

# THE IMPACT OF INDIAN SME MANAGERS/OWNERS ON ADOPTING GREEN SUPPLY CHAIN PRACTICES

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## **Abstract**

**Purpose:** Green supply chain management (GSCM) is an increasingly important aspect in today's supply chain practices. Meeting environmental concerns in industrial operations has evoked interest among environmentalists, government bodies, academics and business organisations in recent years. However, current research indicates that SMEs are often focusing more on making profits than on saving the environment by adopting GSC practices. The purpose of this research is to investigate the current GSC practices in Indian SMEs, the drivers for SMEs to adopt GSC practices, the barriers faced by the SMEs in implementing such practices, and the impact of Indian SME managers/owners on adopting GSC practices.

**Research Approach:** The investigation used literature review approach to determine the current status of implementation of GSCM in Indian SMEs, and associated aspects of the same. Literature pertaining to the subject in context of Indian SMEs has been studied for the purpose of developing the paper. However, the research will be qualitative in nature using face-to-face interviews to collect the main data.

**Findings and Originality:** The study shows the initial investigation done through secondary data, which involved extensive literature review of the topic area. Since this is a work-in-progress research, the empirical data collection is in process by semi-structured interviews. Initial findings of the study show that in general, Indian SMEs have not done much in the adoption and implementation of GSC practices.

**Research Impact:** The main purpose of the research is to develop a conceptual framework for GSCM with a focus on the adoption of GSC practices of the Indian SME managers/owners in their firms. However this research will help increasing awareness among the Indian SME managers/owners about adopting GSCM practices in their organisations.

**Practical Impact:** Findings from this study could help SME employers not only in India, but also in other countries have a better understanding of the benefits of GSC practices and their impact on the performance of their firms. This paper contributes to the literature by providing empirical evidence on various aspects of GSCM in India.

**Keywords:** GSCM, Indian SMEs, SME managers/owners.

## **Introduction**

The environmental issues are becoming noteworthy concerns among the government, society and business organisation (Rozar, *et al.*, 2015; Rengarajan, *et al.*, 2015). Business organisations are considered to be the source of different environmental problems such as ozone depletion, global warming, solid waste and water and air pollutions (Rozar, *et al.*, 2015; Batra and Chanana, 2015). Since environmental concerns are becoming challenging concerns for business organisations,

government is implementing strict rules and regulations to control such situations (Batra and Chanana, 2015). Although environmental issues are considered important for business, its foundation in supply chain management (SCM) has been developed most recently (Singh and Bhardwaj, 2013). Waste and carbon emissions caused by the supply chains operations of companies have become the main source of environmental pollutions (Raman, 2014).

Many organisations are investing and implementing green practices and their approaches in their business processes and the way to sustainability begin with the supply chain (Batra and Chanana, 2015; Bhool and Narwal, 2013). SCM according to Adarsha and Prathap (2013) is the coordination and management of a complex network of activities involved in delivering a finished product to the end-user or customer. Environmental issues throughout the supply chain give rise to a new concept of green supply chain (Batra and Chanana, 2015; Lakshmi and Visalakshmi, 2012) that aims to reduce waste, conserve energy and prevent dissolution of harmful materials in the environment (Dashore and Sohani, 2013). However, green supply chain management (GSCM) is the recent innovation in preserving environment and improving the organisations efficiency and profitability (Raman, 2014). Therefore, adopting green supply chain practices (GSCP) in developing countries like India will help to achieve organisational excellence (Raman, 2014). The main objective of this work is to identify the current GSCP in India, the drivers for Indian SMEs to adopt GSCP in their businesses, the various barriers that they face in implementing these practices and the impact of Indian SME managers/owners on adopting GSCP. Three research questions (RQ) will guide this research:

*RQ1. What are the drivers that are motivating the Indian SME employers to adopt GSCP in their business?*

*RQ2. What are the current barriers that are faced by the Indian SME employers in implementing GSCP in their regular business processes?*

*RQ3. What is the main impact of Indian SME managers/owners on adopting GSCP?*

GSCM has become an interesting topic for the researchers and the practitioners of operations and SCM. From the past literature it is evident that most of the researchers focused on studying GSCM practices and their implementations in developed countries like UK, Japan, Germany and Taiwan and so on, whereas, limited studies have been done on developing countries, mostly the Asian countries like India, Malaysia, and China and so on (Seman *et al.*, 2012). To find the integration of the environmental concepts and SCM most of the researchers have conducted their studies on the developed countries whereas, little attention has been given on GSCM issues faced by the developing countries especially some of the Asian countries. In developing countries as highlighted by Anbumozhi and Kanada, (2005), green practices are adopted by the business organisations to reduce the negative effects of the environment rather than making it a proactive approach to reduce the sources of waste or pollutions. Therefore, there is a need to do more research and study on the adoption and implementation of green practices in the developing countries.

In the context of Indian SMEs, a handful of studies have highlighted the issues related to GSCM as this issue have not geared up effectively in India. The Indian government is still struggling a lot to implement the green practices in the business processes among the Indian SMEs. There have been few researches done on the barriers in adopting GSCP and how these barriers affect the competitive advantage of the industries. This research has identified few journals on GSCM, GSCM in India and Indian SME managers/owners that were published in between 2000 to 2015 from which very few journals were found relevant to the study that showed lack of maturity in literature and research in Indian context.

## Literature Review

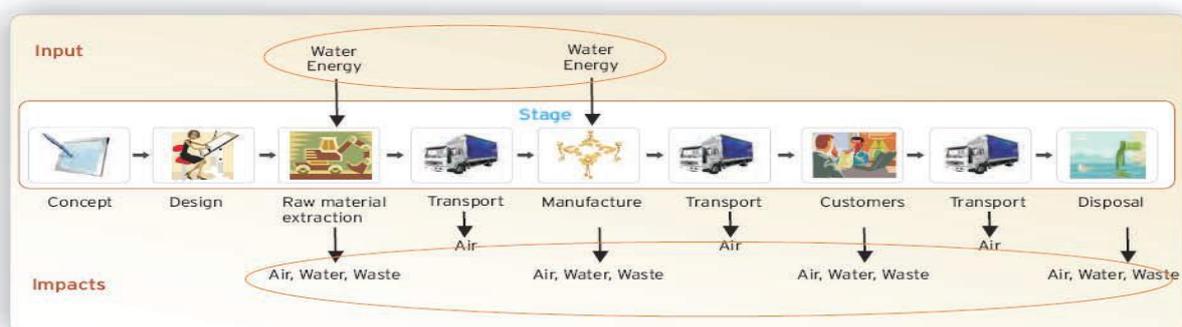
Literature review is that part of the study that helps to find out the research gap. The main purpose of literature review is to provide background information on the issues that are to be considered in this paper and to emphasize the relevance of the present paper.

### **Green Supply Chain Management (GSCM)**

The word Green is used for being eco-friendly and it enclose concerns like land, water and air pollutions, energy efficiency and its usage, waste generation and recycling. The main intension of going green is to reduce the impacts of human activities on the environment (Batra and Chanana, 2015). There are numerous definitions of GSCM as given by different researchers and the academicians. According to Khushbu and Shah,(2014:1657), “GSCM is a modern management approach where supply chain is a combination of economy and ecology”. Adding the ‘Green’ component to SCM, addresses the influence and the relationship between SCM and the natural environment (Singh and Kumar, 2015; Srivastava, 2007). Srivastava, (2007: 54), defines GSCM as, “integrating environmental thinking into supply-chain management, including product design, material sourcing and selection, manufacturing processes, delivery of the final product to the consumers as well as end of life management of the product after its useful life”.

Organisations worldwide are continuously using toxic chemicals, harmful packaging and transportation practices that produce harmful gases creating global warming (Raman, 2014). GSCM in today’s competitive world has emerged as an innovative approach to achieve both financial and environmental benefits for the organisation by reducing environmental risks and its impacts (Seman *et al.*, 2012). GSCM is thus an approach that helps the organisations to become environmentally sustainable (Zhu *et al.*, 2005, Gardas and Narkhede, 2013:442). As shown in figure 1 at every stage of supply chain there is pollution in terms of air, water and waste. The main reasons to adopt green practices in business are to save resources, eliminate waste and to improve productivity (Hajikhani *et al.*, 2012). In effect the word ‘green’ is very powerful, if attached to each element of a supply chain and its associated technologies it can help the world move towards a self-sustaining environmental system (Gardas and Narkhede, 2013:441).

**Figure 1: Stages of Supply Chain**



Source: Creating a Green Supply Chain – Cognizant (Raman, 2014).

The implementation of GSCM practices is expected to result in improved environmental performance which is measured by reduction in air emissions, effluent waste, solid waste and the consumption of toxic materials (Green *et al.*, 2012). Over the last decade or so, the literature on GSCM has grown considerably. The theories and empirical research to date has explored the implementation and effects of such practices on various components such as on organisations performance, finance,

operations and environments but the impact of managers/owners on adopting GSCM practices is arguably preliminary and the question still remain.

### **GSCM in Indian SMEs**

GSCM is a new concept in the recent literatures. Although businesses have come to understand the importance of GSCM, literature on environment friendly supply chain is still limited. In developed countries, although GSCM is in the primary stage of development it has delivered significant results – both economically and environmentally, these gains are still waiting in developing countries like India (Sarkis *et al.*, 2011).

Rapid industrialisation in India has led to enormous consumption of resources. This in turn is generating immense amounts of wastes of various types, and only three per cent of this is recycled in authorised recycling facilities (Soda, *et al.*, 2015). The status of pollution and waste created by the industries in India, calls for immediate adoption of GSCM measures (Bhattacharya *et al.*, 2011); and for this reason the importance of adopting green practices in India is seen as perhaps greater than anywhere else.

Small and medium-sized enterprises (SMEs) have always been the backbone of Indian economy, and they are a highly vibrant and dynamic sector of India over the last five decades. The government of India enacted the Micro, Small and Medium Enterprise (MSME) Act 2006 and as per this act manufacturing SMEs are defined as per their investments in plant and machinery: Small Enterprises (above \$62500 & up to \$ 1.25 million) and Medium Enterprises (above \$1.25 million & upto \$2.5 million) and service SMEs are defined as per their investment in Equipment's: Small Enterprises (above \$25000 & up to \$ 0.5 million) and Medium Enterprises (above \$0.5 million and upto \$1.5 million)

The growth of SMEs in Indian market remains handicapped as it operates in a very challenging environment. In spite of being the backbone of the Indian economy not much has been done for its growth and development. Since this sector remains small, unorganised and unregistered to avoid taxes and various other regulations the biggest challenge faced by them is financing and technological development (Economic Times survey, 2013).

However, greening of supply chain in the SME sector need more attention and should be taken up more seriously than ever before. Spreading of GSCM measures has become difficult in India due to the lack of willingness by the SME sectors to move away from their traditional methods. Lack of knowledge among the top management of the SME sector in India has delayed the adoption of GSCM practices in this sector (TERI, 2013). According to Sarkis *et al.*, (2011), there are lot of opportunities for research in the field of GSCM and still there are lot of aspects that remain unexplored.

### **Indian SME Employers:**

SMEs are mostly started by single entrepreneur or by a small group of people which are generally managed by the owners or the managers (Ritchie, 1993). The organisational structure of SME is mostly flat and do not have multiple layers as it consists of only small number of employees, supervisors or specialised employees. SMEs have several advantages at operational level such as it is flexible, sustainable, informal and adoptable whereas larger firms are deprived of such benefits (Saini and Budhwar, 2008). The working practices adopted by SMEs are typically influenced by the owners, managers or the managing directors. The owners or managers' personal attitudes and behaviours set the tone of the business and norms to be followed by the employees.

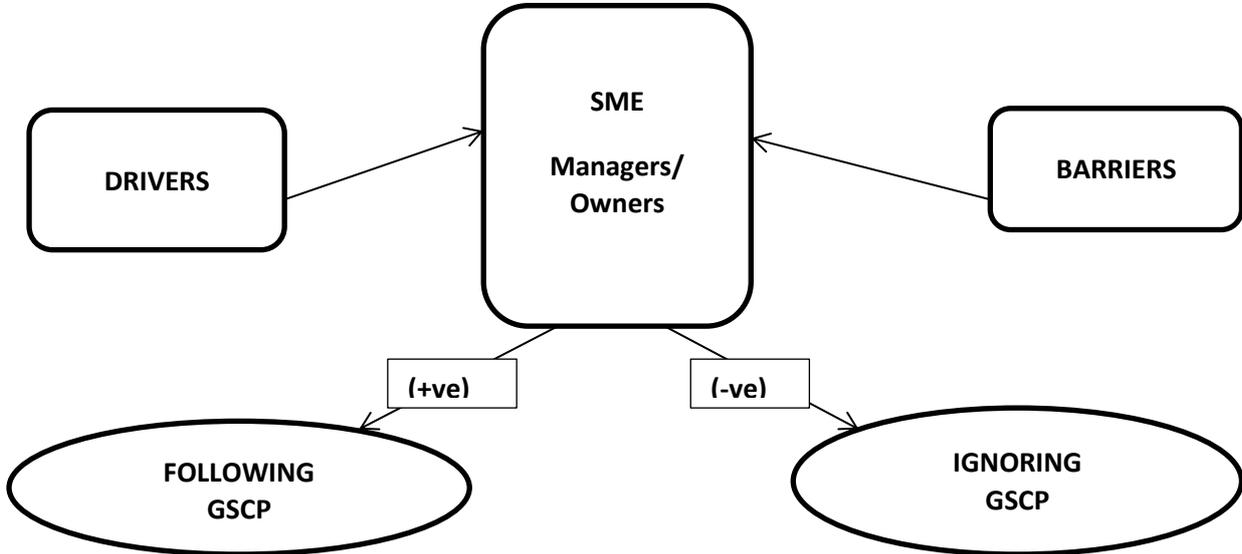
The main focus area of this research is to investigate the impact of Indian SME employer towards adopting GSC practices. In small businesses owners or the managers affects and enhance the organisations performance which help the people to work together to achieve the common goals and objectives (Nanjundeswaraswamy and Swamy, 2015). According to Fang *et al.*, (2009), a good managerial style can affect organisational commitment, work satisfaction and work performance positively. However, it reveals that a good managerial skill can affect parameters like employees’ job satisfaction, working environment, any organisational change, performance, etc. Success of SME highly depends on its mangers/owners.

At present Indian SMEs are facing lot of barriers but the most important barrier faced by Indian SMEs is their adoption to changes. Indian government is encouraging green practices among the SMEs but the barriers faced by the SME sectors are making the adoption of green practices difficult. The researches done by the researcher’s shows the lack of literature on this issue in context of Indian SMEs. However, this research is focusing on generating valuable literature on the employer issues in adopting green practices in their regular business operations. SME employers finds it difficult to adopt changes, this research will highlight the aspects that are making adoption of green practices difficult for the SME employers and how they are dealing with such situations.

**Proposed Framework:**

On the basis of the preceding discussion and the synthesis of the existing literature, conceptual framework is proposed as shown in figure 2. The proposed study is focusing on the main drivers and the issues in adopting the green practices by Indian SMEs and the impact of Indian SME mangers/owners on adopting GSC practices. The framework is developed to identify the results (See Figure 2).

**Figure 2: Conceptual Framework**



In this research paper various barriers and drivers of GSCM were identified based on the GSCM literature which has been utilised to expand understanding and knowledge of this research field. However, the main issue of the research remains unidentified as the researcher is still developing the questionnaire and will soon start collecting data to answer the issue.

### **Initial Findings:**

The initial findings of this research are based on secondary data collected through journals on Indian context. There are many researches done on analysis of barriers of GSCM in India. The target population is primarily the extensive literature review of papers related to GSCM in India. There are many barriers faced by SMEs in India during implementation of GSCM. About 20 barriers were identified in this paper which is commonly stated by different authors in their respected papers. The table 1 below gives the list of barriers faced by Indian SMEs:

**Table 1: Barriers of GSCM in India**

<b>Serial No.</b>	<b>Barriers to implement GSCM</b>
1	Lack of integration of IT systems
2	Lack of acceptance of advancement in new technology
3	Poor organizational culture
4	Lack of skilled human resource professionals in sustainability and GSCM
5	Uncertainty and competition in market
6	Lack of government initiatives system for GSCM practitioners
7	Poor implementation of green practices within a supply chain
8	Lack of top level management commitment
9	Cost of implementation for GSCM
10	Unwillingness of Supplier's to change towards GSCM
11	Customer's unawareness towards GSCM products and services
12	Lack of knowledge and experience
13	Lack of green architects, consultants, green developers, contractors in the region
14	Lack of training in GSCM
15	Lack of internal sustainability audits within the organization
16	Lack of external sustainability audits for suppliers and contactors
17	Lack of sustainability certification like ISO 14001
18	Lack of professional treatment and long term contracts for adopting GSCM from government
19	Lack of management initiatives for transport and logistics
20	Lack of energy management and waste management of the organization

Adapted from: Khushbu and Shah, 2014 and Dashore and Sohani, 2013

The table 2 below identifies the different drivers that are motivating GSCM in Indian SMEs, however 16 drivers are identified in this paper:

**Table 2: Drivers for GSCM in India**

<b>Serial No.</b>	<b>Drivers for GSCM</b>
1	Certification of suppliers' environmental management system
2	Company's environmental collaboration with their suppliers
3	Reduction and elimination of product's harmful environmental impacts by collaborating between product designer and suppliers
4	Government regulation and legislation, like making transparent reward system for green practitioners
5	Green product design
6	Standard quality certifications like ISO 14001
7	Integrating total quality environmental management into planning and operation

	processes
8	Reducing energy consumption and confining wastes
9	Reusing and recycling materials and packaging
10	Environmental collaboration with customers and making them environmentally aware
11	Reverse logistics and feedback system
12	Establishing company's green image locally and globally
13	Cost of environmentally friendly goods
14	Cost of environmentally friendly packages
15	Supplier's awareness and advances in providing environmentally friendly packages
16	Sharing best green practices

Adapted from: Dashore and Sohani (2013)

The above tables – 1 and 2, helps us to answer RQ1 and RQ2 which were identified through literature review, since this research is an on-going research work, these tables will be further developed at the time of data collection. In order to identify RQ3 it is important to know the basics of Indian SMEs and how they work.

However, the RQ1, 2 and 3 will be further identified by undertaking qualitative methodology using semi-structured interviews to achieve and investigate the research problem. The nature of the research questions and problems as well as the relatively small sample size makes qualitative approach the most suitable for this type of research. In other words, qualitative approaches flexibility and its applicability on exploratory researches were the main reasons behind adopting such approach in our research.

In order to investigate the impact of SME managers/owners on adopting GSCM practices in India about 20 SMEs are selected as the study population. The purposive sampling was used in the selection process because the researcher targets the subjects who have the expertise or information that are important to the study. The data collected will be analysed using thematic analysis as this method will enable the researcher to analyse and interpret data more effectively and efficiently to drive the results.

However, the initial findings of the research are based on the secondary data collected as the primary data collection is still under process. The questionnaire are finalised and the list of prospects to be approached is under process.

### **Conclusion:**

As discussed this research will focus on the GSCM issues faced by Indian SMEs in particular how employers of the Indian SMEs respond to corresponding GSC practices when they are being asked to implement them. This paper presented here summarises the literature that has been reviewed so far for this study.

This research has highlighted the key barriers towards adopting GSC practices such as lack of skilled human resources, lack of government initiatives system, lack of knowledge and experience and so on and the driving factors such as certification of suppliers' environmental system, designing green product, reusing and recycling materials and packaging and so on, that affect the SME managers/owners towards the adoption of green practices and developing a framework to help guide the Indian SMEs to change the situation.

As this is an on-going research the data have yet to be collected. This research focus on collecting qualitative data through semi-structured interviews, and the finalisation of the interview questionnaires are in process. However, thematic analysis will be used for analysing the qualitative data in its best way.

Most of the literature on GSCM are relatively recent, this means that we are at the growth stage of GSCM. The Environmental Performance Index (EPI) rank of India is very poor, which shows that there is tremendous scope for GSCM in India and the green awareness in India is below average, which indicates that there is need to spread GSCM awareness among the Indian industries which may improve the economic performance and improve environmental pollutions. However this research will help increasing awareness among the Indian SME managers/owners about adopting GSCM practices in their organisations.

The findings of the study are expected to recommend new solutions for the SMEs and practitioners in the area of GSCM in India and in other developing countries, and to assist interested researchers and academics in the field.

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