

## Green Supply Chain Management Practices in Indore

### District: An Empirical Study

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#### Abstract

Green Supply Chain Management (GSCM) is one of the recent innovations for the enhancement of capabilities of Supply Chain Management. Today's business scenario, infrastructural bottlenecks, increasing uncertainty of supply chain networks, shortening of product life cycles have forced companies to look beyond their four walls. All companies move towards increased global competitiveness, strategic issues surrounding supply management increasingly demands the attention of firms for cost reduction, increased quality, improved customer service which significantly elevates supply management stature within organizations. Green supply chain management (GSCM) captured the interest and imagination of academics since early 1990's after oil crisis and along with the rise of the hazards of air pollution to unhealthful levels has actually sparked businesses to become environmentally conscious. The present study examines the empirical study of green supply chain management practices in SMEs and Large scale industries. The study primarily identified the advantages and challenges associated with the implementation of green supply chain management.

**Key words:** Innovation, Bottleneck, Strategic, Environment, Conscious

#### Introduction

Green Supply Chain Management (GSCM) is one of the recent innovations for the enhancement of capabilities of Supply Chain Management. Green supply chain management (GSCM) captured the interest and imagination of academics since early 1990's after oil crisis and along with the rise of the hazards of air pollution to unhealthful levels has actually sparked businesses to become environmentally conscious. The economic growth increases the level of energy and material consumption, which contribute to the environmental issues and resource depletion problems. It has become increasingly significant for organizations facing competitive, regulatory and community pressures to balance economic and

environmental performance. Nowadays, most organizations are starting to go green in their business as concern to environmental sustainability. They have realized the greater benefit of the green supply technology adoption in business operation, which also affected suppliers and customers. Environmental issues under legislation and directives from customer especially in the US, the European Union (EU), and Japan become an important concern for manufacturers. As a result, Green Supply Chain Management (GSCM) emerges as a new systematic environmental approach in green supply chain management and has been increasingly accepted and practices by forward-thinking organization.

Green Supply Chain Management (GSCM) driver is that which adopt and implement the green practices and green image in manufacturing industries for minimizing the pollution which affect the human life. Today, environmental pollution is the main problem which mankind faces every day, the major emission of toxic gases is from the manufacturing industries. Because of the fact to overcome this problem and to reduce environmental pollution, the manufacturing industries include concept of Green to their supply chain. Environmental concern has become an important factor in manufacturing industries, thus they are in need of practicing supply chain concern towards environment which is also called as Green Supply Chain Management. A study conducted by **Kumarand Mohan** (2015) highlighted that GSCM also helps to sustain natural ecosystems and human populations with a high standard of living. This research conceptualizes and tests the dimensions of green SCM practice, competitive advantage, and performance dimensions. Data for the study was collected from 62 manufacturing organizations and the relationships proposed in the framework were tested using Partial Least Square (PLS) -Structural Equation Modeling and moderating effects through Sobel Test. The results indicate that green SCM practices have a positive impact on competitive advantage and performance of the manufacturing enterprises. However, **Sadia Samar Ali** (2015) explored Green supply chain performance measures framework for Indian Manufacturing Practices focusing on the green supply chain management (GSCM), reverse logistics, in particular, closed-loop logistics in the wake of the growing concerns about global warming and alarming consistent increase in amount of e-waste (comprising majorly of end-of-life ,EoL) electronic and electrical products. Green supply chain management GSCM ensures the optimal use of resources by integrating the concept of disposal, recycling, reusing or remanufacturing of

the product or its parts. Zhu and Sarkis studied the relationship between GSCM practices in Chinese manufacturing enterprises and their financial and environmental impact. The study found that there exists strong and positive relationship between GSCM practices and positive economic and environmental performance.

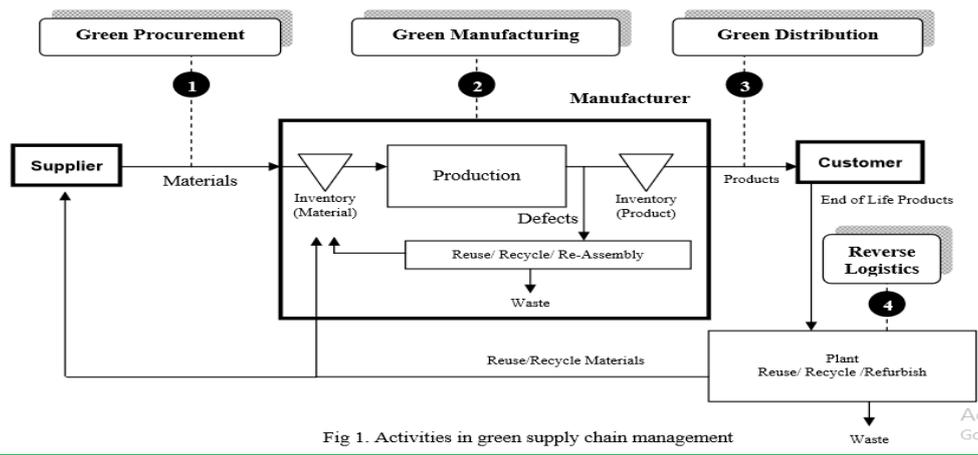


Fig 1. Activities in green supply chain management

Fig. Activities in Green Supply Chain Management

## Materials and Methods

The methodological aspects of the study to examine the green supply chain management in manufacturing companies. The study is based on both primary and secondary sources of data. We have adopted purposive sampling method where as per the objective and convenience 25 manufacturing companies are been selected. Factor analysis tool has been employed to identify the major factors in GSCM practices.

## Results and Discussion

Green supply chain management GSCM ensures the optimal use of resources by integrating the concept of disposal, recycling, reusing and remanufacturing of the product or its parts. Effective green supply chain management (GSCM) has become potentially valuable means to secure competitive advantage and improve performance of the firm in the global market place. GSCM also helps to sustain natural ecosystems and human populations with high standard of living. This research conceptualizes and tests the dimensions of green SCM practice, competitive advantage, and performance dimensions Ali (2015). From the results, it is found that the commonly adopted measures by most of the companies were

usage of renewable energy, green certification of production units/buildings, preventing wastage of electricity, improving efficiency of electricity by use of LEDs, etc. Some manufacturing companies also take initiatives such as tree plantation for carbon sequestration. Financial institutions (including banks) seem to associate their contribution in this regard by providing funds to firms investing in and/or using renewable energy in their operations at concessionary rates.

In this study only those factors were considered major factor which has Eigen value of 1 or more than 1. Explanatory factor analysis (EFA) was run to analyze the major factors of GSCM performance practices in manufacturing industries presented in table 1 below.

<b>Component Matrix<sup>a</sup></b>			
<b>Supply Chain Management performance practices</b>	Factor loading		
Reduction of air emission		0.59	
Reduction of Waste water		0.52	
Reduction of Solid wastes		0.54	
Minimize, reduce, or repurpose manufacturing waste		0.03	
Reduction of frequency for environmental accidents		0.09	
Reduction of cost for materials purchase		0.76	
Reduction of cost for energy consumption		0.30	
Reduction of fee for waste treatment		0.16	
Reduction of fee for waste discharge		0.57	
Reduction of investment		0.43	
Reduction of operational cost		0.48	
Reduction of training cost		0.99	
<b>Action Method: Principal Component Analysis.</b>			
<b>Components extracted.</b>			

Factor	Eigen value	Variation explained
		68.4

Source: Compiled from Survey Results

Factor analysis of 12 determinants and their likelihood to seek crop diversification was conducted by applying explanatory Factor analysis; the number of determinants data was reduced from 12 to 3 factors. Thus, 3 extracted factors explain 68 per cent of total variation. From the table, it is depicted that “decrease of fee for waste discharge”, “Increase of operational cost”, “Increase of training cost” were major practices for GSCM performance practices in manufacturing companies in Indore district.

### Conclusion

Green supply chain management as a new innovative managerial practice lead to both environmental and economic gains. But practicing green marketing initially seems to be a costly affair. Green SCM encourages green products/services, green technology, green power/energy; a lot of money has to be spent on R&D programs for GSCM practices to work. It has been observed that the implementation of GSCM practices is still in primitive stage except for a few manufacturers. On the basis of the data collected, it was found that the most preferred factor in green supply chain performance practices were decrease of fee for waste discharge, increase in operational costs and increase in training cost.

There is a need of encouragement and motivation of GSCM for implementing GSCM practices among the organizations as with increasing competition in today’s global market. The organizations have to look the modern strategic manners in order to gain sustainable organization and competitive advantage.

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