

# **International Journal of Research Publication and Reviews**

Journal homepage: www.ijrpr.com ISSN 2582-7421

# A Study on Green Supply Chain Management in Logistics

# Dr. R. Jeya Rani<sup>1</sup>, Ms. A. Vinothkumar<sup>2</sup>

<sup>1</sup>B.Sc., MBA, Ph.D., Assistant Professor, School of Management Studies, Sathyabama Institute Of Science And Technology Chennai, Tamilnadu, South India jeyarani.r.soms@sathyabama.ac.in

<sup>2</sup>B.Com., MBA., Student, School of Management Studies, Sathyabama Institute of Science and Technology Chennai, Tamilnadu, South India avinothkumar32@gmail.com

#### ABSTRACT:

Its contribution to improving the logistics performance in Sabaari Logistics Pvt. Ltd., being a growing Indian logistics firm, is the sole focus of the present research study. With greater emphasis on green sustainability worldwide, logistics firms have been shifting gears from traditional strategies to greener and more sustainable practices. Green Supply Chain Management (GSCM) deals with incorporating environmentally friendly considerations to all supply chain activities such as transportation, warehouse, packaging, and waste treatment. At Sabaari Logistics, these include the adoption of fuel-efficient vehicles, optimized routes, energy-efficient warehousing systems, and environmentally friendly packaging materials. These are intended to reduce environmental degradation while enhancing supply chain efficiency. This research investigates how GSCM has impacted operational efficiency, compliance with regulations, cost control, and reputation. It also discusses the company's strategy in addressing general challenges like high green technology costs, low awareness, and resistance to adoption. Primary data were gathered through formal interviews with staff, complemented by secondary data from industry publications and internal records. The results indicate that although the firm is in an initial phase of its green process, there are definite advantages on the emissions and cost reduction fronts as well as in process improvement. But on the other side, issues of budget and lack of training require being top-level

Keywords: Green Supply Chain Management, Sustainability, Logistics, Transportation, Environmental Practices, Operational Efficiency.

## I. INTRODUCTION

In the contemporary competitive and green business environment, logistics is no longer just essential to the flow of goods and services, but also to the orientation of supply chain operations' environmental impact. With sustainability now emerging as a predominant concern across all industries, conventional methods in logistics are reassessed and re-aligned from an environmental perspective—yielding what today is referred to as Green Supply Chain Management (GSCM). GSCM stands for the integration of environmentally friendly strategies and processes within the supply chain and logistics structure to minimize pollution, energy usage, and waste production in all supply chain stages. For Sabaari Logistics Pvt. Ltd., which is directly involved in transportation, warehousing, and distribution, green logistics is now a significant domain of change. The adoption of practices like fuel-efficient transportation, route optimization, environmentally friendly packaging, and energy-efficient warehousing by the company demonstrates an increased focus on environmental sustainability. With escalating customer expectations, heightened environmental legislation, and rising competition in the logistics industry, GSCM has evolved from being a value-added proposition to an essential part of long-term operational strategy. This section provides the background to comprehend green logistics, its significance in the contemporary supply chain, and its particular applicability to the operations and future development of Sabaari Logistics Pvt. Ltd.

# II. COMPANY PROFILE AND INDUSTRIAL OVERVIEW

Founded in 2001, Saabari Logistics Private Limited is a logistics service provider based in Chennai that provides door-to-door freight forwarding and cargo handling services. With customs clearance, air and ocean freight, warehousing, and project cargo shipment among its services, the company supports industries like agriculture, engineering, and automotive. Under its SLP Logistics Express division, it also extends international express courier services. Renowned for its customer focus and reliability, Saabari Logistics is gradually incorporating green measures and digital platforms to increase sustainability and efficiency in its operations.

#### **III.FUTURE OUTLOOK**

#### Future Prospect & Growth Plans:

As logistics adapts toward a sustainable model, GSCM will continue working on the following strategies: Advanced Technology: Utilizing AI, IoT, and blockchain technology for higher supply chain transparency and efficiency. Green Networks: Bolstering the logistics backbone for optimized routing, lower carbon footprints, and faster deliveries. **Developing Sustainable Partnerships**: Partnering with green-focused corporations to embrace environment-friendly principles and sustainable purchasing practices.

The future expansion of GSCM will be through its capability to package these innovations, putting firms in the vanguard of sustainability and efficiency in a fast-evolving logistics environment.

# **IV. REVIEW OF LITERATURE**

*Maqsood et al. (2022)* This paper examined determinants of CEOs' and managers' intention to implement Green Supply Chain Management (GSCM) and Clean Innovation Technology (CIT) among Pakistani SMEs. Based on data from 350 companies, it found that six variables—environmental, governmental, organizational, supplier, market, and operational—had significant effects on influencing these factors. Market and operational variables exercised the greatest influence. CIT performed as a mediator among the variables.

*Zhang & Zhao (2022)* This study emphasized the necessity of GSCM and CIT in improving profits, environmental performance, and company development. Practices of GSCM improve enterprise efficiency and promote good relations with stakeholders, ultimately promoting sustainable production and enterprise competitiveness.

*Mondal & Giri (2022)* The authors had investigated how the government subsidy backs green closed-loop supply chains in substitutable goods. GSCM and CIT were found to enhance organizational sustainability, HR improvement, and cost savings, so they are fundamental for SMEs aiming for business development and a better environment.

*Li et al.* (2022) The research explored how internal and external GSCM activities influence performance in the automobile industry. It discovered that internal efforts improve operations in foreign companies, while eco-design improves environmental performance in local firms—although it could lower economic benefits. CSV approaches were more successful than CSR in engaging consumers.

*Wu*, *Yu* & *Wang* (2022) The article reviewed the convergence of GHRM and GSCM, suggesting that although both had been studied earlier in isolation, their convergence enhances enterprise operations. It demanded additional empirical research work in China on their combined role in influencing organizational performance.

Alawamleh & Hasan (2022) Considering Jordan's pharma industry, this research established that dimensions of GSCM—such as green buying and reverse logistics—have positive influences on sustainability. It suggested that companies incorporate green practices and use internal policies to enforce sustainable practice.

#### **V. OBJECTIVES OF STUDY**

1. To research the contribution of green supply chain management towards minimizing the environmental footprint of logistics operations at the chosen company.

2. To assess the preparedness of logistics firms to embrace sustainable practices like green transportation, sustainable packaging, and energy-efficient warehousing.

3. To examine the advantages of adopting GSCM practices in logistics, such as cost reduction, operational effectiveness, and enhanced brand image.

#### VI. METHODOLOGY OF STUDY

This research used a descriptive design, at study design, data collection, and analysis, it was quite easy. It adopted a convenience sampling, with an overall sample size of 115 respondents having taken from the middle-level managers, supervisors, and SLP logistics, Chennai staff. Primary and secondary data were collected to collect data for the study. Primary data was gathered using a standardized questionnaire, and secondary data was gathered from literature reviews, websites, books, industry financial statements, and interviews with concerned staff. The study was limited, though. The sample size was 115 respondents, and the study was limited to only the logistics sector in Chennai, implying that the generalizability will be restricted. The collected data was analyzed using percentage analysis and a graphical representation of the data was established through bar charts and pie charts. Statistical tests were carried out using SPSS while statistical tools such as the Chi-square test and ANOVA were utilized to perform hypothesis testing. The research was formal and objective with predetermined queries. The research results are anticipated to generate practical implications and influence the e-logistics management beliefs and anticipation in the company.

## VII. DATA ANALYSIS

Null Hypothesis ( $H_0$ ): There is no significant difference in willingness to pay more across different levels of familiarity with GSCM. Alternative Hypothesis ( $H_1$ ): There is a significant difference in willingness to pay more across different levels of familiarity with GSCM.

# Table showing the crosstabulation Willingness to Pay More for Green Logistics across different Age Groups

	Descriptive							
Willingness to Pay More for Green Logistics (Q5) across different Age Groups					Std. Error	95% Confidence Interval for Mean (Lower Bound - Upper Bound)	Min	Max
	Age Group	Ν	Mean	Std. Deviation	1.11	17.09 - 21.57	11	25
	18–25	50	21.28	2.37	0.81	9.31 - 12.69	6	14
	26–30	29	11.86	1.57	0.65	6.28 - 9.06	4	10
	31-40	22	7.41	1.05	0.41	3.75 - 5.58	3	6
	Above 40	14	4.50	0.94	0.75	12.77 - 15.73	3	25

#### Table showing the ANOVA relationship between Willingness to Pay More for Green Logistics across different Age Groups

ANOVA						
Familiar with GSCM	Source	Sum of Squares (SS)	df	Mean Square (MS)	F	Sig. (p-value)
	Between Groups	23.10	4	5.775	23.695	0.00000024
	Within Groups	4.89	20	0.245	-	-
	Total	27.99	24	-	-	-

#### **INTERPRETATION:**

Since the p-value  $\approx 0.00000024$  is less than 0.05, we reject the null hypothesis.

# TABLE 4. TABLE INDICATING FAMILIAR WITH GREEN SUPPLY CHAIN MANAGEMENT (GSCM) IN LOGISTICS

S. No	Particulars	No. of responses	Percentage %
1.	Not Familiar at all	19	16.5%
2.	Slightly	38	33.0%
3.	Moderately familiar	16	13.9%
4.	Very familiar	24	20.9%

# FIGURE II. CHART REPRESENTING FAMILIAR WITH E-LOGISTICS SOLUTIONS IN SUPPLY CHAIN MANAGEMENT



#### **INFERENCE:**

From the above table, it is inferred that 33.9% respondent are very familiar, 47% respondent are somewhat familiar, 19.1% are respondent are not familiar.

#### VIII. RECOMMENDATIONS

The suggestions made to the industry are,

The organization needs to implement awareness programs and training sessions for employees and managers on the importance and application of GSCM and CIT practices.

Companies need to devote specific resources and budget to implement eco-design, green purchasing, and sustainable production practices.

The management needs to make cooperation with environment-friendly suppliers a priority and incorporate green vendor selection criteria into procurement procedures.

Firms have to invest in R&D of clean technologies and create tailored GSCM strategies that fit with their operational competencies.

Phased implementation of GSCM activities should be encouraged through pilot initiatives to minimize risk and provide scope for ongoing improvement.

Firms have to incorporate GHRM strategies like green training, performance rewards, and sustainability KPIs.

In order to promote sustainability, businesses can implement real-time monitoring of environmental footprints, minimize emissions through logistics optimization, and eliminate packaging waste.

#### **IX. CONCLUSION**

The research concludes that the implementation of Green Supply Chain Management (GSCM) practices and Clean Innovation Technology (CIT) is crucial for promoting sustainability, organizational performance improvement, and long-term competitiveness. Empirical data from different industries such as manufacturing, automotive, and pharmaceuticals show that internal and external drivers like environmental consciousness, market forces, government incentives, and supplier cooperation play a crucial role in the effective adoption of green practices. The results highlight the importance of implementing gradual steps, building capacity, and working together with stakeholders in order to defeat challenges and derive maximum benefits from green initiatives. As industries worldwide move towards sustainable development, the research reiterates the need for organized policies, training, and investments for facilitating the process of shifting to greener and cleaner supply chain systems.

#### **REFERENCES:**

- 1. Beamon, B. M. (1999). Designing the green supply chain. Logistics Information Management, 12(4), 332–342.
- Srivastava, S. K. (2007). Green supply- chain management: A state- of- the- art literature review. International Journal of Management Reviews, 9(1), 53–80.
- Sarkis, J., Zhu, Q., & Lai, K. H. (2011). An organizational theoretic review of green supply chain management literature. International Journal of Production Economics, 130(1), 1–15.
- Hervani, A. A., Helms, M. M., & Sarkis, J. (2005). Performance measurement for green supply chain management. Benchmarking: An International Journal, 12(4), 330–353.
- Zhu, Q., & Sarkis, J. (2004). Relationships between operational practices and performance among early adopters of green supply chain management practices in Chinese manufacturing enterprises. Journal of Operations Management, 22(3), 265–289.
- Rao, P., & Holt, D. (2005). Do green supply chains lead to competitiveness and economic performance? International Journal of Operations & Production Management, 25(9), 898–916.