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# A Study and Research of Green Logistics with Special Reference to Right Logistics Private Limited, Chennai

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**ABSTRACT:** Environmental considerations are factored into the management of supply chains. This goal can be achieved by using eco-friendly logistics. There is a lack of understanding on the most effective ways to implement environmentally friendly logistics solutions across all sectors of the economy, despite the fact that there is a growing awareness of the relevance of sustainability. The objective of the study is to analyse the Green Logistics with special reference to Chennai. This study contains 120 participants as part of its sample. The study depends on descriptive research design with convenience sampling as its choice of approach. The study adopted questionnaire data as its main information source. The research findings were established through the application of percentage analysis, chi-square analysis with correlation statistical tools. It is found that it is suggested that identifying and addressing barriers to effective collaboration with suppliers on sustainability initiatives is necessary for the company for its progress. It is concluded that the study underscores the critical position of green logistics in heavy environmental sustainability and improving overall organizational performance in the logistics industry.

**KEYWORDS**: Logistics, Economic, Transportation, green logistics

## I. INTRODUCTION

Green logistics is described as the process of incorporating environmental considerations into the planning, implementation, and management of activities along the supply chain in order to limit the negative implications that these activities have on the environment. Green logistics is also known as eco-friendly logistics. The term "green logistics" refers to an approach to logistics that is also considered to be ecologically environmentally sensitive. On occasion, the term "green logistics" is also used interchangeably with the term "eco-friendly logistics."
Green logistics is something that is thought to be essential for a number of reasons, the most important of which is that it calls attention to the fact that it is vital to eradicate the bad consequences that it has on the environment. Green logistics is something that is believed to be crucial with regard to sustainability. The logistics process incorporates ideas and practices that are aimed at reducing the amount of waste that is generated, preserving the resources that are accessible, and lowering the amount of carbon emissions that are produced.

Objectives of The Study

- To evaluate the effectiveness of existing company policies and guidelines in promoting and facilitate the implementation of sustainable practices within logistics operations.
- To assess the impact of technological innovation on green logistics
- To investigate the role of supply chain collaboration in promoting sustainability initiatives throughout the logistics supply chain
- To analyse the impact of green logistics on operational cost of the organisations

## II. REVIEW OF LITERATURE

**Chhabra, D., Singh, R.K. and Kumar, V. (2022),** The research establishes continuous monitoring and tracking of logistics operations as its main objective to improve environmental performance. The current study utilizes case studies as its main methodology. The monitoring system functions by transferring precise GPS data to servers in real-time alongside IoTs-based camera usage for capturing surrounding images. Mathematical analysis of digitized data serves to confirm a green logistic system design. Effective practices of Green Logistics in Monitoring system (MSGL) result in substantial carbon emission reductions along with cost and time efficiency benefits.

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**Nguyen Thi Mai Anh et al., (2024).** A research analysis investigates how green logistics practices influence sustainable performance of Hanoi's small and medium-sized logistics services organizations in Vietnam. The study used quantitative research design through surveys of 152 logistics firms to analyze results with SPSS and AMOS software. Results show these practices generate substantial beneficial effects on the economic sustainability and environmental sustainability and social sustainability aspects of logistics firms. The study's results help build theoretical knowledge about green logistics by showing how essential this practice is to create sustainable results. The findings introduce practical applications for Vietnamese logistics service providers through the adoption of green logistics practices which drive both sustainability and long-term market performance.

## III. RESEARCH METHODOLOGY

Research methods deployed in this study included description. The study includes statistical measures together with descriptive and quantitative data elements. The data gathering methods exist in two distinct categories. Primary data along with Secondary data comprise the two data categories. During research the investigator designed a questionnaire based on a structured five-point Likert scale. The research used non-probability sampling as its selection methodology. This research employs convenience sampling. The research has been designed to examine 120 participants. The study used Percentage analysis, Chi-square test and Correlation analysis for data analysis in relation to its specific research objectives.

## IV. DATA ANALYSIS AND INTERPRETATION

| | Categories | Frequency | Percentage |
|---|---|---|---|
| Age of the respondents | Below 30 | 40 | 33.3 |
| | 30-35 | 45 | 37.5 |
| | 36-40 | 20 | 16.7 |
| | 41-45 | 5 | 4.2 |
| | Above 45 | 10 | 8.3 |
| Educational qualification of the respondents | UG | 52 | 43.3 |
| | PG | 25 | 20.8 |
| | Diploma | 17 | 14.2 |
| | Professional | 14 | 11.7 |
| | Others | 12 | 10.0 |
| Year Of Service In The Industry | Below 5 Years | 22 | 18.3 |
| | 5-10 Years | 70 | 58.3 |
| | Above 10 years | 28 | 23.3 |

The above table shows that the majority (37.5%) of the respondents are in the age group of 30-35, the mainstream (43.3%) of the respondents have completed UG, the majority (58.3%) of the respondents said that 5-10 years as their experience.

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**Operational cost.**

| | Strongly agree | Agree | Neutral | Disagree | Strongly disagree |
|---|---|---|---|---|---|
| Operational costs have changed as a result of implementing green logistics practices. | 30 (25.0%) | 31 (25.8%) | 36 (30.0%) | 7 (5.8%) | 16 (13.3%) |
| Investing in environmental sustainability affects the company's overall financial performance. | 49 (40.8%) | 37 (30.8%) | 13 (10.8%) | 20 (16.7%) | 1 (.8%) |
| Investment in renewable energy sources, such as solar panels for warehouse operations, can lower energy expenses and decrease reliance on fossil fuels. | 24 (20.0%) | 59 (49.2%) | 18 (15.0%) | 18 (15.0%) | 1 (.8%) |
| Implementation of green logistics practices, such as route optimization and vehicle electrification, can lead to reduced fuel consumption and transportation costs. | 36 (30.0%) | 31 (25.8%) | 22 (18.3%) | 10 (8.3%) | 21 (17.5%) |
| Adoption of eco-friendly packaging materials can decrease packaging costs while minimizing waste and enhancing sustainability. | 25 (20.8%) | 10 (8.3%) | 19 (15.8%) | 10 (8.3%) | 56 (46.7%) |

The above table shows that the majority (30.0%) of the respondents are neutral towards the operational costs changed as a result of implementing green logistics practices, the majority (40.8%) of the respondents are strongly agree towards the investing in environmental sustainability affects the company's overall financial performance, the majority (49.2%) of the respondents are agree towards the investment in renewable energy sources, solar panels for warehouse operations, can lower energy expenses and decrease reliance on fossil fuels, the majority (30.0%) of the respondents are strongly agree towards the implementation of green logistics practices, route optimization and vehicle electrification, can lead to reduced fuel consumption and transportation costs and the majority (46.7%) of the respondents are strongly disagree towards the eco-friendly packaging materials can decrease packaging costs while minimizing waste and enhancing sustainability.

Supply Chain Collaboration for Sustainability

| | Strongly agree | Agree | Neutral | Disagree | Strongly disagree |
|---|---|---|---|---|---|
| Collaboration with suppliers and partners provides significant benefits for promoting sustainability. | 21 (17.5%) | 15 (12.5%) | 24 (20.0%) | 40 (33.3%) | 20 (16.7%) |
| The collaborative efforts with suppliers to reduce environmental impact. | 34 (28.3%) | 35 (29.2%) | 20 (16.7%) | 2 (1.7%) | 29 (24.2%) |
| Collaborative efforts with suppliers have influenced changes in supplier practices or attitudes towards sustainability. | 37 (30.8%) | 32 (26.7%) | 20 (16.7%) | 12 (10.0%) | 19 (15.8%) |

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| | | | | | |
|---|---|---|---|---|---|
| There are some barriers to effective collaboration with suppliers on sustainability initiatives. | 24 (20.0%) | 45 (37.5%) | 31 (25.8%) | 3 (2.5%) | 17 (14.2%) |
| Suppliers and partners are encouraged to share best practices and lessons learned to drive continuous improvement in sustainability performance. | 37 (30.8%) | 29 (24.2%) | 14 (11.7%) | 17 (14.2%) | 23 (19.2%) |

The above table shows that the majority (33.3%) of the respondents are disagree towards the collaboration with suppliers and partners provides significant benefits for promoting sustainability, the majority (29.2%) of the respondents are agree towards the collaborative efforts with suppliers to reduce environmental impact, the majority (30.8%) of the respondents are strongly agree towards the collaborative efforts with suppliers influenced changes in supplier practices or attitudes towards sustainability, the majority (37.5%) of the respondents are agree towards the some barriers to effective collaboration with suppliers on sustainability initiatives and the majority (30.8%) of the respondents are strongly agree towards the some suppliers and partners are encouraged to share best practices and lessons learned to drive continuous improvement in sustainability performance.

## V. CHI-SQUARE ANALYSIS- RELATIONSHIP BETWEEN THE EDUCATIONAL QUALIFICATION OF THE RESPONDENTS AND OPERATIONAL COSTS

### HYPOTHESIS TESTING

**Null hypothesis (Ho):** There is no important connection between the educational qualification of the respondents and operational costs.

**Alternative hypothesis (H1):** There is some important connection between the educational qualification of the respondents and operational costs.

**Chi-Square Tests**

| | Value | df | Asymp. Sig. (2-sided) |
|---|---|---|---|
| Pearson Chi-Square | 109.395[a] | 72 | .003 |
| Likelihood Ratio | 108.322 | 72 | .004 |
| Linear-by-Linear Association | 2.662 | 1 | .103 |
| N of Valid Cases | 120 | | |

a. 91 cells (95.8%) have expected count less than 5. The minimum expected count is .10.

**INTERPRETATION:**

As per the above table, it is incidental that the P value is 0.003; it is important to 5% (0.05) important level. The minimum expected count is 0.10. Thus alternative hypothesis is accepted and it is finding that there is some important connection flanked by the educational qualification of the respondents and operational costs.

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## VI. CORRELATION ANALYSIS- RELATIONSHIP BETWEEN THE ANNUAL INCOMES PER ANNUM IN RS. OF THE RESPONDENTS AND SUPPLY CHAIN COLLABORATION FOR SUSTAINABILITY

| Correlations | | | |
|---|---|---|---|
| | | ANNUAL INCOME PER ANNUM IN RS. OF THE RESPONDENTS | SUPPLY CHAIN COLLABORATION FOR SUSTAINABILITY |
| ANNUAL INCOME PER ANNUM IN RS. OF THE RESPONDENTS | Pearson Correlation | 1 | -.149 |
| | Sig. (2-tailed) | | .103 |
| | N | 120 | 120 |
| SUPPLY CHAIN COLLABORATION FOR SUSTAINABILITY | Pearson Correlation | -.149 | 1 |
| | Sig. (2-tailed) | .103 | |
| | N | 120 | 120 |

**INTERPRETATION:**

The above table indicates that out of 120 respondents, co-efficient of correlation flanked by the annual income per annum in Rs. of the respondents and supply chain collaboration for sustainability is -0.149. It is below 1. So there is negative relationship flanked by the annual income per annum in Rs. of the respondents and supply chain collaboration for sustainability.

## VI. SUGGESTIONS

- Investing in green technologies is essential for the company for maintaining a competitive edge and meeting customer expectations for sustainability.
- Collaboration with suppliers and partners provides significant opportunities for the company for promoting sustainability throughout the supply chain.
- Collaborative efforts with suppliers to reduce environmental impact should be continued and strengthened for the company.
- The company needs to leverage the collaborative efforts with suppliers to bring changes in supplier practices or attitudes towards sustainability.
- Identifying and addressing barriers to effective collaboration with suppliers on sustainability initiatives is necessary for the company for its progress.
- The company has to encourage suppliers and partners to share best practices and lessons to learn incessant development in sustainability performance throughout the supply chain.
- Monitoring and evaluating changes in operational costs resulting from implementing green logistics practices is essential for informed decision-making.
- Implementing emerald logistics practice, such as route optimization and vehicle electrification, can lead to significant cost savings while also reducing environmental impact.

## VII. CONCLUSION

After conducting an in-depth study on the functioning of green logistics practices in the logistics industry, it is concluded that organizations face various challenges and opportunities in adopting sustainable practices throughout their operations. Despite these challenges, it is evident that investing in green technologies and fostering collaboration with stakeholders can lead to significant benefits in terms of reducing carbon emissions, resource consumption, and operational costs. In conclusion, the study underscores the critical role of emerald logistics in driving environmental

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sustainability and improving overall organizational performance in the logistics industry. It is imperative for companies to address the identified challenges and leverage opportunities to enhance their sustainability initiatives, thereby causative to a additional sustainable future for the manufacturing and society as a whole.

## REFERENCES

1. Chhabra, D., Singh, R.K. and Kumar, V. (2022), "Developing IT-enabled performance monitoring system for green logistics: a case study", *International Journal of Productivity and Performance Management*, Vol. 71 No. 3, pp. 775-789.
2. Nguyen Thi Mai Anh et al., (2024). The Impact of Green Logistics Practices On Sustainable Performance: An Empirical Study of Small and Medium Logistics Service Providers in Hanoi. International Journal of Scientific Research and Management (IJSRM), 13(01), 8245-8254.
3. Nikseresht, A., Golmohammadi, D. and Zandieh, M. (2024), "Sustainable green logistics and remanufacturing: a bibliometric analysis and future research directions", *The International Journal of Logistics Management*, Vol. 35 No. 3, pp. 755-803.
4. Diabat, A., & Govindan, K. (2011). An analysis of the drivers affecting the implementation of green supply chain management. Resources, Conservation and Recycling, 55(6), 659-667.
5. Hu, A. H., & Hsu, C. W. (2010). Critical factors for implementing green supply chain management practice: an empirical study of electrical and electronics industries in Taiwan. Management Research Review, 33(6), 586-608.
6. Lin, C.Y., & Ho, Y.H. (2010). Determinants of Green Practice Adoption for Logistics Companies in China. Journal of Business Ethics, March 2011, 98:67-83.

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