

Green Supply Chain: Drivers and Practices

Dr. Shilpi Chakravarty*

Introduction

The green supply chain practice a kind of positive environmental impact by the upstream and downstream practices of supply chain. It is a need of and hour, as all of the organization are now compelled to become eco-friendly and to ensure green supply chain practice in their place. This article elaborate a clear picture of green supply chain process and the practices which are been implemented in different firms. The basic aim of this article is to understand:

- *What drives supply chains to be eco-friendly?*
- *What are the Green supply chain practices?*

Keywords: ISO14001, Green Supply Chain, Reverse Logistics, Sustainability

Green Supply Chain Drivers

Green supply chains are supply chains wherein the upstream supply chain practices and downstream supply chain practices aim at minimizing the environmental impact of both forward and reverse flow of materials, information and funds. Green drivers are motivators that induce business organizations to adopt to green supply chain practices.

The Green Drivers

The drivers that induce green supply chain practices are: Customers, International markets, Government regulations, Competitors, Stake holders and Industrial groups.

- **Customers:** The customers today have gone environmentally friendly and are looking for green products like organic food products, less plastic and bio-degradable products, less use of depleting natural and pollution inducing resources. Customers who support eco-friendly products and processes are important drivers of green supply chain management practices.

* Department of Foreign Trade Management, The IIS University, Jaipur, Rajasthan, India.

- **International Markets:** Corporate today are with international markets either because the products are exported or because international brands are competitors for domestic brands. The global requirements for eco-friendly products and practices drive green supply chain practices. Some examples are: Air and water quality standards, e- waste management standards.
- **Government:** Regulations and laws enforced by the government on environmental damages, renewable resources and dumping of products have triggered organizations to follow green supply chain practices.
- **Competition:** Environmentally friendly practices by global competitors and cost advantages due to less wastage and recycling of resources have triggered Green thinking in supply chain practices.
- **Stakeholders and Industrial Groups:** Demand and inducements from community, industrial associations, interest groups, NGOs and management motivate corporate to follow sustainable practices.

Green Supply Chain Practices

Supply chain management practices are spread across activities of inbound logistics, operations, outbound logistics, marketing and after sales services. Some of the green supply chain practices across these activities are:

Green Inbound Practices

- Profiling raw materials without environmentally hazardous substances.
- Supplier's collaboration for Environmental objectives.
- Internal Management coordination of suppliers through Environmental Audit.
- ISO 14001 certified suppliers and supply chain partners.
- Environmentally friendly practices at all supplier tier.
- Training of suppliers on environmental practices.
- Electronic information sharing with suppliers.
- Localize sourcing.

Green Operational Practices

- Products/ services are designed for reduced use of Material and Energy.
- Products are designed with features to Reuse, Recycle and Recovery.
- Product designs favour environmentally friendly material and processes.
- Process and products comply with environment protection standards and regulations.
- Reduced carbon emissions in production processes
- Use of fuel-efficient tools and machines.
- Optimize processes to reduce waste.

- Energy saving and resources optimization to save energy and resources.
- Internal recycling of materials with the production.
- Quality assurance and ongoing assessment to measure Green SCM compliances.

Green Outbound Practices

- Use of less or recyclable packaging materials
- Reduced inventory and handling of products
- Use of Green warehousing techniques
- Optimization of the location of distribution hubs
- Order consolidation

Reverse Logistics

- Recovery and reuse of Used products.
- Resell the returned goods as in condition
- Remanufacture/refurbish/repack the returned goods
- Return the return-goods to the suppliers

The implementation of green supply chain practices is a challenge to most organisations and it requires the support of the management and the customers. The supports are:

The Management Supports Green Practices by Ensuring

- Stakeholder's commitment towards Environment regulations & Green practices.
- Cross functional collaboration for environmental improvements
- Implementation of Total Quality Environment Management
- Eco Labelling of the products

The Customers support green supply chain practices by collaborating with the suppliers to design eco-friendly products, clean processing, green packaging, recycling and reusing products. The strategies for implementation of Green SCM practices are:

- Design and implement environmentally friendly practices, training and audits across the supply chain.
- Continuous assessment of Green supply chain practices to identify possibilities of internal recycling of materials.
- Implementation Green warehousing and use of recycled packaging.
- Recovery and Reuse of used products.

The green supply chain practices are in practice as consumers and corporate are very much towards GO GREEN.

Integrating Green Supply Chain Management with ISO 14001 and Lean Supply Chain Management

In this lesson on green supply chain management answers two questions. What is the relationship of green supply chain management systems with ISO 14001 and lean supply chain practices? Is there an impact of green supply chain management practices, lean supply chain management practices and organisational performance?

What is ISO 14001?

ISO 14001 is a certification that imbibes the culture of commitment to protect the environment across the entire organisation and its extended organisation. It aims at improving the environment performance of an organisation. ISO 14001 certifications fosters the culture of Go Green across the organisation by:

- Integrating environmental issues with business operations for improved efficiency and cost reduction.
- Continuous improvement of environment performance of an organisation.

What is lean and Green Supply Chain Management Practice?

Lean supply chain practices provide ways to cut cost and improve operational efficiency from the customer perspective to add value to the products and services while green supply chain management practice provides ways to eliminate waste from the environment perspective to ensure sustainability.

Now having understood what is ISO 14001? Let us look into what can be the relationship between these three components?

A research on Casual relationship between Lean supply chain practices, Green Supply chain management Practices and Organisational Performance considered 200 manufacturing firms and identified that there is a relationship between lean adoption ISO 14001 and green supply chain practices. Some highlights of the research are: The assimilation of the lean practices by the organisation can be captured by the extent of lean adaptation and categorised as Lean Initiators, Lean movers and Lean adopters. The research indicated that:

ISO 14001 has a significant influence on lean Supply chain practices, green supply chain practices and organisational performance. In the presence of ISO 14001 Certification there was a difference in the lean adoption groups across the green supply chain practices in the areas of:

- Green inbound logistics
- Green outbound logistics
- Environmental performance

What does this mean?

- ISO 14001 provides a support system and culture that can be extended to Lean Supply chain management and green supply chain management practices.
- When corporate scale up their lean adaptation, can paralleling implement ISO 14001 certification to foster lean and green supply chain management practices.

Integrating Lean and Green Supply Chain Practices

To understand the process of integrating Lean and green supply chain with an empirical model that was an outcome of the research on Casual relationship between Lean supply chain practices, Green Supply chain management practices and Organisational Performance considered 200 manufacturing firms. The structural equation model highlighted that:

- The green drivers comprising of the customers, international markets, Government, Stakeholders influence Green Supply Chain management green support practices by the management and the customers.
- Management and customer support in turn will affect the green supply chain management practices of Green inbound, Green operations, green outbound and reverse logistics.
- The Lean SCM practices of Demand Management, Value addition, Process Standardisation, Industry Standardization, Lean culture and Cross enterprise Collaboration influence the green SCM practices.
- The green SCM practices and Lean SCM practices have an impact Organizational performance that is Environmental performance and Financial Performance.



Source: B.L. Lakshmi Meera and P. Chitramani, Causal Relationship between Lean Supply Chain Management Practices, Green Supply Chain Management Practices and Organisational Performance

Conclusion

Effective green supply chain management practices can integrate with lean supply chain practices for implementing efficient and environmentally sustainable supply chains. In today's world it is essential to understand the importance of sustainability, environmental impact. For every organization, according to triple bottom technique it essential to not only think of profit making but also ensure about social impact and environmental impact of the organization to become a global leader.

References

- ✘ Charisios Achillas, Dimitrios Aidonis, Dimitris Folinias, and Dionysis Bochtis, Green Supply Chain Management, (2019), Routledge, New York.
- ✘ Stuart Emmett, Vivek Sood, Green Supply Chains-An Action Manifesto, (2010), John Wiley & Sons Ltd, United Kingdom.

Weblinks

- ✘ What is ISO14001?,<https://advisera.com/14001academy/what-is-iso-14001/>
- ✘ ISO 14000 Environment Management Systems,https://www.omnex.com /members/standards/iso14000/iso_14000.aspx

