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From Emissions to Innovation: Green Logistics as Corporate Social Strategy in Philippine International Freight Forwarding

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Index Terms:

sustainable freight operations, environmental supply chain practices, logistics governance, emissions tracking systems, operational sustainability integration, transport efficiency strategies, developing-country logistics

Abstract. This study examines how green logistics is implemented as part of corporate social responsibility (CSR) in Philippine international freight forwarding, focusing on the gap between sustainability expectations and operational realities. While environmental responsibility has become a priority in global supply chains, its practical application in developing-country logistics contexts remains uneven. The study aims to understand how logistics professionals integrate green logistics into daily operations, the challenges they encounter, and how these practices contribute to CSR outcomes. Qualitative descriptive research design was employed. Data were collected through semi-structured interviews with ten logistics professionals working in operations, compliance, and management roles within Metro Manila-based international freight forwarding companies. Thematic analysis was used to identify recurring patterns and themes, guided by the Technology–Organization–Environment (TOE) framework. Findings reveal that green logistics is embedded within routine operational processes such as route optimization, shipment consolidation, digital documentation, emissions monitoring, and resource reuse. These practices serve as tangible expressions of CSR. However, implementation is constrained by fragmented systems, inconsistent subcontractor data, time pressure, cost limitations, and infrastructure challenges. External drivers such as regulatory requirements and client sustainability expectations significantly influence adoption, while leadership support and digital systems enhance consistency. The study concludes that green logistics operationalizes CSR by integrating environmental accountability into core logistics functions. Strengthening digital integration, training, and stakeholder coordination can improve sustainability performance. The findings contribute to the literature by providing an operational perspective on CSR implementation in developing-country logistics contexts.

Introduction

The logistics sector is essential to global trade, enabling the movement of goods across borders and supporting economic growth. However, it is also one of the largest contributors to environmental degradation due to its dependence on fossil fuels, intensive resource use, and high emissions output. Freight transport, in particular, accounts for a significant share of global greenhouse gas emissions, making it a key focus of sustainability efforts. As environmental concerns continue to intensify, logistics companies are under increasing pressure to reduce their environmental footprint while maintaining efficiency and service reliability.

Green logistics has emerged as a response to these pressures. It refers to the integration of environmentally responsible practices into logistics operations to minimize environmental impact without compromising performance. These practices include route optimization, fuel efficiency, load consolidation, waste reduction, and the adoption of digital systems to streamline processes. Research has shown that green logistics can contribute to both environmental and economic performance, making it a strategic priority for many organizations.

At the same time, Corporate Social Responsibility (CSR) has evolved beyond traditional philanthropic activities to include environmental accountability within business operations. Companies are now expected to demonstrate how their operations contribute to sustainability goals, particularly in industries with high environmental impact such as logistics. In this context, green logistics serves as a practical and measurable expression of CSR, translating sustainability commitments into operational actions.

Despite the growing importance of green logistics and CSR, there are inconsistencies in how these concepts are implemented, particularly in developing countries. While global studies often present green logistics as a structured and strategic initiative, evidence from developing contexts suggests that implementation is often fragmented, compliance-driven, and constrained by operational realities. This gap between theory and practice highlights the need for context-specific research.

In the Philippines, international freight forwarding companies operate within a complex environment characterized by traffic congestion, limited infrastructure, high logistics costs, and regulatory challenges. These conditions create barriers to the consistent implementation of green logistics practices. While policies and CSR frameworks exist, there is limited empirical evidence on how sustainability is actually practiced at the operational level.

Most existing studies focus on policy analysis, organizational strategies, or quantitative performance metrics. However, there is a lack of research that captures the lived experiences of logistics professionals who are directly involved in implementing sustainability practices. Understanding these experiences is critical for bridging the gap between sustainability expectations and operational realities.

This study addresses this gap by examining how green logistics is implemented as part of CSR in Philippine international freight forwarding. Specifically, it aims to answer the following research questions:

1. How do logistics professionals implement green logistics practices in their daily operations?
2. What operational challenges affect the sustainability of these practices?
3. How do green logistics practices contribute to CSR outcomes within organizations?

The primary objective of the study is to examine and describe the operational integration of green logistics within CSR frameworks. It also seeks to identify the factors that enable or constrain implementation and to analyze how these practices reflect organizational commitment to sustainability.

The findings of this study are relevant to both theory and practice. From a theoretical perspective, the study contributes to the understanding of CSR as an operational concept rather than a purely strategic one. From a practical perspective, it provides insights for logistics companies, policymakers, and industry stakeholders on how to improve sustainability practices in real-world settings.

Methodology

Research Design

This study employed a qualitative descriptive research design to capture the real-world experiences of logistics professionals in implementing green logistics practices. This approach was chosen because it allows for a direct and detailed description of participants' experiences without imposing complex theoretical interpretations.

Qualitative research is particularly suitable for exploring organizational practices and human experiences, especially in areas where limited empirical data exists. In the context of this study, it enabled the researcher to understand how sustainability is interpreted and practiced within daily logistics operations.

Research Locale

The study was conducted in the National Capital Region (NCR), which serves as the primary hub for international freight forwarding activities in the Philippines. NCR hosts major ports, airports, and logistics company headquarters, making it an ideal setting for examining sustainability practices in freight forwarding operations.

Participants

A total of ten logistics professionals participated in the study. These included managers, supervisors, compliance officers, and operational staff working in international freight forwarding companies. Participants were selected using purposive sampling to ensure that they had relevant experience and direct involvement in logistics operations.

Inclusion criteria required participants to have at least one year of experience and to be involved in operational, compliance, or sustainability-related functions.

Data Collection

Data were collected through semi-structured interviews. The interview guide was designed to explore participants' experiences with green logistics practices, operational challenges, and CSR-related outcomes.

Interviews were conducted either in person or through online platforms, depending on participant availability. Each interview lasted approximately 30 to 60 minutes and was recorded with participant consent.

Data Analysis

Thematic analysis was used to analyze the data. The process involved transcription, coding, categorization, and theme development. Initial codes were generated from significant statements, which were then grouped into sub-themes and broader themes.

The analysis was guided by the Technology–Organization–Environment (TOE) framework, which helped explain how technological, organizational, and environmental factors influence the implementation of green logistics practices.

Ethical Considerations

Ethical standards were strictly followed throughout the study. Participants provided informed consent, and all data were anonymized to protect confidentiality. Data were stored securely and used only for research purposes.

Results and Discussion

1. Integration of Green Logistics in Daily Operations

The findings show that green logistics is embedded within routine logistics activities rather than treated as a separate initiative. Participants described sustainability as part of daily operations, particularly in areas such as shipment planning, route optimization, and documentation.

One key practice identified is route optimization and shipment consolidation. These practices reduce unnecessary trips, lower fuel consumption, and improve efficiency. Participants emphasized that combining shipments and optimizing routes are standard procedures rather than special sustainability efforts.

Digitalization also plays a significant role. The use of electronic documentation systems reduces paper usage and improves accuracy. Participants noted that digital workflows help prevent errors and reduce the need for reprocessing, which indirectly contributes to sustainability.

These findings suggest that green logistics becomes more effective when integrated into existing workflows. Rather than requiring separate programs, sustainability is achieved through small but consistent operational adjustments.

2. Operational Challenges in Implementation

Despite the presence of green logistics practices, participants reported several challenges that limit their effectiveness.
Time pressure is a major constraint. During peak operations, meeting deadlines often take priority over sustainability considerations. This creates a trade-off between operational efficiency and environmental responsibility.

Cost constraints also affect implementation. Investments in green technologies and systems require financial resources that may not always be available. As a result, companies often prioritize short-term operational needs over long-term sustainability goals.

Data limitations present another challenge. Many companies lack integrated systems for tracking emissions and sustainability performance. Inconsistent data from subcontractors further complicates monitoring efforts.

Infrastructure issues, such as traffic congestion, increase fuel consumption and emissions. These factors are beyond the control of individual companies but significantly affect sustainability outcomes.

3. CSR Outcomes of Green Logistics

Participants described green logistics as a practical way to demonstrate CSR. Practices such as emissions documentation, compliance monitoring, and digital workflows provide measurable evidence of environmental responsibility.

Leadership support was identified as a key factor in sustaining these practices. Companies that integrate sustainability into performance metrics and provide training are more likely to achieve consistent implementation.

External factors, such as client requirements and regulatory standards, also drive adoption. Companies often implement green logistics practices to meet these expectations and maintain competitiveness.

Discussion

The findings highlight the complex relationship between sustainability expectations and operational realities. While green logistics practices are present, their implementation is shaped by both internal and external factors.

Compared to global studies, implementation in the Philippine context is more constrained by structural and operational challenges. However, the integration of sustainability into daily tasks suggests that green logistics can still function effectively as a CSR tool.

The study also demonstrates the relevance of the TOE framework in explaining sustainability adoption. Technological readiness, organizational support, and environmental pressure all play a role in shaping practices.

Conclusion and Recommendations

This study examined how green logistics is implemented as part of corporate social responsibility in Philippine international freight forwarding, focusing on the lived experiences of logistics professionals. The findings show that green logistics is not treated as a separate initiative but is embedded within routine operational activities such as route optimization, shipment consolidation, digital documentation, and emissions monitoring. These practices demonstrate that sustainability is operationalized through everyday logistics decisions rather than through standalone CSR programs.

However, the study also found that implementation remains constrained by operational and structural challenges. These include fragmented data systems, inconsistent subcontractor reporting, cost limitations, time pressure, and infrastructure-related inefficiencies such as traffic congestion. As a result, sustainability practices are often applied inconsistently and are sometimes driven more by compliance requirements than by strategic intent. Despite these limitations, external pressures such as regulatory requirements and client expectations continue to drive adoption.

Overall, the study concludes that green logistics serves as a practical and measurable expression of CSR within freight forwarding operations. Its effectiveness depends on the alignment of technological capability, organizational support, and environmental pressures. When these elements are coordinated, sustainability becomes more consistent and integrated into core business processes.

Implications

From a theoretical perspective, this study contributes to the understanding of CSR by demonstrating that it is not only a strategic or policy-level concept but also an operational practice. It extends existing literature by showing how CSR is enacted through daily logistics activities in a developing-country context. The application of the Technology–Organization–Environment framework also reinforces its relevance in explaining sustainability adoption in logistics operations.

From a practical standpoint, the findings highlight the need for freight forwarding companies to strengthen digital integration and data management systems. Reliable emissions tracking and standardized reporting mechanisms are necessary to improve accountability and support decision-making. Organizations should also invest in continuous training programs to enhance employee awareness and capability in implementing green logistics practices.

For management, the study emphasizes the importance of leadership support in sustaining sustainability initiatives. Integrating green logistics into performance metrics and incentive systems can improve consistency and employee engagement. The proposed Green Logistics Performance Incentive System (GLPIS) provides a structured approach to aligning sustainability with operational performance.

From a policy perspective, the study suggests that regulatory bodies and industry stakeholders should focus on improving coordination, standardizing sustainability metrics, and supporting infrastructure development. Policies that encourage collaboration between firms, government agencies, and supply chain partners can help address systemic barriers that individual companies cannot resolve alone.

Finally, the study acknowledges its limitations, particularly its focus on a small sample within the National Capital Region. Future research may expand the scope by including other regions, conducting quantitative validation, or exploring comparative studies across different logistics sectors. Longitudinal research may also examine how sustainability practices evolve over time.

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Competing Interests Statement

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this article.

Data Availability Statement

Data sharing is not applicable to this article as no new data were created or analyzed in this study; all data used were obtained from previously published sources as cited in the reference list.

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Appendices

No appendices are attached to this study.