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## **Barriers of Implementing Green Supply Chain Management Bangladesh Perspective**

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### **Abstract:**

Implementation of GSCM is not facile. Various factors can thwart the process of implementing GSCM. In Bangladesh EPI is not at a good state, so GSCM is one of the must for sustainable process. Hence this study aims to find the barriers of implementing GSCM in Bangladeshi industries. A survey was conducted among supply chain professionals from different organizations. A sample of 34 professionals was randomly selected. This was a semi structured interview and the collected data were analyzed to estimate the priority of the potential barriers. Internal/ organizational factors were identified as the most effective and public/ customer related factors were the least ones. This study revealed the major barriers of GSCM implementation.

**Key Words:** GSCM, GSCM in Bangladesh, Barriers, Environment, Sustainability, EPI

**Introduction:**

GSCM practices are considered as material management, green purchasing, green manufacturing, green design, reverse logistics and green distribution/marketing that refer to the environmental integration of supply chain management with consumer's end-of-life management [1]. GSCM is gaining much importance in many industries due to pressure from the government and environment consciousness among the customers, to gain competitive advantages [2]. Environmental problems such as rapid depletion of resources, environmental pollution, global warming and decrease in biological diversity cause deterioration in the ecological balance. The fact that these ecological problems are increasing continuously leads governments, communities, companies and individuals to take precautions in environmental matters [3]. GSCM was created with the idea of inclusion of environmental thinking in supply chain management [4]. GSCM can reduce the environmental pollution and production cost which also creates competitive advantages in term of greater customer satisfaction [5]. As environmental performance index (EPI) ranking of Bangladesh is not good so it's difficult to implement GSCM properly here [6]. Here, we would find out the barrier of implementing GSCM in Bangladesh and ranked them. Reviewed a lot of papers to get a proper idea about the potential barriers and created a table (Table 1) for proper understanding.

**Research Question:**

What are the barriers of implementing GSCM in the industry of Bangladesh? And what is the comparative impact of these factors?

**Objectives:**

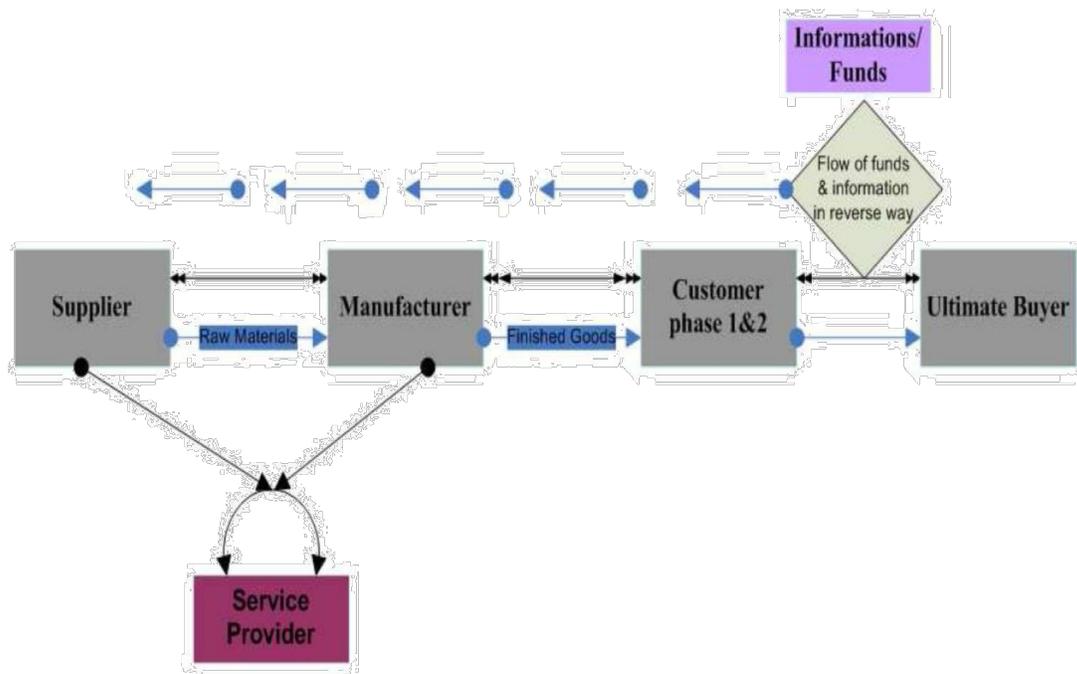
1. To discuss the barriers of implementing GSCM in Bangladesh.
2. To prioritize the factors.

**Theoretical Background:**Supply Chain Management (SCM)

A supply chain is a system of organizations, people, technology, activities information and resources involved in moving a product or service from supplier to customer [37]. Supply chain management is responsible for getting a product from an idea, to a prototype, to a store, to a consumer. It refers to everything involved in planning, controlling, and executing a product's flow, from start to end. This process is started with producers, retailers, service providers, manufacturers, distributors and end with providing customers the goods or services at proper time. Customer's satisfaction are always in the top priority in the whole supply chain processes.

Table 1 : Barriers investigated in previous researches

1.Lack of government support policies	[7], [9]-[11], [13]-[18]
2.Lack of government regulation and legislation	[10], [17], [19], [20]
3. Corruption	[10]
4. Market competition and uncertainty	[11], [13]-[18], [20]
5. Lack of demand and public awareness	[7], [9]-[11], [13]-[17]
6. Supplier's flexibility to change towards GSCM	[7], [9], [11], [13]-[20]
7. Lack of source of eco-friendly materials	[10], [20]
8. Poor organizational culture in GSCM	[7], [10], [11], [15], [16], [18], [20]
9. Cost of implementation for GSCM	[7], [9], [10], [13]-[18], [20]
10. Lack of corporate social responsibility	[11], [13], [19], [20]
11. Lack of top management commitment	[11], [13], [16]-[20]
12. Lack of management initiatives for transport and logistics	[7], [13], [15], [17], [20]
13. Lack of Organization Encouragement	[13], [14]
14. Lack of knowledge and experience	[7], [10], [13], [15]-[17], [19], [20]
15. Lack of skilled human resource in implementation of GSCM	[7], [9], [11], [13]-[16], [18], [20]
16. Lack of training in GSCM	[10], [11], [13], [15]-[18], [20]
17. Lack of acceptance of advancement in new technology	[7], [10], [11], [14-18], [20]
18. Lack of energy management and waste management of the organization	[7], [15], [16], [18], [20]
19. Lack of internal sustainability audits within the organization	[16], [18]
20. Lack of integration of IT system	[7], [11], [14]-[16], [20]
21. Lack of govt. rules and regulations	[21]-[22],[27],[32]-[35]
22.Customer interest toward GSCM	[21]-[25]
23. Customer interest to buy GSCM sourced goods	[36]
24. Society's awareness on Environment	[36]
25. Financial constraints	[21]-[22],[26]-[31]
26. Interest In investment	[36]
27. Nature of raw materials	[36]
28.Lack of sources of eco-friendly material	[36]
29. Poor supplier commitment	[21]-[22],[24],[32]-[33]
30. .Lack of global value chain integration	[36]
31. Buyers' outsourcing strategy	[36]



**Figure 1:** Basic Supply Chain [8]

### Green Supply Chain Management (GSCM) and Bangladesh perspective

Now a days moving into green is essential for sustainable development and also for better environmental condition. Green supply chain is related to the environmental and ecological efficiency of the industries [12]. Green Supply Chain Management (GSCM) can be defined as the management of the raw materials, parts/components and processes from suppliers to manufacturer to customers and product take back with improvement to environmental impacts through life cycle stages [37]. Environmental effect of every process in the supply chain management is under GSCM practice. The goal of GSCM is to achieve minimized waste, minimized environmental impact while assuring maximized consumer satisfaction, and healthy profits. Now a days Bangladesh is facing serious environmental problem all over the country where logistics and laws are not up to the mark to improve present condition. Green supply

chain will be a good solution for individual industries to reduce waste and improve environment all over the country.

### Environmental Performance Index (EPI) of Bangladesh

EPI measures the environmental performance of national protection endeavor in 178 countries. Bangladesh is a developing country. According to EPI (2020), Bangladesh had ranked 162nd out of 180 and was given 29.0 points in the list, securing their third worst position in South Asia region. Whereas, in 2014 Bangladesh overall EPI ranks 169 (Score-25.61) out of 178 countries, in 2012, her ranks at 115 out of 132 countries. The EPI explores 32 performance indicators across 11 issue categories. It's indicating that very poor green practices. EPI ranks evaluation indicates that Bangladesh performance is very weak.

### **Methods:**

- a) Study Subject: Some supply chain professionals from various industries in Bangladesh were selected randomly and being approached to take part in the study.
- b) Instrument and assessment: A questionnaire was developed, which contained the potential barriers to implement green supply chain management. The questionnaire contained a Likert type scale and two items for related information.
- c) Design and process: A survey was conducted among the selected professionals. Around 50 supply chain professionals in Bangladesh were being approached among whom 34 provided consent to take part in the study.
- d) Statistical tool: After collection, the data were analyzed to rate the barriers. Each factor was recalculated as relative importance index (RII) and a ranking was made according to the relevant value.

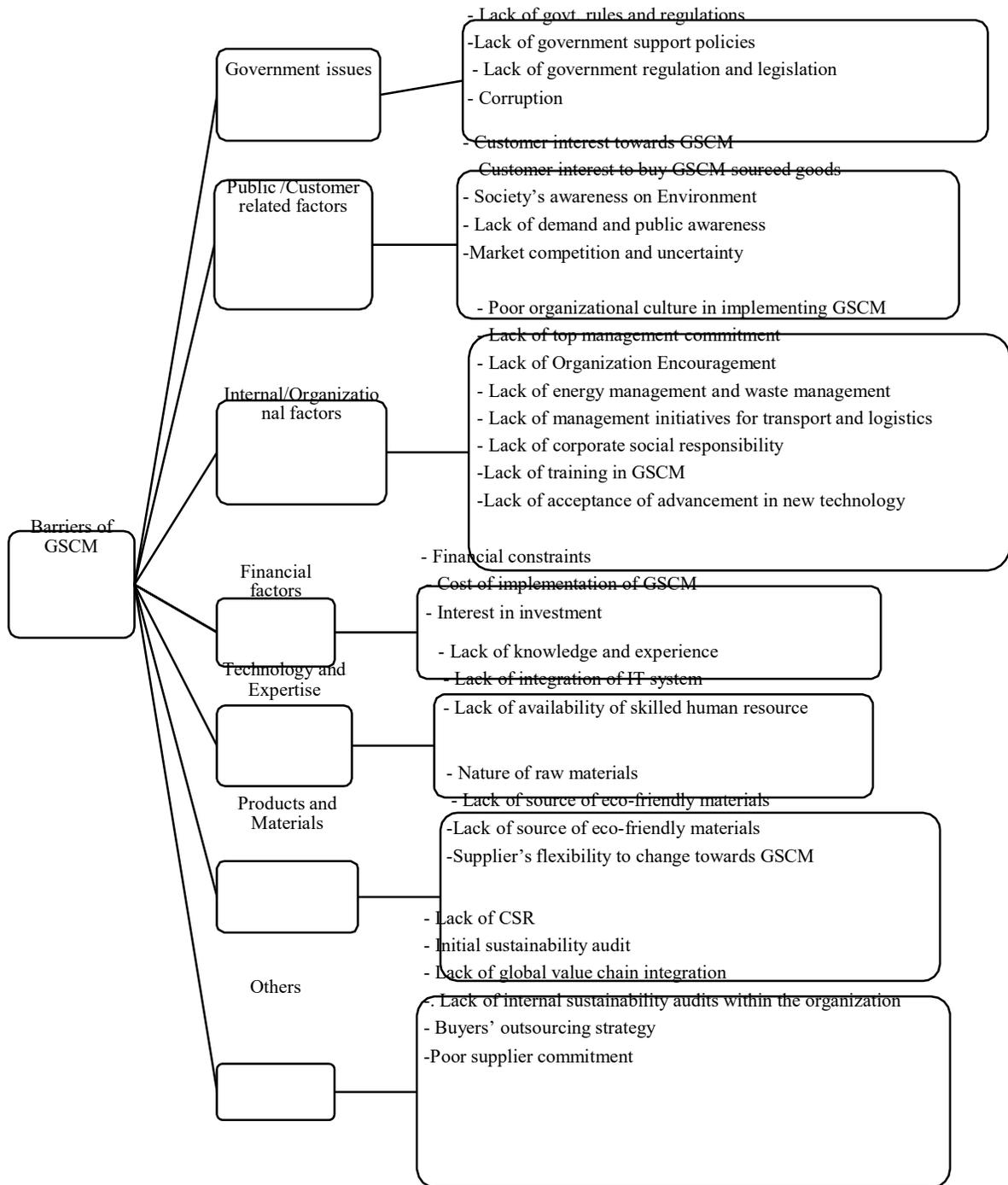


Figure 2: Classification of barriers of GSCM

Table 2: Ranking of the barriers investigated

Factors (Barriers)	RII	Rank
Internal/ Organizational factors	0.743	1
Government issues	0.728	2
Technology and Expertise	0.699	3
Financial factors	0.699	4
Others	0.691	5
Products and Materials	0.676	6
Public/ Customer related factors	0.494	7

### **Results:**

According to the conducted survey, among the respondents 12 (35.3 %) were less experienced, 15 (44.1 %) were medium experienced and rest were high experienced.

According to the value of relative importance index (RII), the barriers for implementing GSCM were ranked as Table.

The ranking table shows that internal/ organizational factors and government issues are the strongest factors and products and materials and public/ customer related factors are affecting least.

### **Discussion**

From the analyze we found the factors which have most impact when introducing GSCM in various industries in Bangladesh. The barriers may be different form industry to industry such as the major barriers in case of RMG sector may or may not be same of tannery industry. But the present study raveled the most effective barriers from the overall perspective. It may be helpful to take initial decisions for the policy makers and authorities.

In fact, this study has some limitations. As the time was limited, we have to hurry in the study.

This study was fully self-funded and the whole study was run by a group of undergraduate

students. So contact with professional and expert personnel was quite difficult. Hence a small number of respondents were take part in the survey. This study should be conducted in a large scale and specific industry should be targeted for more appropriate outcome.

GSCM is a modern management philosophy rather than just a trend. All of the factors like Lack of Organization Encouragement, lack of energy management and waste management, lack of govt. rules and regulations, lack of government support policies are very important. The rank orders in this study only indicate the priorities of the factors to remedy. That doesn't mean that only the top factors will be under consideration. Gradually all the barriers should be considered for proper implementation of GSCM.

Based on the study, it can be concluding that extortion of the major barriers are required government support besides the internal action. PPP may be a good alternative for this purpose to ensure sustainable development as well as to safeguard the environment.

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