

# Green Supply Chain Management an Exploratory Study

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**Green Supply Chain Management (GSCM) is one of the recent innovations for the enhancement of capabilities of Supply Chain Management. Research aims to study the various activities of the Supply Chain processes of the various Indian Manufacturing Industries i.e. both SME's (Small Manufacturing Enterprises) & Large Scale Industries & finds how much eco-friendly they are (i.e. how much % of the green factor are involved in their supply chain activities from the procurement of the raw material to the transportation of the final product) for the purpose of metering the performance of the manufacturing sectors has been studied. The major six activities of the supply chain; namely Green Sourcing & Procurement, Green Manufacturing, Green Warehousing, Green Distribution, Green Packaging, Green Transportation are being covered throughout the research. From these above process activities the performance of the various Indian manufacturing industries is measured with the help of various crucial performance indicators & their sub-indicators. Paper discussed the various environment factors affecting in the manufacturing sectors.**

**Keywords:** *Green Supply Chain management (GSCM) ; Green Sourcing & Procurement , Green Manufacturing , Green Warehousing , Green Distribution, Green Packaging ,Green Transportation.*

## I. INTRODUCTION

Green supply refers to the way in which innovations in supply chain management and industrial purchasing may be considered in the context of the environment. For example, during Green Supply Chain Management degradable item like plastic etc. should be avoided. Environmental supply chain management consists of the purchasing function's involvement in activities that include reduction, recycling, reuse and the substitution of materials. The practice of monitoring and improving environmental performance in the supply chain. Integrating environmental thinking into a supply chain management, including product design, material resourcing and selection, manufacturing processes, delivery of the final product to the consumer as well as end-of-life management of the product after its useful life.

Globalization and Greening the Supply Chain: Today's Globalization increases the opportunities for buyers. As buyers increase their focus on environment improvement, which increases the supplier environmental performance. It is true for organizations that regard environmental improvement as a social goal, not just an issue cost, risk and public image.

Manufacturers need to work with their suppliers of raw material and component, in order to produce environment friendly products. By using their purchasing power, the industries can set up environment criteria for their suppliers upstream in supply chain.

Supply chain management has traditionally been viewed as a process where in raw materials are converted into final products, and then delivered to the end-consumer. This process involves extraction and exploitation of the natural resources. It is important to note however that we live in a decade where environmental sustainability has been an important issue to business practice. The waste and emissions caused by the supply chain have become one of the main sources of serious environmental problems including global warming and acid rain. Green supply chain policies are desirable since reactive regulatory, to proactive strategic and competitive advantages. Green supply chain management (GSCM) is gaining increasing interest among researchers and practitioners of operations and supply chain management. The growing importance of GSCM is driven mainly by the escalating deterioration of environment, e.g. diminishing raw material resources, overflowing waste sites and increasing level of pollution. However, it is not just about being environment friendly; it is about good business sense and higher profit. The supply chain "system" includes Purchasing and In-bound Logistics (materials management), Production, Outbound Logistics (physical distribution & Marketing), and Reverse Logistics.

Ultimately it can result in the greening of the supply chain.

GSCM = Green purchasing + Green manufacturing/materials management + Green Distribution / marketing + Reverse logistics.

## II. LITERATURE REVIEWS

The concept of supply chain management has been observed as a recent and novel tool and the literature in green supply chain management has been growing in recent years.

- Rajesh Kumar and Rituraj Chandrakar (February 2012) Analyze One of the key aspects to green supply chains is to improve both economic and environmental performance simultaneously throughout the chains by establishing long-term buyer-supplier relationships.
- Ashish Kumar Bhateja, Rajesh Babbar, Sarbjit Singh and Anish Sachdeva (July 2011) Analyze by comparing various sectors with each other & finds out the leading and lagging sectors based upon the existing way of processes.
- Maruf Hasan (January 2013) : The study will investigate the kinds of environmental management practices that are undertaken by companies in greening the supply chain and how these practices affect the environmental and operational performance of the companies.

- According to Nimawat Dheeraj and Namdev Vishal (June 2012): Companies that have adopted GSCM practices with a focus on distribution activities have successfully improved their business and environmental performance on many levels. Today's also some of remaining companies have not adopted green supply chain management, due to this environmental performance index (EPI) ranking of India is not good. Today's environmental performance index (EPI) of India and the major four activities of the green supply chain management; namely, green purchasing, green manufacturing, green marketing and reverse logistics are being covered throughout the paper.
- According to Ram Bhool (November 2013): A green supply chain aims at confining the wastes within the industrial system so as to conserve energy and prevent the dissipation of harmful materials into the environment.
- According to Shrivastava (2007), organizational structure and systems are internal factors, whereas governmental regulation, social pressure, market pressures, and an environment-related norm are shown as external factors.

### III. OBJECTIVES

1. To study the various activities involved in the supply chain processes
2. To find out how much eco- friendly activities exist in GSCM
3. To suggest guidelines to prevent the environment from SCM
4. To identify the green factors which are involved in SCM

### IV. RESEARCH METHODOLOGY

Research is based on secondary data in which the exiting literature is reviewed. It is an exploratory cum descriptive research which focuses on knowing the environmental effects of SCM and identifying various activities included in SCM.

The main objective of research is observing the factor of green supply chain management of Indian manufacturing companies. The problem was selected on the gap identified in literature.

### V. LIMITATIONS OF STUDY

1. This study is based on the secondary data so it does not give accurate results.
2. The study is limited because the limited papers are studied.
3. Biasness is possible in this study.

### VI. FINDINGS

1. There are mainly six activities in GSCM which are Green Sourcing & Procurement, Green Manufacturing, Green Warehousing, Green Distribution, Green Packaging, and Green Transportation.
2. There a lot of industries which are not following GSCM concept due to cost factor.
3. If a comparison is done between lean and green manufacturing then later is more helpful in reducing Carbon Dioxide emission.

4. There is lack of awareness in India about GSCM because it is a new concept.
5. More than one third of Indian manufacturing sectors are using new technologies which are eco-friendly and reduce paper use.
6. Due to complexity and cost some firms are avoiding green SCM to implement.
7. GSCM is helpful in brand building by highlighting the public perception.
8. The new concept of 3R's (Recycle, Reuse, Recover) is helpful in promoting GSCM.
9. Adoption of GSCM is highest in those sectors where cost and efficiency are direct related to each other

### VII. RECOMMENDATION

1. Use of solar panels or green roofing panels should be encouraged in SCM.
2. The industries should adopt the strategies of Green Purchasing Network of India.
3. To encourage the Green Manufacturing in industries, redesigning of machines approach should enhance.
4. There should be a need of more focus on Reverse Logistics Philosophy.
5. Adoption of Green Marketing approach.
6. Use idle material as input of other activities.

### VIII. CONCLUSION

It can be concluded that GSCM is inevitable if the Earth is to be kept green and appropriate methodology may be adopted by the industries/services to minimize the detrimental effect on the environment. The study done has provided ample reasons for GSCM to be adopted as one of the important measures towards conservation of environment.

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