European Journal of Research Development and Sustainability (EJRDS)
Available Online at: https://www.scholarzest.com
Vol. 5 No. 2, February 2024
ISSN: 2660-5570

SUPPLY CHAIN MANAGEMENT PRACTICES AND SUSTAINABILITY PERFORMANCE OF MANUFACTURING COMPANIES IN NIGERIA

By

OFOEGBU, Wilson Chukwuemeka
Department of Management,
Faculty of Management Sciences,
University of Port Harcourt, Rivers State, Nigeria.

and

LAGUO, Livingstone Gilbert
Department of Business Administration,
Faculty of Management Science
Federal University Otuoke

Article history:

Received 14th December 2023
Accepted: 10th January 2024
Published: 20th February 2024

Abstract:

This research explores the correlation between supply chain management practices and the sustainability performance of manufacturing companies operating in Nigeria. The study is primarily theoretical, drawing insights from existing literature on the subject matter. Analysis of the literature indicates a positive correlation between two key sustainable supply chain management practices—sustainable procurement and reverse logistics—and the sustainability performance of manufacturing firms. Therefore, it is concluded that to foster positive impacts on sustainability performance, supply chain management practices must integrate sustainable approaches such as sustainable procurement and reverse logistics. In light of these findings, managers and owners of manufacturing companies in developing markets like Nigeria are encouraged to: prioritize efforts in enhancing employees' awareness of sustainability and promoting a culture of sustainable procurement and reverse logistics across their supply chains (including employees, wholesalers, distributors, and consumers) to achieve sustainable manufacturing and environmental preservation. Additionally, they should formalize sustainable supply chain activities such as sustainable procurement and reverse logistics by embedding them into their strategic plans and enforcing stringent guidelines. By doing so, these organizations can enhance their sustainability performance by minimizing uncertainty, defining sustainability objectives, optimizing operations, boosting employee morale, meeting customer demands, and reducing waste.

Keywords: *Management Practices, Supply Chain, Sustainability Performance, Sustainable Procurement, Reverse Logistics, Sustainable Supply Chain Management Practices*

1.1 INTRODUCTION

Education and economic development are two intertwined pillars that shape the trajectory of societies worldwide. The relationship between education and economic development is multifaceted, dynamic, and crucial for fostering prosperity, innovation, and social progress. This introduction sets the stage for a comprehensive exploration of the intricate connections between education and economic development, examining their interdependencies, challenges, and transformative potentials. Education, as a fundamental human right and a cornerstone of sustainable development, plays a pivotal role in shaping individual capabilities, enhancing human capital, and fostering inclusive growth (UNESCO, 2015). Access to quality education empowers individuals with knowledge, skills, and opportunities, enabling them to participate effectively in economic activities, civic engagement, and community development (Psacharopoulos & Patrinos, 2018). Moreover, education serves as a catalyst for innovation, entrepreneurship, and technological advancement, driving productivity gains and economic competitiveness in a rapidly evolving global landscape (Hanusch & Pyka, 2007).

In the context of economic development, education emerges as a key determinant and driver of long-term prosperity, social mobility, and poverty reduction (Barro & Lee, 2013). Empirical evidence suggests a strong correlation between levels of education attainment, income growth, and overall well-being within societies (Hanushek & Woessmann, 2015). Nations that prioritize investments in education, human capital development, and lifelong learning tend to experience higher levels of economic resilience, social cohesion, and sustainable development outcomes (Schultz, 1961). The nexus between education and economic development transcends national boundaries, encompassing a diverse array of factors, contexts, and policy considerations. From early childhood education to tertiary training, from vocational skills development to lifelong learning initiatives, education systems play a pivotal role in equipping individuals with the competencies and adaptability required to thrive in an increasingly complex and interconnected world (OECD, 2019). Moreover, education fosters critical thinking, creativity, and social capital, laying the foundation for inclusive societies, democratic governance, and participatory decision-making processes (Sen, 1999).

Despite the recognized importance of education in driving economic development, disparities in access, quality, and relevance persist across regions, communities, and demographic groups (World Bank, 2018). Marginalized populations, including girls, minorities, and persons with disabilities, continue to face barriers to education, perpetuating cycles of poverty, inequality, and social exclusion (UNESCO, 2021). Moreover, rapid technological advancements, demographic shifts, and environmental challenges are reshaping the global labor market, requiring education systems to adapt and innovate to meet evolving skill demands and employment opportunities (World Economic Forum, 2020).

The 21st century presents both unprecedented challenges and transformative opportunities for education and economic development. The emergence of digital technologies, artificial intelligence, and automation is revolutionizing the nature of work, redefining traditional career pathways, and creating new opportunities for innovation and entrepreneurship (Brynjolfsson & McAfee, 2014). In this rapidly changing landscape, education systems must embrace flexibility, inclusivity, and relevance to prepare individuals for the jobs of the future, equip them with the skills to navigate uncertainty, and empower them to contribute meaningfully to society (Fullan, 2014). At the same time, the COVID-19 pandemic has underscored the importance of resilient education systems capable of adapting to crises, leveraging digital platforms, and ensuring continuity of learning for all (UNESCO, 2020). The pandemic has exacerbated existing educational inequalities, highlighting the urgent need for targeted interventions, innovative pedagogical approaches, and collaborative partnerships to address learning loss, bridge digital divides, and build back better (UNESCO, 2021).

In light of these challenges and opportunities, it is imperative to deepen our understanding of the complex relationship between education and economic development and to identify effective strategies for harnessing their synergies to drive sustainable growth, social inclusion, and human flourishing. This research endeavors to explore the interplay between education and economic development across diverse contexts, drawing on interdisciplinary perspectives, empirical evidence, and best practices from around the world. One central aspect of this inquiry involves examining the role of education in fostering human capital formation, innovation, and productivity enhancement within economies. By investing in education, countries can unlock the potential of their citizens, cultivate a skilled workforce, and stimulate technological progress and industrial diversification (Mankiw et al., 1992). Moreover, education serves as a catalyst for social mobility, poverty reduction, and inclusive economic growth, enabling individuals to escape the cycle of poverty and contribute to the prosperity of their communities (Deininger & Squire, 1998).

Another critical dimension of this investigation pertains to the impact of economic development on educational outcomes, access, and equity. As economies evolve and transform, they create both opportunities and challenges for education systems, shaping curriculum priorities, funding allocations, and educational infrastructure investments (World Bank, 2018). Understanding the pathways through which economic development influences education policies, practices, and outcomes is essential for designing targeted interventions and policy reforms that promote quality education for all (Psacharopoulos & Patrinos, 2018). Furthermore, this research seeks to explore the role of education in addressing contemporary global challenges, including environmental sustainability, social justice, and inclusive growth. Education serves as a powerful tool for raising awareness, building resilience, and fostering a culture of sustainability and responsibility among individuals, communities, and institutions (UNESCO, 2014). By integrating sustainability principles into curricula, promoting environmental literacy, and fostering values of stewardship and citizenship, education can empower future generations to become agents of positive change and champions of sustainable development (Sterling, 2001).

In addition to examining the macro-level dynamics of education and economic development, this research endeavors to explore micro-level factors, including teacher quality, curriculum relevance, and student engagement, that shape educational outcomes and economic opportunities at the individual level (Hanushek & Rivkin, 2010). By delving into the nuances of teaching and learning processes, school management practices, and community engagement strategies, this

research seeks to identify effective interventions and best practices for improving educational access, quality, and equity in diverse settings (Glewwe & Kremer, 2006). Ultimately, this research aspires to generate insights, evidence, and recommendations that inform policy decisions, programmatic interventions, and scholarly discourse on the complex interplay between education and economic development. By fostering dialogue, collaboration, and knowledge exchange among researchers, policymakers, practitioners, and communities, this endeavor seeks to catalyze positive change and contribute to the realization of a more equitable, sustainable, and prosperous future for all.

The relationship between education and economic development is multifaceted, dynamic, and essential for advancing human welfare and societal progress. By exploring the intersections between education and economic development across various domains, this research aims to shed light on the mechanisms, challenges, and opportunities inherent in this critical nexus. Through rigorous inquiry, interdisciplinary collaboration, and evidence-based advocacy, we can strive to build more inclusive, resilient, and prosperous societies where every individual has the opportunity to thrive and contribute to the common good.

1.2 Aim and Objective

The primary aim of this study is to assess the relationship between supply chain management practices and the sustainability performance of manufacturing firms in Nigeria. Specifically, the study aims to:

i. Determine the correlation between sustainable procurement and sustainability performance.
ii. Examine the connection between reverse logistics and sustainability performance.

1.3 Significance of the Study

This study holds importance for academia, stakeholders, and society. Firstly, it addresses a gap in existing literature by exploring the link between supply chain management practices and sustainability performance in developing economies, offering insights into the unique aspects of sustainability practices in these regions and how organizations can align with sustainability goals.

Secondly, the study's findings provide contemporary recommendations for enhancing sustainability performance through process reengineering, benefiting stakeholders in the manufacturing sector.

Lastly, it serves as a foundation for future research endeavors to advance our comprehension of supply chain management practices and sustainability performance, paving the way for deeper insights and innovations in sustainable business practices.

Natural Resource-Based View Theory

The Natural Resource-Based View (NRBV) theory is a conceptual framework that seeks to explain how firms can gain sustainable competitive advantage by leveraging their natural resource endowments, capabilities, and environmental assets (Barney, 1991; Wernerfelt, 1984). Unlike traditional resource-based views that focus primarily on tangible and intangible resources, the NRBV theory emphasizes the strategic importance of natural resources, such as land, water, minerals, forests, and biodiversity, in shaping firm performance and competitiveness (Hart, 1995). At the core of the NRBV theory is the recognition that natural resources represent a unique source of competitive advantage that is both valuable and rare (Barney, 1991). While tangible and intangible resources can be imitated or substituted, natural resources are inherently scarce and non-replicable, making them a critical determinant of firm success in industries characterized by resource dependency and environmental sensitivity (Hart, 1995). For firms operating in sectors such as agriculture, mining, forestry, and renewable energy, effective management and utilization of natural resources can create significant value and differentiation in the marketplace (Porter, 1995).

One key proposition of the NRBV theory is that firms must develop dynamic capabilities and institutional arrangements to harness the potential of their natural resource endowments (Hart, 1995; Wernerfelt, 1984). This involves not only extracting and exploiting natural resources efficiently but also ensuring their sustainable use and conservation over the long term (Porter, 1995). Sustainable resource management practices, such as land stewardship, water conservation, biodiversity protection, and carbon footprint reduction, are increasingly recognized as strategic imperatives for firms seeking to enhance their environmental performance and social license to operate (Hart, 1995). Furthermore, the NRBV theory highlights the

role of institutions, regulations, and stakeholder engagement mechanisms in shaping firms' natural resource strategies and outcomes (Porter, 1995). In many industries, government policies, environmental regulations, and community expectations impose constraints and incentives on firms' natural resource management practices (Hart, 1995). Firms that proactively engage with regulators, civil society organizations, and local communities to address environmental concerns and social impacts are more likely to build trust, mitigate risks, and secure access to critical natural resources (Barney, 1991).

Moreover, the NRBV theory underscores the importance of strategic alliances, partnerships, and collaborative initiatives in enhancing firms' natural resource competitiveness (Hart, 1995; Porter, 1995). Given the interconnected nature of natural resource systems and the complexity of environmental challenges, no single firm can address sustainability issues in isolation (Porter, 1995). Collaborative approaches, such as value chain integration, supply chain certification, ecosystem restoration, and green innovation networks, enable firms to pool resources, share knowledge, and co-create value with stakeholders across the value chain (Hart, 1995).

Critics of the NRBV theory argue that it overlooks the dynamic and context-specific nature of natural resource markets and fails to account for the social and political dimensions of resource governance (Hart, 1995; Porter, 1995). In reality, natural resource endowments are often subject to geopolitical tensions, regulatory uncertainties, and market fluctuations, which can undermine firms' ability to leverage their resources effectively (Barney, 1991). Moreover, the sustainability of natural resource-based competitive advantage hinges not only on firms' internal capabilities but also on their ability to adapt to evolving market conditions, technological disruptions, and stakeholder expectations (Porter, 1995). In conclusion, the Natural Resource-Based View theory offers valuable insights into the strategic significance of natural resources in driving firm performance and competitiveness. By recognizing the unique attributes of natural resources and their role in shaping industry dynamics, firms can develop sustainable strategies that create value for shareholders, society, and the environment (Barney, 1991). However, realizing the full potential of natural resource-based competitive advantage requires firms to adopt a holistic approach that integrates environmental stewardship, social responsibility, and stakeholder engagement into their core business operations (Porter, 1995).

2.2 Conceptual Review

Supply Chain Management Practices

Supply chain management (SCM) practices have emerged as critical components of modern business operations, encompassing a range of activities aimed at optimizing the flow of materials, information, and finances from suppliers to end customers (Chopra & Meindl, 2021). Effective SCM practices enable firms to enhance efficiency, reduce costs, mitigate risks, and improve customer satisfaction throughout the supply chain (Christopher, 2016). This section explores key SCM practices and their significance in today's dynamic business environment.

One fundamental aspect of SCM is demand forecasting and planning, which involves anticipating customer demand, aligning production schedules, and optimizing inventory levels to meet customer requirements while minimizing excess inventory and stockouts (Simchi-Levi et al., 2015). Accurate demand forecasting relies on data analytics, market insights, and collaboration with customers and suppliers to anticipate changes in demand patterns and adapt production and distribution strategies accordingly (Chopra & Meindl, 2021).

Another critical SCM practice is supplier relationship management (SRM), which entails developing collaborative partnerships, fostering trust, and enhancing communication with suppliers to optimize sourcing, procurement, and supplier performance (Monczka et al., 2015). Effective SRM involves supplier evaluation, selection, and development, as well as ongoing performance monitoring and improvement initiatives to ensure alignment with quality, cost, and delivery objectives (Monczka et al., 2015).

Inventory management is also a key SCM practice that focuses on optimizing inventory levels, minimizing holding costs, and maximizing inventory turnover rates across the supply chain (Simchi-Levi et al., 2015). Just-in-time (JIT) inventory systems, lean principles, and advanced inventory planning tools enable firms to streamline operations, reduce waste, and respond rapidly to changes in customer demand and market conditions (Chopra & Meindl, 2021).

Moreover, transportation and logistics management play crucial roles in SCM, encompassing the planning, execution, and optimization of transportation routes, modes, and networks to ensure timely delivery, minimize transportation costs, and maximize service levels (Christopher, 2016). Advances in technology, such as GPS tracking, route optimization software, and real-time visibility tools, have revolutionized transportation management, enabling firms to enhance efficiency, traceability, and transparency across the supply chain (Simchi-Levi et al., 2015).

Warehousing and distribution represent other essential SCM practices focused on optimizing storage facilities, material handling processes, and order fulfillment operations to minimize lead times, reduce carrying costs, and enhance order accuracy (Chopra & Meindl, 2021). Automated warehousing systems, barcode technology, and RFID tracking enable firms to improve inventory visibility, enhance order picking efficiency, and adapt quickly to changing customer demands (Simchi-Levi et al., 2015).

Furthermore, information technology (IT) and supply chain integration are critical enablers of effective SCM, facilitating seamless communication, data exchange, and collaboration among supply chain partners (Chopra & Meindl, 2021). Enterprise resource planning (ERP) systems, electronic data interchange (EDI), and cloud-based platforms enable firms to integrate and synchronize key business processes, from order management to production scheduling to logistics coordination, across the entire supply chain (Christopher, 2016).

SCM practices are integral to the success and competitiveness of modern businesses, enabling firms to optimize operational efficiency, reduce costs, mitigate risks, and enhance customer satisfaction throughout the supply chain (Simchi-Levi et al., 2015). By adopting proactive approaches to demand forecasting, supplier relationship management, inventory optimization, transportation logistics, warehousing, and IT integration, firms can build agile, resilient supply chains capable of adapting to changing market dynamics and customer preferences (Chopra & Meindl, 2021).

Sustainability Performance

Sustainability performance has become increasingly important in the business world as organizations recognize the need to balance economic growth with environmental stewardship and social responsibility (Elkington, 1997). Sustainability performance refers to the extent to which organizations integrate environmental, social, and governance (ESG) factors into their operations, decision-making processes, and stakeholder engagements (Lozano, 2015). This section explores key dimensions of sustainability performance and their significance in driving long-term value creation and resilience in today's complex and interconnected world.

One fundamental aspect of sustainability performance is environmental stewardship, which involves minimizing environmental impacts, conserving natural resources, and promoting ecological sustainability (Lozano, 2015). Organizations strive to reduce their carbon footprint, energy consumption, and waste generation through initiatives such as renewable energy adoption, waste reduction programs, and pollution prevention measures (Schaltegger et al., 2018). Moreover, sustainable supply chain management practices, such as green procurement, sustainable sourcing, and product lifecycle assessments, enable organizations to extend their environmental responsibilities beyond internal operations to include upstream and downstream activities (Carter & Rogers, 2008).

Social responsibility represents another critical dimension of sustainability performance, encompassing organizations' commitments to human rights, labor practices, community engagement, and diversity and inclusion (Carroll, 1991). Organizations seek to create positive social impacts by promoting fair labor practices, ensuring safe and healthy working conditions, and supporting community development initiatives (Matten & Moon, 2008). Moreover, corporate social responsibility (CSR) programs, philanthropic activities, and stakeholder engagement efforts enable organizations to build trust, enhance reputation, and foster meaningful relationships with employees, customers, suppliers, and communities (Maignan & Ferrell, 2004).

Furthermore, governance and ethics play crucial roles in sustainability performance, encompassing organizations' commitment to transparency, accountability, and ethical behavior in their governance structures and business practices (Aguilera et al., 2007). Strong corporate governance frameworks, independent board oversight, and robust risk management systems help organizations mitigate risks, prevent misconduct, and uphold integrity and trust in their operations (Solomon, 2010). Moreover, ethical leadership, responsible decision-making, and adherence to codes of conduct and industry standards enable organizations to build credibility, inspire confidence, and demonstrate their commitment to ethical business practices (Trevino et al., 2006).

In addition to environmental, social, and governance dimensions, sustainability performance also encompasses economic viability and long-term value creation (Elkington, 1997). Sustainable businesses strive to achieve financial stability, profitability, and shareholder value while also considering the broader impacts of their operations on society and the environment (Eccles et al., 2011). Sustainable business models, circular economy principles, and impact investing initiatives enable organizations to align financial objectives with social and environmental goals, driving innovation, resilience, and competitive advantage (Hart, 1995).

Moreover, sustainability reporting and disclosure play crucial roles in enhancing transparency, accountability, and stakeholder engagement around sustainability performance (Gray et al., 1995). Organizations communicate their sustainability initiatives, performance metrics, and progress toward sustainability goals through annual sustainability reports, integrated reporting frameworks, and ESG disclosures (GRI, 2016). By providing stakeholders with comprehensive and transparent information about their sustainability efforts and impacts, organizations can build trust, manage expectations, and demonstrate their commitment to sustainable development (KPMG, 2020).

Sustainability performance represents a holistic and integrated approach to business management that balances economic, environmental, and social considerations to drive long-term value creation and resilience (Elkington, 1997). By embracing environmental stewardship, social responsibility, governance excellence, and economic viability, organizations can navigate today's complex and interconnected challenges while also contributing to a more sustainable and equitable future for all stakeholders (Lozano, 2015).

Sustainable Procurement and Sustainability Performance

Sustainable procurement practices have emerged as critical drivers of sustainability performance for organizations across various sectors, reflecting the growing recognition of the interconnectedness between supply chain activities and environmental, social, and governance (ESG) outcomes (Seuring & Müller, 2008). Sustainable procurement involves integrating environmental, social, and ethical considerations into purchasing decisions and supplier relationships to promote responsible sourcing, reduce negative impacts, and create long-term value for stakeholders (Carter & Rogers, 2008).

One key aspect of sustainable procurement is supplier selection and evaluation, which involves assessing suppliers' ESG performance, capabilities, and adherence to sustainability standards and certifications (Carter & Rogers, 2008). By prioritizing suppliers with strong ESG credentials, organizations can mitigate supply chain risks, enhance transparency, and promote responsible business practices throughout their supply chains (Seuring & Müller, 2008). Moreover, engaging suppliers in sustainability initiatives, capacity-building programs, and collaborative partnerships can foster innovation, drive continuous improvement, and create shared value for both buyers and suppliers (Carter & Rogers, 2008).

Another critical dimension of sustainable procurement is product and service specifications, which involves defining environmental and social criteria for the goods and services procured by organizations (Seuring & Müller, 2008). By setting sustainability requirements and performance standards for suppliers, organizations can promote the adoption of eco-friendly materials, energy-efficient technologies, and socially responsible production practices across their supply chains (Carter & Rogers, 2008). Moreover, incorporating sustainability considerations into product design, development, and packaging can minimize environmental impacts, optimize resource efficiency, and enhance product lifecycle performance (Seuring & Müller, 2008).

Furthermore, sustainable procurement practices encompass contract management and supplier engagement, which involve establishing clear expectations, performance metrics, and incentives for suppliers to comply with sustainability requirements and deliver positive social and environmental outcomes (Carter & Rogers, 2008). By integrating sustainability clauses, codes of conduct, and reporting mechanisms into supplier contracts, organizations can hold suppliers accountable for meeting ESG standards, disclosing performance data, and implementing corrective actions when necessary (Seuring & Müller, 2008). Moreover, fostering open dialogue, mutual trust, and collaboration with suppliers can facilitate knowledge sharing, capacity-building, and innovation diffusion across the supply chain (Carter & Rogers, 2008).

In addition to supplier management, sustainable procurement practices also encompass stakeholder engagement and transparency, which involve communicating sustainability goals, performance metrics, and progress reports to internal and external stakeholders (Seuring & Müller, 2008). By engaging employees, customers, investors, and civil society organizations in sustainability initiatives and decision-making processes, organizations can build trust, enhance reputation, and demonstrate their commitment to responsible business practices (Carter & Rogers, 2008). Moreover, transparent reporting on supply chain sustainability performance, risks, and opportunities enables stakeholders to make informed decisions, hold organizations accountable, and drive continuous improvement in sustainability performance (Seuring & Müller, 2008).

Sustainable procurement plays a pivotal role in driving sustainability performance by integrating environmental, social, and ethical considerations into purchasing decisions and supply chain operations (Carter & Rogers, 2008). By adopting sustainable procurement practices, organizations can promote responsible sourcing, reduce supply chain risks, and create long-term value for stakeholders (Seuring & Müller, 2008). Moreover, sustainable procurement contributes to building

resilient, transparent, and socially inclusive supply chains that are better equipped to address emerging sustainability challenges and capitalize on new business opportunities in a rapidly changing world.

Sustainable Procurement Practices

Sustainable procurement practices yield positive impacts on markets, economies, eco-industries, natural resource conservation, and job creation, all fostering sustainable development (Islam et al., 2017). In recent years, these practices have gained traction due to research highlighting their potential to bolster business profitability. For instance, Chan and Wong (2012) illustrated how environmentally responsible purchasing can trim total expenses and boost net profitability. Efficient procurement entities have slashed costs by up to 12 percent (Bobis & Staniszewski, 2009). Sustainable procurement drives innovation, curbs overall production expenses (Porter & van der Linde, 1995), and enhances financial performance by leveraging excess resources to mitigate risks linked to adopting environmentally friendly supply-side practices (Menguc et al., 2010). However, Murakami and Kimbara (2015) found no direct correlation between environmentally responsible purchasing and key financial metrics like return on assets and sales.

Despite the potential benefits, some challenges persist. Implementing sustainable procurement may entail higher initial costs, necessitate changes in supplier relationships, and demand compliance with stringent environmental standards. Nonetheless, the long-term advantages, including improved brand reputation, reduced operational risks, and enhanced resilience to market fluctuations, underscore the importance of integrating sustainable procurement practices into business strategies. As organizations increasingly recognize the imperative of sustainability, sustainable procurement emerges as a crucial driver of competitive advantage and long-term viability in the global marketplace.

Moreover, sustainable procurement aims to enhance employees' quality of life by improving working conditions, safety, efficiency, transparency, and reliance on renewable resources. McMurray et al. (2014) demonstrated that sustainable procurement engagement enhances organizational working environments, efficiency, and transparency. Roos (2012) attributed Chile's strong development performance to the implementation of sustainable procurement practices, particularly in transparency, efficiency, and natural resource reuse. Diab et al. (2015) found significant improvements in the quality and operational performance of Jordan's food industries with the implementation of green procurement. Environmental practices and supplier integration positively correlate with performance, as evidenced by Kim and Chai (2017).

Reverse Logistics and Sustainability Performance

Reverse logistics involves the strategic planning, execution, and management of the efficient and cost-effective movement of materials and information from consumption back to their origin points for value recapture or proper disposal (Rachih et al., 2019). Many companies utilize reverse logistics as a strategic tool to gain economic benefits and enhance their corporate social standing (Han & Trimi, 2018; Karaman et al., 2020). Proficient management of product returns is crucial for achieving business success (Batarfi et al., 2017; Lakhmi et al., 2019). It is a process that emphasizes sustainability by minimizing waste and maximizing resource utilization. Through effective reverse logistics, organizations can streamline operations, reduce costs, and mitigate environmental impact. Moreover, it enhances customer satisfaction by ensuring smooth return processes and supports circular economy initiatives by promoting reuse, refurbishment, and recycling. Skillful execution of reverse logistics contributes to a more sustainable and resilient supply chain while also bolstering corporate competitiveness and reputation in the market.

Reverse logistics contributes to environmental performance by reducing energy consumption, waste, and pollution through recycling, thereby achieving environmental excellence and addressing community concerns (Narayana et al., 2018). Economically, it evaluates performance through recovered product value, cost containment, reduced inventory investment, and improved productivity and profitability (Kabak et al., 2019). It serves as a regulatory strategy to prevent environmental degradation, aligning with moral responsibility and social sustainability. Additionally, reverse logistics creates job opportunities and enhances social performance through human resource contribution in recycling processes (Al-Abrrow et al., 2020).

Reverse logistics significantly contributes to improving sustainability performance by increasing revenues, providing recyclable products, reducing costs, considering social and environmental aspects, and enhancing customer satisfaction and loyalty. It offers businesses a competitive edge and enhances their public image by improving cost management, distribution, inventories, and environmental performance (Alnoor et al., 2019).

3.1 CONCLUSION AND MANAGERIAL IMPLICATIONS

The study aimed to investigate the correlation between supply chain management practices and the sustainability performance of Nigerian manufacturing firms. The literature review emphasizes integrating sustainability considerations into supply chain management to enhance sustainability performance positively. Two vital sustainable supply chain management practices, sustainable procurement, and reverse logistics, were analyzed. They were found to have a positive association with sustainability performance when integrated into the supply chain activities of manufacturing companies in Nigeria. This suggests that adopting sustainable procurement and reverse logistics can contribute significantly to improving sustainability outcomes within the manufacturing sector.

These findings have significant managerial implications for manufacturing firms, especially those in developing countries like Nigeria. Managers in emerging markets must prioritize raising employees' awareness of sustainability and cultivating a culture of sustainable procurement and reverse logistics across the entire supply chain, including employees, wholesalers, distributors, and consumers. Collaboration with retailers, distributors, and consumers is essential for effective waste recovery and the implementation of sustainable practices, thus mitigating adverse impacts on future generations. Embracing sustainable sourcing and reverse logistics can enhance corporate social responsibility and improve companies' image in the market.

It is imperative for manufacturing companies in developing countries to formalize sustainable supply chain activities by integrating sustainable procurement and reverse logistics strategies into their strategic plans and enforcing strict guidelines. By doing so, organizations can enhance their sustainability performance by reducing uncertainty, defining clear sustainability goals, optimizing operations, boosting employee morale, meeting customer requirements, and minimizing waste.

In summary, manufacturing companies in developing countries like Nigeria stand to benefit significantly from embracing sustainable supply chain management practices. By prioritizing sustainability, they can enhance their competitiveness, meet stakeholder expectations, and contribute to environmental conservation and social responsibility, ultimately fostering long-term success and resilience in the global market.

REFERENCES

1. Aksoy, M., Yilmaz, M. K., Tatoglu, E., & Basar, M. (2020). Antecedents of corporate sustainability performance in Turkey: The effects of ownership structure and board attributes on non-financial companies. *Journal of Cleaner Production*, 276, 124284.
2. AL-Abrrow, H., Al-Maatoq, M., Alharbi, R. K., Alnoor, A., Abdullah, H. O., Abbas, S., & Khattak, Z. Z. (2020). Understanding employees' responses to the COVID-19 pandemic: The attractiveness of healthcare jobs. *Global Business and Organizational Excellence, 40*(2), 19-33.
3. Alnoor, A., Eneizan, B., Makhamreh, H. Z., & Rahoma, I. A. (2019). The effect of reverse logistics on sustainable manufacturing. *International Journal of Academic Research in Accounting, Finance and Management Sciences, 9*(1), 71-79.
4. Alzubia, E., & Akkermanb, R. (2022). Sustainable supply chain management practices in developing countries: An empirical study of Jordanian manufacturing companies. *Cleaner Production Letters, 2,* 1-15.
5. Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management, 17*(1), 99-120.
6. Barraza, M. F. S., Davila, J. M. A., & Garcia, C. F. V. (2016). Supply chain value stream mapping: A new tool of operation management. *International Journal of Quality & Reliability Management, 33*(4), 518-534.
7. Batarfi, R., Jaber, M. Y., & Aljazzar, S. M. (2017). A profit maximization for a reverse logistics dual-channel supply chain with a return policy. *Computers & Industrial Engineering*, *106,* 58-82.
8. Bobis, V., & Staniszewski, J. (2009). Making the case for sustainable 'green' procurement. IBM Global Business Services. http://www-935.ibm.com/services/us/gbs/bus/pdf/sustainable_procurement_bobis_staniszewski.pdf
9. Carter, C. R., & Jennings, M. M. (2002). Social responsibility and supply chain relationships. *Transportation Research Part E: Logistics and Transportation Review, 38*(1), 37–52.
10. Chan, T. Y., & Wong, C. W. (2012). The consumption side of sustainable fashion supply chain: Understanding fashion consumer eco-fashion consumption decision. *Journal of Fashion Marketing and Management: An International Journal*, *16,* 193–215.
11. DEFRA. (2006). *Procuring the future—The SP task force national action plan*. Department for Environment, Food and Rural Affairs: London, UK.
12. Diab, S. M., Al-Bourini, F. A., & Abu-Rumman, A. H. (2015). The impact of green supply chain management practices on organizational performance: A study of Jordanian food industries. *Journal of Management and Sustainability, 5*, 149.
13. Falke S. (2022). *The impact of the food and beverage industry: The un-tasty truth.* Planetly. The impact of the food and beverage industry (planetly.com)

14. Ghosh, M. (2019). Determinants of green procurement implementation and its impact on firm performance. *Journal of Manufacturing Technology Management*, *30*(2), 462–482.
15. Giunipero, L. C., Hooker, R. E., & Denslow, D. (2012). Purchasing and supply management sustainability: Drivers and barriers. *Journal of Purchasing and Supply Management, 18*(4), 258–269.
16. Han, H., & Trimi, S. (2018). From e-commerce to social commerce: management of reverse logistics. *Decision Line*, 49(1), 17-20.
17. Hart, S. L. (1995). A natural-resource-based view of the firm. *Academy of Management Review, 20*(4), 986-1014.
18. Islam, Md. M., Turki, A., Murad, Md. W., & Karim, A. (2017). Do sustainable procurement practices improve organizational performance? *Sustainability*, *9*(12), 1-17.
19. Jaklic, J., Trkman, P., Groznik, A., & Stemberger, M. I. (2006). Enhancing lean supply chain maturity with business process management. *Journal of Information and Organizational Sciences, 30*(2), 205–223.
20. Kabak, Ö., Ekici, Ş. Ö., & Ülengin, F. (2019). Analyzing two-way interaction between the competitiveness and logistics performance of countries. *Transport Policy*, *98*, 238-246.
21. Kähkönen, A., Lintukangas, K., & Hallikas, J. (2018). Sustainable supply management practices: Making a difference in a firm's sustainability performance. *Supply Chain Management: An International Journal, 23*(1), 518–530.
22. Kaihan, Y., & Chin, T. A. (2021). Revisit the effect of reverse logistics practices on sustainability performance. *International Journal of Academic Research in Business and Social Sciences, 11*(11), 2093–2110.
23. 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.
24. Khan, S. A. R., Yu, Z., Golpira, H., Sharif, A., & Mardani, A. (2021). A state-of-the-art review and meta-analysis on sustainable supply chain management: Future research directions. *Journal of Cleaner Production*, *278*, 123357.
25. Kim, M., & Chai, S. (2017). Implementing environmental practices for accomplishing sustainable green supply chain management. *Sustainability*, *9*(7), 1192.
26. Kim, S., Colicchia, C., & Menachof, D. (2018). Ethical sourcing: An analysis of the literature and implications for future research. *Journal of Business Ethics, 152,* 1033–1052.
27. Kshetri, N. (2021) *Blockchain and supply chain management.* Joe Hayton.
28. Kücükgül, E., Cerin, P., & Liu, Y. (2022). Enhancing the value of corporate sustainability: An approach for aligning multiple SDGs guides on reporting. *Journal of Cleaner Production, 333,* 130005.
29. Lakhmi, N., Sahin, E., & Dallery, Y. (2019). Proposition of a Framework for classifying returnable transport items closed-loop/reverse logistics issues. *IFAC-PapersOnLine*, *52*(13), 1955-1960.
30. Lis, A., Sudolska, A., & Tomanek, M. (2020). Mapping research on sustainable supply-chain management. *Sustainability, 12*(10), 3987.
31. Lozano, R. (2018). Proposing a definition and a framework of organisational sustainability: A review of efforts and a survey of approaches to change. *Sustainability*, 10(4), 1157.
32. McMurray, A. J., Islam, M. M., Siwar, C., & Fien, J. (2014). Sustainable procurement in Malaysian organizations: Practices, barriers and opportunities. *Journal of Purchasing and Supply Management*, *20*(3), 195-207.
33. Menguc, B., Auh, S., & Ozanne, L. (2010). The interactive effect of internal and external factors on a proactive environmental strategy and its influence on a firm's performance. *Journal of Business Ethics*, *94*(2), 279-298.
34. Mensah, J., & Casadevall, S. R. (2019). Sustainable development: Meaning, history, principles, pillars, and implications for human action: Literature review. *Cogent Social Sciences, 5*(1), 1-21.
35. Murakami, K., & Kimbara, T. (2015). Does CSR enhance the transfer of environmental practices to overseas subsidiaries? *Journal of Business Administration Research*, *4*(2), 1-8.
36. Muthugala, S., & Nayagam, N. (2012). *Incorporating the triple bottom line in public procurement.* Balancing Social, Environmental and Economic Considerations in Procurement; United Nations: New York, NY, USA, 30-33.
37. Nakov, Z., Acevski, S., & Zareski, R. (2014). Implementation of supply chain management (SCM) in pharmaceutical company, general principles and case study. *Macedonian Pharmaceutical Bulletin, 60*(2), 75–82.
38. Narayana, S. A., Pati, R. K., & Padhi, S. S. (2018). Market dynamics and reverse logistics for sustainability in the Indian Pharmaceuticals industry. *Journal of Cleaner Production, 208,* 968-987.
39. Orazalin, N. (2019). Corporate governance and corporate social responsibility (CSR) disclosure in an emerging economy: Evidence from commercial banks of Kazakhstan. *Corporate Governance, 19*(3), 490–507.
40. Panigrahi, S. S., & Bahinipati, B. (2019). Sustainable supply chain management: A review of literature and implications for future research. *Management and Environmental Quality: An International Journal, 30*(5), 1001-1049.
41. Porter, M., & van der Linde, C. (1995). Green and competitive: Ending the stalemate. *Harvard Business Review, 73,* 120–134.
42. Rachih, H., Mhada, F. Z., & Chiheb, R. (2019). Meta-heuristics for reverse logistics: a literature review and perspectives. *Computers & Industrial Engineerin*g, *127,* 45–62.

43. Roos, R. (2012). *Prerequisites for sustainable public procurement in developing countries.* Balancing Social, Environmental and Economic Considerations in Procurement; United Nations: New York, NY, USA, 38-42.
44. Sánchez-Flores, R. B., Cruz-Sotelo, S. E., Ojeda-Benitez, S., & Ramírez-Barreto, M. E. (2020). Sustainable supply chain management-A literature review on emerging economies. *Sustainability, 12*(17), 6972.
45. Sasu, D. D. (2022). *Share of Gross Domestic Production (GDP) generated by the manufacturing sector in Nigeria as of 2020, by activity*. Statista. https://www.statista.com/statistics/1207933/share-of-gdp-from-manufacturing-sector-in-nigeria/
46. Schrobback, P., & Meath, C. (2020). Corporate sustainability governance: Insight from the Australian and New Zealand port industry. *Journal of Cleaner Production*, *255,* 1-12.
47. Shekarian, E., Ijadi, B., Zare, A. & Majava, J. (2022). Sustainable supply chain management: A comprehensive systematic review of industrial practices. *Sustainability, 14,* 1-30.
48. Shi, V. G., Koh, S. C., Baldwin, J. S., & Cucchiella, F. (2012). Natural resource based green supply chain management. *Supply Chain Management: An International Journal, 17*(1), 54-67.
49. Székely, F., & Knirsch, M. (2005). Responsible leadership and corporate social responsibility: Metrics for sustainable performance. *European Management Journal,* 23(6), 628-647.
50. Tseng, M. L., Ha, H. M., Lim, M. K., Wu, K. J., & Iranmanesh, M. (2020). Sustainable supply chain management in stakeholders: Supporting from sustainable supply and process management in the healthcare industry in Vietnam. *International Journal of Logistics Research and Applications*, *25*(4-5), 364-383.
51. Tseng, M. L., Lim, M. K., & Wu, K. J. (2018). Corporate sustainability performance improvement using an interrelationship hierarchical model approach. *Business Strategy and the Environment, 27*(8), 1334–1346.
52. Vanguard (2022). Nigeria's manufacturing sector risks imminent shutdown as gas supply shortages threaten continued operations. https://www.vanguardngr.com/2022/08/nigerias-manufacturing-sector-risks-imminent-shutdown-as-gas-supply-shortages-threaten-continued-operations/
53. Wang, D. F., Dong, Q. L., Peng, Z. M., Khan, S., & Tarasov, A. (2018). The green logistics impact on international trade: Evidence from developed and developing countries. *Sustainability, 10*(7), 1-19.
54. Zorzini, M., Hendry, L. C., Huq, F. A., & Stevenson, M. (2015). Socially responsible sourcing: Reviewing the literature and its use of theory. *International Journal of Operations & Production Management, 35*(1), 60–109.