

## The Impact of Green Logistics Operations on Financial Reports: A Review Study In Green Logistics Accounting

Sadiq Jafar Kathim <sup>1</sup>

[dw.sad23@atu.edu.iq](mailto:dw.sad23@atu.edu.iq)

Nadhim Khasran Hassooni Al Shaibani <sup>2</sup>

[nadhim.hassooni@atu.edu.iq](mailto:nadhim.hassooni@atu.edu.iq)

Samaher Sadeq Ali AL- Gburi <sup>3</sup>

[samaher.ali.idi2@atu.edu.iq](mailto:samaher.ali.idi2@atu.edu.iq)

1 2 3 AL -Furat AL -Awsat Technical University, Technical Institute of Dewaniya, Iraq.

### ABSTRACT:

The purpose of this study is to review a group of literature on the impact of green logistics operations in the field of green logistics accounting. A group of references and previous literature was analyzed to understand the trends and positions of studies towards the variables of the study, as well as integrating environmental factors related to accounting systems and providing financial reports that reflect environmental awareness. In companies, through their adoption of green accounting processes, and working to create cooperation between the financial and environmental sectors to identify the necessary accounting indicators and develop them in a way that contributes to raising awareness of the importance of green logistics accounting and adopting the necessary practices to invest in environmental technology and improve operating costs and profits by influencing the performance of these companies, and accordingly The study produced a set of results, the first of which was that green accounting logistical operations affect financial reports through the costs of transportation, storage, packaging, etc., in a way that can contribute to making significant changes in accounting standards and improve the accounting performance of these companies.

**Keywords:** (green logistics operations, green logistics accounting, financial reports).

## INTRODUCTION

Sustainability in the corporate environment represents an important issue in the modern business world. One of the important aspects represented by sustainability is the adoption of green accounting logistics processes (Jayarathna et al., 2023), which aims to enhance companies' capabilities to pay attention to environmental performance and reduce the adverse effects of logistics activities. Accounting, and therefore companies resort to using financial reports as a basic tool to evaluate their internal performance (Appannan et al., 2023), so it has become appropriate to understand the relationship between green accounting logistics operations and companies' financial reports (Karaman et al., 2020).

Accordingly, this study aims to conduct a review of some previous literature related to green accounting logistics activities and their relationship to financial reports (Ren et al., 2020). Here, these articles will be analyzed based on the objectives of each study to understand its current and future trends, and to establish appropriate foundations that can weaken these previous studies and strengthen the current study (Marín-Rodríguez et al., 2023; Hussein & Jasim, 2023; Jasim et al., 2023).

Given the nature of the work of green accounting processes and the impact they can have on financial reports (Scarpellini, 2021), most studies are directed towards adopting green accounting logistics practices by investing in environmental accounting technology to bring about changes in operating costs and profits, which directly or indirectly affects the mechanism of Making financial reports for companies (Al-Shaer, 2020 ; Anse et al., 2020 ).

In addition, green logistics accounting can affect financial reports through transportation, storage, and packaging costs (Baah et al., 2021), and this may result in additional amendments to companies' accounting standards in order to evaluate and improve their environmental performance (Arvidsson & Dumay, 2022).

Hence, the current study came to highlight the importance of analyzing and summarizing previous studies to understand the impact of green logistics accounting processes on financial reports in the field of increasing awareness of the importance of integrating environmental factors and providing important avenues for future studies in this field.

#### • **Study problem**

The nature of the impact of green logistics accounting processes on financial reports raises many challenges that can stand as an obstacle to companies achieving their goals, and it may be difficult to determine the environmental impacts that could act as a threat to the environmental efficiency of these companies, which requires them to use accounting technology that can shorten the time for companies to invest and achieve profits, and thus it becomes difficult to determine the accounting and financial benefits in the short term, since the costs of green logistics accounting operations require a large amount of time to achieve sustainable development goals due to the large number of limitations in achieving green logistics accounting principles.

On the other hand, organizations may face regulatory challenges with regard to their financial reporting related to green logistics operations. In some countries or regulators, mandatory requirements for detailed environmental

reporting or sustainability accounting standards may be imposed, and the adoption of green logistics operations may require changes to existing accounting standards. Organizations may need to submit additional reporting or adjustments in financial reporting to properly reflect environmental performance. Accounting standards should be developed in cooperation between the financial sector and the environmental sector, hence the problem of study can be formulated in an important question (**What is the impact of green logistics operations on financial reporting as a review study in green logistics accounting?**).

#### · **The importance of study**

The importance of the impact of green logistics operations on financial reporting in the field of green logistics accounting is highlighted in the following:

1. Include accurate financial information about the environmental performance of organizations in financial reports, and organizations can show greater transparency and enhance their environmental responsibility to investors and other stakeholders.
2. Improved green logistics processes can contribute to reducing overhead costs for organizations, such as energy, transportation and storage costs. Thus, they can provide financial reports that reflect those improvements and enhance the financial sustainability of organizations.
3. Investors, clients, staff, and the general public should pay more attention to environmental and sustainability challenges. Organizations can satisfy these demands and improve their standing and appeal to stakeholders by include

financial data pertaining to green logistics operations in financial reports.

4. Green logistics techniques are pushing businesses to innovate and enhance their supply networks and manufacturing procedures.

#### • **Objectives of study**

The study aims to achieve a set of objectives:

1. Understanding the future trends of green logistics accounting processes towards financial reporting.
2. Identify the various green practices and processes that contribute to recycling and improving the efficiency of accounting consumption in business companies.
3. Evaluate how green accounting logistics processes can improve companies' work on providing appropriate financial information in financial reports.
4. Provide practical and concrete recommendations to organizations on how to improve their financial reporting related to green logistics operations. Recommendations could include improvements in reporting, changes in accounting practices, and the use of financial sustainability assessment tools.

#### • **Literature Review**

##### **1. Study (Anser et al.,2020)**

In order to examine the micro and macro perspectives of green enterprise technology and guarantee environmentally friendly products, the study offers a fresh perspective on how to broaden the conventional technology acceptance (TAM) model to incorporate the energy-enhanced TAM model (EA-TAM). To improve analytical skills and comprehend the main factors influencing the

TAM model from a business and industry standpoint, a critical evaluation would be beneficial. Research recommended TAM models According to the findings, EA-TAM for small businesses is linked to a green investment choice that raises the demand for renewable energy in order to boost export potential, logistical efficiency, technical advancement, resource inputs, and competitiveness. These elements would substantially encourage green product innovation, which is why money is being spent on green R&D. An eco-friendly supply chain procedure would cultivate a mindset and behavioral.

## **2. Study (Roy&Mohanty,2023)**

In an industrial setting in India, this study looks into how sustainable supply chains are affected by green logistics practices. It draws important conclusions from empirical analysis that have a big impact on environmental management academic research and professional practice. The study's conceptual model takes into account the needs of outside parties, including social, economic, and environmental aspects, which are what motivate the incorporation of sustainable practices into supply chains and logistics procedures. Structural Equation Modeling (SEM) in the R engine platform is used to assess the data obtained from Indian logistics providers using a structured questionnaire, and the results support the model. The findings show that green practices have less of an impact on sustainable performance than logistics operations, and that logistics operations' direct influence is stronger on supply chain sustainability than on green practices. The study contributes to understanding contemporary sustainability practices and

expands the scope of environmental management to encompass sustainability beyond just environmental concerns.

### **3. Study (Li et al.,2023)**

Cold chain logistics is frequently utilized to guarantee the safety of fresh food by creating a low temperature environment. However, because cold chain logistics consume a lot of energy, research is focusing on ways to lower carbon emissions in order to create sustainable distribution. In order to accomplish green operations, this paper suggests an intelligent distribution system for cold chain logistics. In particular, a framework for smart systems based on block chain was suggested. to increase food traceability and operational efficiency. Simultaneously, the intelligent distribution method planning system incorporates carbon emissions into the electric vehicle steering optimization model. The goal of the suggested improvement model is to lower all costs, including carbon, shipping, waiting, penalty, damage, cooling, and fixed costs. emissions. Furthermore, the ant colony algorithm is embedded in the intelligent system to help design distribution methods. Finally, this study combines a real case to discuss the performance of the smart system, and the results show that the proposed system can significantly reduce the cost of distribution and carbon emissions. Managers can use the proposed smart system to design distribution methods and monitor the distribution process.

### **4. Study (Mohsin et al.,2022)**

This study looks into the connection between environmental protection, green logistics, and economic development in nations that are part of the Belt and

Road Initiative. Panel data from 2007 to 2018 are used in the study, and the Generalized Moments (GMM) approach is used for analysis. The results show that using fossil fuels for logistics has a negative effect on the environment and prevents sustainable growth.

### **5. Study (Singh & Roy, 2020)**

The article discusses how Internet of Things (IoT) technologies might improve the sustainability and productivity of the logistics sector. It highlights the pervasiveness of logistics and its reliance on fossil fuels, which makes it an ideal domain for implementing IoT-based sustainability measures. India's logistics sector has significant obstacles that affect the nation's economy, environment, and society. The paper examines these problems and discusses the literature. It argues that integrating IoT into logistics could enhance sustainability and operational efficacy. The paper aims to provide novel insights to academics, managers, and policymakers operating in the logistics industry. It also suggests that additional research is necessary in order to completely comprehend.

### **6. Study (An et al., 2021)**

The study examines the relationships between social, environmental, and economic factors in countries participating in the Belt and Road Initiative and green logistics methods. It concludes that Chinese outward foreign direct investment (FDI) significantly contributes to raising the caliber and volume of green logistics operations, encompassing customs services, transportation infrastructure, and international shipment dependability. The report also emphasizes how efficient logistics and top-notch transportation infrastructure



lower carbon emissions by preserving energy across the supply chain. The quality of logistical operations is further improved by the utilization of renewable energy resources. Additionally, by increasing the effectiveness of logistics, improved institutional quality helps solve social problems. The findings imply that nations taking part in the Belt and Road Initiative ought to give integration of green logistics infrastructure top priority and environmental stewardship to foster trade volume, economic growth, and sustainability.

### **7. Study (Shoaib et al.,2023)**

In order to meet both financial and social and environmental objectives, globalization has forced businesses to approach their logistics operations from a green, sustainable perspective. Due to external challenges, a growing number of logistics businesses are now eager to improve their marketing and adopt sustainability in their operations. Since there hasn't been any prior research on the topic, this study uses an integrated modeling approach to identify and prioritize the critical enablers for implementing sustainable green logistics, given the challenges associated with converting traditional logistics activities into sustainable green logistics. 118 articles about green and sustainable logistics were used to identify 21 enablers in total. First, relevant enablers in each category were grouped using exploratory factor analysis (EFA). was used to group relevant enablers in their respective domain. Second, the Fuzzy Decision Experiment and Evaluation Laboratory (DEMATEL) approach analyzed the interrelationships between enablers by finding cause and effect behavior and classifying them accordingly. Finally, the Interpretive Structural Modeling (ISM) method formed a strong theoretical

framework according to the results reached with the help of fuzzy DEMATEL. Based on the results obtained, aspects A5 (customer) and A7 (external management) are extremely important. Meanwhile, enablers E18 (organisation/top management support), E2 (government regulation and legislation), and E14 (public and consumer pressure) ranked highest in achieving sustainable green logistics. This research will help researchers and logistics operations managers build an appropriate strategy before adopting sustainable green logistics services.

### **8. Study (Yunlin,2023)**

This study investigates the knowledge of logistics professionals at Jingdong, a Chinese e-commerce company, about the sustainability and environmental effects of green logistics standards, certifications, and technology. Using stratified snowball sampling, the researchers gathered 309 questionnaire-based surveys. Descriptive statistics, chi-square tests, and regression analysis were used to evaluate the data. According to the findings, about one-third of the organization's logistics experts are aware of the advantages that logistics operations have for the environment, and a comparable percentage acknowledges the significance of sustainable development. Green logistics technology, standards, and certification were heavily impacted by the categories of logistical activities and years of industry expertise. The study also discovered that different logistics specialists' backgrounds and classifications influence how well-received green logistics technology is in the company. As a result, the study suggests that Dingdong should strengthen the implementation of relevant logistics policies and increase awareness

among logistics practitioners regarding green logistics technology, standards, and certification.

## 9. Study (Liu et al.,2023)

This review does a systematic review with a focus on China in order to address the lack of a thorough assessment of the body of research currently available on green logistics. The authors employed a systematic literature review technique to gather papers on green logistics from 2010 to 2020. The review focuses on green packaging, green warehousing, and green shipping, highlighting important aspects of green logistics in transportation and logistics organizations. Since 2016, the quantity of publications published in this topic has substantially increased. Still, further research is needed in a few areas, including topographic transportation, smart green logistics, gaps in technology, and the green logistics cycle model.

### • Discussion of results

1. The results showed the interest of companies in adopting green logistics accounting processes in a way that ensures that they provide environmental information that is useful in financial reports to extrapolate markets and work to reduce environmental energy consumption and benefit investors and other stakeholders.
2. Companies' interest in green logistics accounting operations with the aim of providing ways to determine appropriate environmental and financial costs to reduce environmental impacts and achieve economic savings in a way that improves companies' performance.

3. Companies are keen to adopt green logistics accounting processes to improve their reputation and obtain a competitive advantage that contributes to improving companies' financial disclosures and including information about environmental initiatives in companies' reports.

4. Companies' interest in achieving compatibility between green accounting logistics operations, environmental regulations, and sustainable development standards to achieve the best compliance with environmental preservation and reduce risks to it.

5. Companies focus on using a risk management strategy by relying on environmentally friendly standards and demonstrating green accounting logistical operations proactively and contributing to satisfying customers' preferences and desires.

#### • **Recommendations**

1. The need for companies to develop accounting systems that document the costs and benefits of green accounting logistics operations in order to ensure the identification of the best financial and environmental indicators related to developing appropriate mechanisms for collecting information to benefit investors and the company itself.

2. The need for companies to focus on enhancing the transparency of disclosure of green accounting logistics information in order to clarify the efforts made and the results achieved in the field of green accounting.

3. The need for companies to pay attention to opening training workshops to support employees' awareness of taking responsibility for preserving the environment and influencing financial reports, which requires understanding

the approved environmental policies and practices to transmit and evaluate the financial impact of companies.

4. The need to enhance cooperation between companies and suppliers to achieve green accounting logistics and improve financial reporting through the use of accounting technology related to green accounting logistics.

5. The need to focus on participating in sustainable initiatives in order to ensure the achievement of important initiatives to improve accounting financial reports.

#### • **References**

1. Al-Shaer, H. (2020). Sustainability reporting quality and post-audit financial reporting quality: Empirical evidence from the UK. *Business Strategy and the Environment*, 29(6), 2355–2373.
2. An, H., Razzaq, A., Nawaz, A., Noman, S. M., & Khan, S. A. R. (2021). Nexus between green logistic operations and triple bottom line: evidence from infrastructure-led Chinese outward foreign direct investment in Belt and Road host countries. *Environmental Science and Pollution Research*, 28(37), 51022–51045.
3. Anser, M. K., Yousaf, Z., & Zaman, K. (2020). Green technology acceptance model and green logistics operations: “to see which way the wind is blowing”. *Frontiers in Sustainability*, 1, 3.
4. Anser, M. K., Yousaf, Z., & Zaman, K. (2020). Green technology acceptance model and green logistics operations: “to see which way the wind is blowing”. *Frontiers in Sustainability*, 1, 3.

5. Appannan, J. S., Mohd Said, R., Ong, T. S., & Senik, R. (2023). Promoting sustainable development through strategies, environmental management accounting and environmental performance. *Business Strategy and the Environment*, 32(4), 1914–1930.
6. Arvidsson, S., & Dumay, J. (2022). Corporate ESG reporting quantity, quality and performance: Where to now for environmental policy and practice?. *Business Strategy and the Environment*, 31(3), 1091–1110.
7. Baah, C., Amponsah, K. T., Issau, K., Ofori, D., Acquah, I. S. K., & Agyeman, D. O. (2021). Examining the interconnections between sustainable logistics practices, environmental reputation and financial performance: a mediation approach. *Vision*, 25(1), 47–64.
8. Hussein, A. G., & Jasim, S. A. (2023). Employing Buzz Marketing As One Of Promotion Tools To Deal With Dynamic Purchasing Behaviour Of Smartphones. *Spectrum Journal of Innovation, Reforms and Development*, 16, 87–97.
9. Jasim, S. A., Hussein, A. G., & Mohammed, K. K. (2023). Product Aesthetic And Brand Loyalty As Drivers Of Brand Psychological Brand Ownership: An Exploratory Study Of The Opinions Of A Sample Of Customers Of Smartphone Brands Companies. *Galaxy International Interdisciplinary Research Journal*, 11(7), 287–299.
10. Jayarathna, C. P., Agdas, D., & Dawes, L. (2023). Exploring sustainable logistics practices toward a circular economy: A value creation perspective. *Business Strategy and the environment*, 32(1), 704–720.

11. Karaman, A. S., Kilic, M., & Uyar, A. (2020). Green logistics performance and sustainability reporting practices of the logistics sector: The moderating effect of corporate governance. *Journal of Cleaner Production*, 258, 120718.
12. Li, Y., Lin, Y., Lim, M. K., Xiong, W., Huang, X., Shi, Y., & Su, J. (2023). An intelligent distribution system for green logistics operations in the blockchain environment. *International Journal of Logistics Research and Applications*, 1-24.
13. Liu, A., Osewe, M., & Shi, Y. (2023). Green logistics in China: a systematic literature review. *International Journal of Logistics Systems and Management*, 45(1), 88-107.
14. Marín-Rodríguez, N. J., González-Ruiz, J. D., & Valencia-Arias, A. (2023). Incorporating Green Bonds into Portfolio Investments: Recent Trends and Further Research. *Sustainability*, 15(20), 14897.
15. Mohsin, A. K. M., Tushar, H., Hossain, S. F. A., Chisty, K. K. S., Iqbal, M. M., Kamruzzaman, M., & Rahman, S. (2022). Green logistics and environment, economic growth in the context of the Belt and Road Initiative. *Heliyon*, 8(6).
16. Ren, R., Hu, W., Dong, J., Sun, B., Chen, Y., & Chen, Z. (2020). A systematic literature review of green and sustainable logistics: bibliometric analysis, research trend and knowledge taxonomy. *International journal of environmental research and public health*, 17(1), 261.

17. Roy, S., & Mohanty, R. P. (2023). Green logistics operations and its impact on supply chain sustainability: An empirical study. *Business Strategy and the Environment*.
18. Scarpellini, S. (2021). Social indicators for businesses' circular economy: multi-faceted analysis of employment as an indicator for sustainability reporting. *European Journal of Social Impact and Circular Economy*, 2(1), 17-44.
19. Shoaib, M., Zhang, S., & Ali, H. (2023). Assessment of sustainable green logistics enablers: a robust framework using fuzzy DEMATEL and ISM approach. *International Journal of Environmental Science and Technology*, 20(10), 11407-11426.
20. Singh, S. K., & Roy, S. (2020). Internet of Things (IoT) Based Green Logistics Operations for Sustainable Development in the Indian Context. In *Nanoelectronics, Circuits and Communication Systems: Proceeding of NCCS 2018* (pp. 301-313). Springer Singapore.
21. Yunlin, C. (2023). Awareness of green logistics technology, certification, and standards by logistics practitioners at Chinese e-commerce company, Jing Dong. *The Asian Journal of Shipping and Logistics*, 39(4), 37-46.