of exercises over the supply chain	4.01
Contacting the end clients of possessing items to get criticism on execution and client benefit	3.91
Lessening reaction time over the supply chain	3.89
Setting up more successive contact with individuals from possess of own supply chain	3.88
Making a more prominent level of trust among the SC individuals	3.85
Conveying the company's future vital requirements to the providers	3.83

The seven issues of the most bottom significance are introduced in Table 4. Clearly, there isn't much want to move to encourage SCM. SCM endeavors likewise seem constrained to the promptly close individuals from the supply chain.

Table 4. Issues of Least Importance in SCM Activities

SCM Issue	Average Importance Rating
Expecting providers to find nearer to possess firm	1.71
Use of a third-party SCM specialist	1.93
Locating closer to own customers	2.21
Stretching out possess SC to incorporate individuals past quick providers and clients	2.55
Making SCM groups that incorporate individuals from various organizations	2.72
Taking an interest in the sourcing choices of claim providers	2.78
Including all individuals from claim company's SC in possess item/benefit/marketing plans	3.15

Table 5 demonstrates respondents' view of the obstructions to accomplishing the maximum capacity or advantage of SCM in the respondent's organizations. As can be normal, Bangladesh's isolation from whatever is left of the world is viewed as the best obstruction in accomplishing SCM.

Table 5. Issues Obstructing Supply Chain Management

Interference to SCM	Average Rating	Importance
Providers' geographical distance from company's offices	3.05	
Absence of refined data framework for data sharing among SC individuals	3.01	
Absence of capacity in overseeing inventories all through the whole SC	2.98	
Company's absence of use inside the SC	2.87	
Absence of trust among SC part	2.71	
Trouble among SC individuals	2.66	
Absence of enthusiasm among claim providers or clients to take an interest in the SC	2.59	
Rivalry from other SC	2.51	
Clients' geological separation from possess offices	2.47	

Supply/Materials management issues

The level of the respondents who outsource essential materials, parts, sub- assemblies, and services is 51%. In average, there has been a 12% expansion in outsourcing exercises over the most recent three years. Additionally, the level of respondents associated with the outsourcing of maintenance, repair and operating supplies (MRO) remains at 41%, with just a 8% expansion over the most recent three years. Outsourcing does not appear to have grabbed hold yet in Bangladesh.

51% of the respondents had a partnership or vital union with their suppliers, and these respondents detailed an average of 35% expansion in the quantity of strategic alliance programs over the most recent 3 years. The level of respondents with a supplier certification program is 47%: 12% certifying the suppliers' items, 1% certifying the suppliers, and 35% certifying both the items and the processes. In certifying the suppliers, the suppliers ' own particular self-accreditation was utilized by 9% of the respondents, ISO 9000 quality standards were utilized by 38%, and 29% of the respondents utilized their organizations' own in-house certification program. The main ten issues recognized by the respondents in assuring that their suppliers ' items and services conform in with the details are given in Table 6.

Table 6. Top Ten Requirements for Suppliers

Supplier Conformance Issue	Average Importance Rating
Consistency with all necessities of the obtaining firm	4.27
Examining reasons for non-conformance and taking restorative activities	4.21
Guaranteeing that the providers' acquired item and materials fit in with their details	4.01
Guaranteeing that their quality strategy is comprehended, executed and kept up	3.99
Upkeep of sufficient records of all investigations and tests performed	3.95
Guaranteeing that critical procedures are completed under controlled conditions	3.87
Keeping up strategies to control and check the plan of the item	3.85
Keeping up satisfactory measuring and testing gadgets for investigation and testing	3.80
Setting up and archiving their quality framework	3.63
Furnishing their workforce with a composed investigation and testing directions	3.49

The respondents assessed 30 factors for their significance in the determination of a key/recognized supplier. The main ten components and their average significance rating is given in Table 7.

Table 7. Top Ten Factors in the Selection of Key Suppliers

Supplier Selection Issue	Average Rating	Importance
Capacity to meet conveyance due dates	4.71	
Pledge to quality	4.65	
Cost of materials, parts and administrations	4.29	
Cost of materials, parts and administrations	4.25	
Fair and successive correspondences	4.13	
Industry knowledge	4.07	
Promise to persistent enhancement in item and process	4.03	
Ethical standards	4.01	
Financial stability and staying power	3.97	
Provider has vital significance to the firm	3.93	

Internal operations

81% of the respondents had particular written quality designs and policies, with 54% being ISO 9000 certified. Nine percent had ISO 14000 (Environmental Management Standards) confirmation. None of the respondents were utilizing process capacity list (Cpk) for quality confirmation. The normal significance evaluations of eight item outline and advancement issues for the respondents are appeared in Table 8. Clearly, the respondents are unconcerned with the most recent item plan and advancement procedures, including early supplier involvement.

Table 8. Average Rating of Product Design Issues

Product Design and Improvement Issue	Average Rating	Importance
Use of quick product development and introduction time	3.27	
Standardization of component parts (trying to use more standard parts)	3.15	
Early Supplier Involvement (in your firm’s design efforts)	3.01	
Simplification of component parts (trying to use fewer parts)	2.79	
Use of Value Analysis/Value Engineering (deleting product parts and materials which don’t add value to the product)	2.73	
Use of concurrent engineering (concurrent design of prod./process)	2.69	
The use of Quality Function Deployment (the House of Quality model)	2.49	
Modular design of parts (for use in multiple product applications)	2.43	

Table 9 shows the significance put by the respondents on in just-in-time standards. The supplier- related standards are consigned to the base of the rundown.

Table 9. Significance of Just-In-Time Values

JIT Principle	Average Rating	Importance
Lessening stock, which thus opens up capital venture	4.35	
Lessening setup time	3.69	
Expanding delivery frequencies	3.49	
Lessening lot estimate	3.41	
Preventive upkeep	3.39	
Decreasing stock to uncover assembling and booking issues	3.37	
Diminishing provider base	3.27	
Purchasing from JIT providers	3.11	

The more specialized quality confirmation strategies, for example, statistical process control and particular outline of the items are not utilized much by Bangladesh firms, as prove in Table 10.

Table 10. Significance of Quality Practices

Quality Practice	Average Rating	Importance
Process enhancement (alteration of process)	4.14	
Top management correspondence of value objectives to the association	4.07	
Planning quality into the item	4.01	
Accentuation on quality rather than cost in the provider choice process	3.87	
Representative preparing in quality management and control	3.85	
Strengthening of shop operators to redress quality issues	3.85	
Review	3.83	
Utilizing benchmark information	3.45	
Considering manufacturability and get together in item structure	3.31	
Factual process control	3.06	
Utilizing standard segment parts	3.03	
Disentangling the item	3.01	
Particular plan of segment parts	2.57	

With regards to their own relationship with clients, our respondents' significance rating of the best ten (out of 24) issues is as given in Table 11. Conventional ideas of conveyance, delivery, quality, and customer handling are given the top billing.

Table 11. Significance of Top Ten Customer Service Issues

Customer Service Issue	Average Rating	Importance
The association's capacity to meet delivery due dates	4.81	
Nature of the items and services	4.73	
Fruitful goals of client objections	4.53	
Legitimate and frequent interchanges	4.41	
Being adaptable to meet the clients' changing necessities	4.34	
The firm's moral models	4.31	
Making it simpler for clients to look for help	4.27	
Assurance of future client desires	4.13	
Seeing how the clients utilize items and services	4.08	
Utilizing routine follow-up methodology for client request or dissensions	4.01	

Table 12 displays the five client service issues apparent as the slightest essential by the respondents. The thoughts in this rundown are regularly unequivocally supported by SCM intellectuals, yet unmistakably, they have not gotten a thoughtful hearing in Bangladesh.

Table 12. Least Important Customer Service Issues

Customer Service Issue	Average Rating	Importance
ISO 9000 confirmation	2.47	
The association's geographical proximity to possess provider's office	2.69	
Utilization of Electronic Data Interchange (EDI) correspondences	2.75	
Sharing of classified data	2.81	
Going into long term contract arrangements	3.35	

CONCLUSION

The extent of the respondents in our overview declaring to practice some type of SCM was very high (85%), mostly, it appears, with a view to enhancing time delivery. Data imparting to the suppliers, relocating nearer to providers/clients, or including all individuals from own firm's SC in item/benefit/promoting plans does not appear to be high on the motivation. As could be normal, the geological isolation of Bangladesh is viewed as the greatest barrier to SCM implementation.

About half portion of the respondents revealed utilizing outsourcing, strategic alliance with providers, or supplier certification programs. Measurable quality control isn't practiced particularly by the respondents, and is certifiably not a high prerequisite for the suppliers. In choosing suppliers, delivery and quality were high on the rundown of criteria, yet their eagerness or capacity to take after SCM practices were not high on the rundown. The different SC parts like suppliers, manufacturers, warehouses and stores ought to be coordinated in a solitary framework, which makes SCM more compelling. The group engaged with the operational side on taking care of the SC ought to be exceptionally prepared in SCM work. The visibility should be enhanced if supply can't be straight forwardly controlled. The coordinated effort with local partners, over the business and with universities is urgent to effectively overseeing social duty in supply chains. This segment should keep in a circumstance of political steadiness and a harmonious business condition. Political unrest and the unsettling influence are terrible for this sort of enterprises. Along these lines, Proper advances ought to be taken by the legislature to keep this part free from any sorts of aggravation. It is likewise important to enhance the customer relationship and organizational environment however it is giving great association condition.

It shows up from this review Bangladesh manufacturers are following a large number of the SCM ideas, predominantly where it impacts the capacity to meet delivery dates. In any case, there has not been much advancement with regards to further developed thoughts, for example SC teams, or information sharing, or use of EDI and so on.

REFERENCES

1. Lyytinen, J.D., Kalle, *The role of intermediating institutions in the diffusion of electronic data interchange (EDI): How industry associations intervened in Denmark, Finland, and Hong Kong*. The Information Society, 2001. **17**(3): p. 195-210.
2. Alvarado, U.Y. and H. Kotzab, *Supply chain management: the integration of logistics in marketing*. Industrial marketing management, 2001. **30**(2): p. 183-198.
3. Seuring, S., et al., *Sustainability and supply chain management—an introduction to the special issue*. 2008, Elsevier.
4. Walker, H., L. Di Sisto, and D. McBain, *Drivers and barriers to environmental supply chain management practices: Lessons from the public and private sectors*. Journal of purchasing and supply management, 2008. **14**(1): p. 69-85.
5. Chen, I.J. and A. Paulraj, *Towards a theory of supply chain management: the constructs and measurements*. Journal of operations management, 2004. **22**(2): p. 119-150.
6. Li, S., et al., *The impact of supply chain management practices on competitive advantage and organizational performance*. Omega, 2006. **34**(2): p. 107-124.
7. McLarty, R., *Case study: evidence of a strategic marketing paradigm in a growing SME*. Journal of Marketing Practice: Applied Marketing Science, 1998. **4**(4): p. 105-117.
8. Lee, H.L. and C. Billington, *The evolution of supply-chain-management models and practice at Hewlett-Packard*. Interfaces, 1995. **25**(5): p. 42-63.
9. Lambert, D.M., M.C. Cooper, and J.D. Pagh, *Supply chain management: implementation issues and research opportunities*. The international journal of logistics management, 1998. **9**(2): p. 1-20.
10. Grimsdell, K., *The supply chain for fresh vegetables: what it takes to make it work*. Supply Chain Management: An International Journal, 1996. **1**(1): p. 11-14.
11. Calza, F. and R. Passaro, *EDI network and logistics management at Unilever-Sagit*. Supply Chain Management: An International Journal, 1997. **2**(4): p. 158-170.
12. Arntzen, B.C., et al., *Global supply chain management at Digital Equipment Corporation*. Interfaces, 1995. **25**(1): p. 69-93.

13. New, S.J. and P. Payne, *Research frameworks in logistics: three models, seven dinners and a survey*. International Journal of Physical Distribution & Logistics Management, 1995. **25**(10): p. 60-77.
14. Hahn, C.K., C.A. Watts, and K.Y. Kim, *The supplier development program: a conceptual model*. Journal of Purchasing and Materials Management, 1990. **26**(2): p. 2-7.
15. Krause, D.R., R.B. Handfield, and B.B. Tyler, *The relationships between supplier development, commitment, social capital accumulation and performance improvement*. Journal of operations management, 2007. **25**(2): p. 528-545.
16. Galt, J. and B. Dale, *Supplier development: a British case study*. International Journal of Purchasing and Materials Management, 1991. **27**(1): p. 16-22.
17. Fernie, J., *International comparisons of supply chain management in grocery retailing*. Service Industries Journal, 1995. **15**(4): p. 134-147.
18. Tan, K.C., V.R. Kannan, and R.B. Handfield, *Supply chain management: supplier performance and firm performance*. Journal of Supply Chain Management, 1998. **34**(3): p. 2.
19. Hsu, C.-C., et al., *Supply chain management practices as a mediator of the relationship between operations capability and firm performance*. International Journal of Production Research, 2009. **47**(3): p. 835-855.
20. Toke, L., R. Gupta, and M. Dandekar. *Green supply chain management; critical research and practices*. in *Proceedings of the 2010 International Conference on Industrial Engineering and Operations Management, Dhaka, Bangladesh*. 2010. Citeseer.
21. Ahmed, S., T. Akter, and Y. Ma, *Green Supply Chain Management (GSCM) Performance Implemented by the Textile Industry of Gazipur District, Dhaka*. Logistics, 2018. **2**(4): p. 21.
22. Ray, S.K., et al., *Study on Supply Chain Management of Industries in FMCG Sector in Bangladesh*. Global Journal of Research In Engineering, 2016.
23. Chowdhury, A., M.Z. Alam, and M.M. Habib, *Supply Chain Management Practices in Services Industry: An Empirical Investigation on Some Selected Services Sector of Bangladesh*. International Journal of Supply Chain Management, 2017. **6**(3): p. 152-162.

First Author – Syed Shakil Ahmed, Masters in Logistics Engineering, Wuhan Textile University and E-mail: shakilwtu17@outlook.com

Second Author – Hussnain Ghafoor, Masters in Logistics Engineering, Wuhan Textile University and E-mail: hussnain.ghafoor@yahoo.com

Third Author – Md Rashedul Islam, Masters in Chemistry and Chemical Engineering, Wuhan Textile University and E-mail: rashedultex@outlook.com

Forth Author- Md Mazharul Islam, Masters in Mechanical Engineering and Automation, Wuhan Textile University and E-mail: mazharone1110@gmail.com

Correspondence Author – Syed Shakil Ahmed, email: shakilwtu17@outlook.com, alternate email: shakilwtu17@gmail.com, contact number: +8613036167680.