

# CHALLENGES AND OPPORTUNITIES FOR GREEN SUPPLY CHAIN MANAGEMENT

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## **Abstract**

Environmental problems have attracted public attention considerably within the last two decades. Environmental problems are increasing and traveling quicker than a fire, country to region, region to world level territory. This is a serious cause of climate change and global warming. The purpose of this study is to understand influences nature of motivation in relating green supply chain management practices effects towards organization performance. The paper focuses on various GSCM factors like internal environmental management, green purchasing, customer cooperation with environmental considerations, eco design and investment recovery, and company performance in terms of environmental performance, operational performance, and financial performance.

**Keywords:** Green Supply Chain Management, Innovation and sustainable, Green manufacturing (GM), Environmental, Green Procurement, Green Product Development, Green operations

## **Introduction**

Environmental issues have attracted public attention significantly in the last two decades. Manufacturing companies around the world, particularly in emerging economies, have an increased awareness of green concepts and attempt to adopt environment-friendly practices.(Abebaw, H., and Virdi, S. S.,2020) Furthermore, the green practices have to be told to the various industries to mitigate and minimize the negative environmental impact. Therefore the employees must be aware of the green practices so that it will encourage everyone to cooperate in it(Syakila, N, 2017) Green Supply Chain Management (GSCM) as a concept is gaining its pace, and in a broader sense, there have been works in the areas of research opportunities in GSCM(Pol, D and Sambrani, V,2017) Not only that, green supply chain management is a progressively widely-diffused practice among companies that are seeking to improve their environmental performance. As such, green supply chain management is important in influencing the total environment impact of any organizations involved in supply chain activities (Shariff, S.,2017)

Table 1: Difference between conventional and green supply chain

Characteristic	Conventional supply chain	Green supply chain
Output	Economic	Economic and ecological
Impact on environment	Could be positive or negative	Low negative impact
Supplier	Short-term relationship and focus on cost	Long-term relationship and focus on environment
Speed	High	Low

Source:<https://www.semanticscholar.org/paper/Sohaib-Ahmed-Nasir-Green-Supply-Chain-Practices-For/fc0ad99a0c8262129c1b6e1cb06f1c0cf22d2b77>

Green Supply Chain Management drives value creation across a supply chain to reduce environmental effects. Improved environmental performance means lower waste disposal and lower overhead costs.(Govil, A.2019).

**Review of Literature**

Kurian, J.(2018) The objectives of this paper were to identify the current green supply chain management practices and their influence on the environmental performance of the firms belonging to the pharmaceutical industry in India. The paper is based on a survey conducted among senior executives of the pharmaceutical industry in India.Awasthi, A., & Srivastava, S. K.(2019) More and more organizations are involved in green supply chain practices to sustain business market competition, achieve customer loyalty, improve brand image, and minimize negative environmental impacts. Examples of these practices are green design, green purchasing, green manufacturing, green packaging, green logistics, and green marketing. In this paper, we investigate barriers in green supply chain management and identify the ‘critical’ or ‘vital’ using Pareto analysis. Srivastava, S. K.(2007) There is a growing need for integrating environmentally sound choices into supply-chain management research and practice. Perusal of the literature shows that a broad frame of reference for green supply-chain management (GrSCM) is not adequately developed. Regulatory bodies that formulate regulations to meet societal and ecological concerns to facilitate growth of business and economy also suffer from its absence. Lamba, N., and Thareja, P(2017) The vision behind provision of eco-friendly products/services in the manufacturing sector is conceptually associated with sustainability. Such thinking solicits a deeper intervention with the implementation of green – environmentally friendly practices throughout the supply chain.

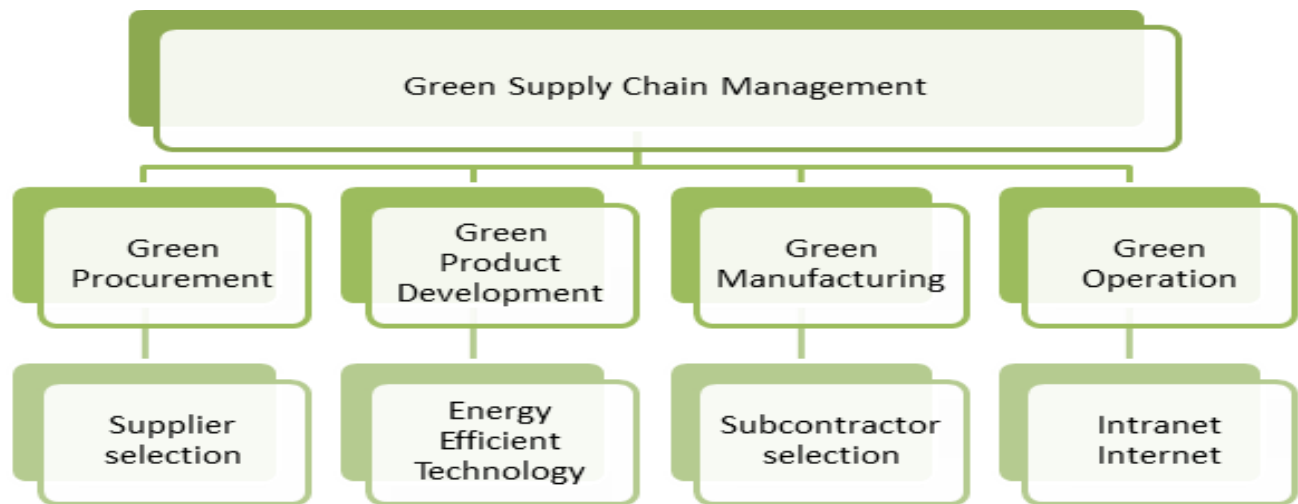
Nadeem, K., and Siddiqui, D. A.(2019) The aim of this study is to find out the direct impact of competence of strategic supply chain orientation, strategic environmental orientation and institutional pressure on Green Supply Chain Management (GSCM) and to overall performance. The data gathered from executives of 66 manufacturing firms of Pakistan. On the one hand, the

relationship between strategic orientations of the environment, supply chain, institutional pressure, and adoption of GSCM practices is examined on the other hand GSCM practices, and its relationship with performance measures including Customer Effectiveness, Environmental Differentiation, Economic Performance, Operational Efficiency and Social Performance is examined. Sarkis, J (2007) This paper provides an overview of environmental (green) supply chain management. The overview includes a categorization of research and practice in purchasing, manufacturing, outbound, and reverse logistics dimensions.

**Green Supply Chain Management (GSCM)**

The concept of GSCM is to integrate environmental thinking into supply chain management (SCM). As such, GSCM is important in influencing the total environmental impact of any organizations involved in supply chain activities. More importantly, GSCM can contribute to sustainability performance enhancement (Chin,2015) This includes product design, material sourcing and selection, the manufacturing process, delivery of the final product to consumers, and end-of-life product management(https://www.bpir.com) Instead of simply attempting to mitigate the environmental impact of the supply chain, GSCM involves driving value creation throughout the supply chain organizations to reduce total environmental impact(https://www.designingbuildings.co.uk) Green Supply Chain Management (GSCM) is now considered as a main part of organizational strategies to become environment-friendly and socially responsible, and to fulfill the customer demand and meet government compliances(Sharma, S., and Jain, V,2014)

**Figure 1: Green Supply Chain Management**

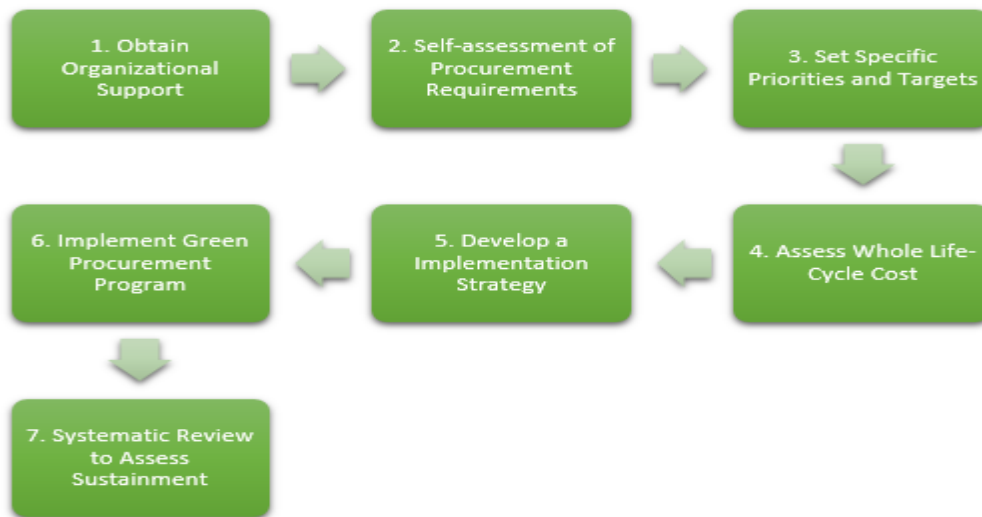


Source: <https://sites.google.com/site/yizhang919/green-supply-chain>

**Green Procurement**

Green procurement is the adoption of ecologically responsible practices in business activities used to meet needs for materials, goods, utilities and services (Rouse, M, 2016)

**Figure 2: Implementing Green Procurement**



Source: <https://www.spendedge.com/blogs/green-procurement-practices-challenges>

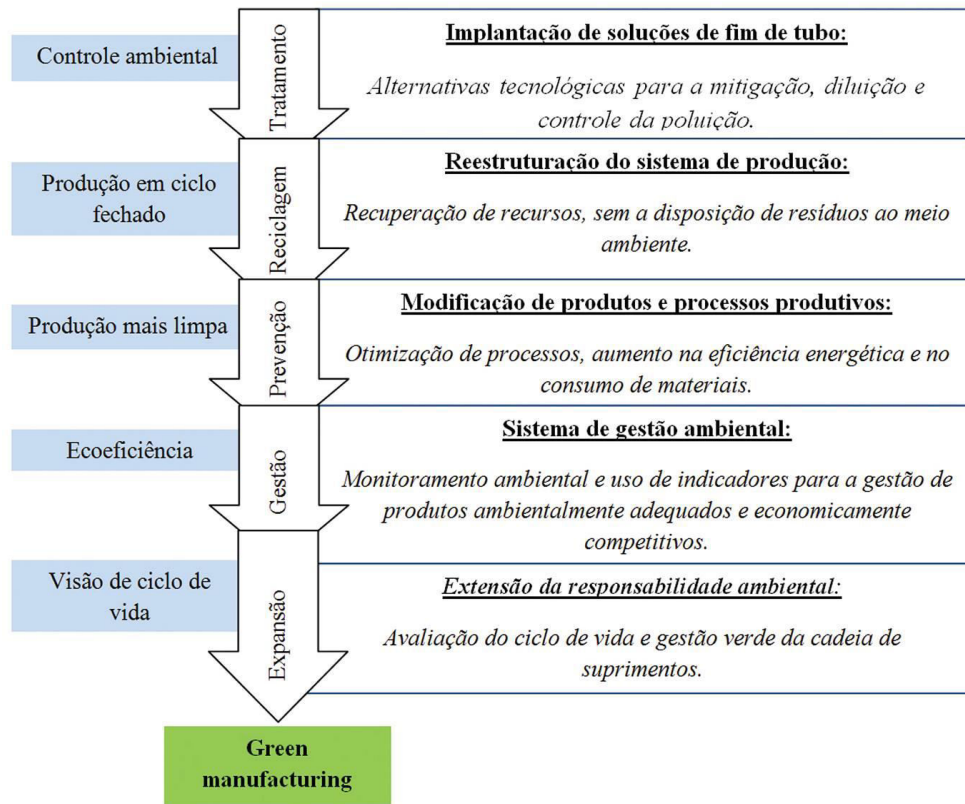
**Green Product Development**

Consumer marketers are trying to stand out in a growing and diverse eco-committed marketplace. Given the long- term impact of climate change and global warming, the call for the production and consumption of green products becomes even more urgent and necessary.(Jeevan, P.,2017)Green product (GP) development has become a key strategic consideration for many worldwide organisations, mainly due to environmental regulations and public awareness of environmentally conscious practices(Julião, J et al,2016)

**Green manufacturing (GM)**

In general, definitions of green manufacturing refer to the environmentally responsible production and use of manufactured goods(<https://insights.globalspec.com>) An efficient manufacturing process is the essence of sustainability.(Jeevan, P,2017)Manufacturing companies around the world, particularly in emerging economies, have an increased awareness of green concepts and attempt to adopt environment-friendly practices(Abebaw, H., and Virdi, S. ,2020)Sustainable manufacturing should integrate sustainable activities at all levels of manufacturing – product, process and system(NageswaraPosinasetti. ,2018) and green manufacturing that reduces waste and even pollution(Paul, I.et al,2014)

Figure 3: Green manufacturing



Source: <https://www.scielo.br>

**Green operations (GO)**

Green operations (GO) in terms of process and product stewardship to mitigate environmental damages and satisfy the escalating social expectation for environmentally friendly operations in the electronics industry(Wong et al,2011) In recent years, Sustainable Operations Management (SOM) has started receiving attention from both operations management and management science researchers. SOM includes topics such as green supply chain (eg, ), green procurement (eg, ; ) and reverse logistics (RL) (eg, ; ). SOM has a potentially vital role to play in contributing to solutions for the complex sustainability challenges confronted by many organisations(AngappaGunasekaran&ZahirIrani ,2014)

**Barriers for Adopting Green Supply Chain Management(<https://www.mbaskool.com>)**

- Lack of proper sustainability standards and government regulations
- High initial investment for adopting waste disposal methods – In Sweden the consumers are often unwilling to bear the extra cost of a sustainable solution.

- Improper alignment of long-term sustainability strategies of the company with its short term goals of profitability – For example in China due to cutthroat competition the providers of transportation cut corners to stay competitive
- Lack of sufficient motivation on the part of the top management
- Insufficient training about sustainable practices of Supply Chain

## **Opportunities of Green Supply Chain Management**

### **Global alarm over Greenhouse Gas emission**

Company policies are concentrating a lot of on characteristic and lowering the carbon footprints caused by their IT instrumentality, infrastructure, and people.

### **Climate Change**

Warming is impacting the weather, ice caps, and glaciers in each the northern and southern hemispheres during a negative approach. The increase within the water level thanks to the reduction within the ice caps and glaciers cowl is popping intent on be a primary reason for concern for environmentalists everywhere the planet.

### **Government and Environmental Protection Agency regulations**

A corporation ought to follow sure specifications to get Energy Star Rating and different environmental certifications. Penalization by policing agencies to implement carbon credit obedience is another exalting issue for inexperienced IT initiatives.

### **Enhancing Your Brand Image**

Taking the initiative for inexperienced provide chain methods can earn dividends among your client base. Today's trendy customers also are environmentally-conscious ones. They're going to respond well upon learning that a corporation is creating an endeavor to travel inexperienced and do its half to assist the surroundings. You'll be able to attempt to sell this angle by giving reports on what quantity material or fuel has been saved or by what quantity emission has been reduced. If you recognize however your competition handles its practices, you would possibly even be ready to supply direct comparisons.

### **Sustainability of Resources**

If a business has implemented green practices in its supply chain, then, then there will be a process or policy in place in the supply chain wherein the product that is sourced can be re-produced or recycled at the same pace at which it is consumed.

## **Cost Reduction**

Companies can do cost savings by implementing digital technologies that help in going green. IT Solutions that help in low consumption of power, substituting energy sources and recycling can create a positive impact on the financial sheets of a business. While implementing green initiatives, businesses focus on reducing the greenhouse gas emissions which in turn leads to making shorter trips and reducing shipments. This results in lowers costs as vehicles use less fuel and suffer minimized wear and tear.( <https://www.trademo.com>)

## **Challenges of Green Supply Chain Management**

The green supply chain initiatives have shown positive outcomes for many companies, but it is not without facing some challenges in its implementation. The literature has thrown light on the various challenges or barriers that would impede the industry in adopting GSCM.

### **Mismanaged Implementation**

Changing a supply chain management system takes financial investment, time, and human resources. If not implemented properly, there will be wasted labor, service redundancy, and missed deadlines that result in significant costs.(<https://carter-logistics.com>)

### **Complicated**

Process of supply chain management involves numerous complexities as it involves several departments within the organization. It may lead to create confusion and hamper the normal functioning of business. Employees may feel hesitant and demotivated to accept this concept as it is new to them thereby giving rise to several other difficulties.

### **Lack of Reliability**

Supply chain management lacks of reliability as it is completely dependent upon the mode of information exchange among several departments. If there is any instance of inaccurate information sharing by any of the department, then it will have adverse effects on performance of whole supply chain (<https://commercemates.com>)

### **Marginal Impact**

While going green is focused on reducing harm to the environment, the impact that any specific individual can have on the environment by going green is often negligible. The theory is that if everyone were to go green, it would have a significant and noticeable impact, but not everyone can be convinced to go green and many believe that doing so has no real impact outside of the economics. This makes going green a personal choice for many, which does not necessarily result in concrete economic or environmental benefits.( <https://www.sapling.com>)

## **Conclusion**

Today's Green Supply chain management mandates to incorporate the environmental idea in each and every stage of the product and service in a Supply Chain. Hence Supply chain

managers have a great role in developing innovative environmental technologies to tackle the problems faced by the economy on environmental problems and communicate this to every stake holder in the chain. A much greater degree of collaboration, transparency and integration of supply chain processes and systems is required for the initiative to be effective.

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