

Sustainable Procurement Financing and Supply Chain Performance: A Paradigm Shift towards Sustainable Development

Arimie, Biebele Emmanuel, PhD1, Bamson, Tamunoene Jones, PhD2

1Procurement Department, University of Port Harcourt, Choba, Rivers State, Nigeria
+234(0)8032514225

biebelearimie@gmail.com

2Department of Accounting, Ignatius Ajuru University of Education, Rumuolumeni, Rivers State, Nigeria
+234(0)8055805932
tamunoenebamson@gmail.com

Abstract: *This paper reviewed literature on sustainable procurement financing and supply chain performance, and introduces sustainable procurement financing as a transformative paradigm to bridge the gap between procurement's function focus on cost and quality, in relation to finance's function concentration on liquidity and risk in an organization, which had created procurement financing gap for sustainability, vis-a-vis supply chain performance. Departing from prior research that primarily uses financial and operational metrics, this paper proposes a novel triple-framework for measuring supply chain performance through the lens of sustainable development, which includes operational cost, carbon emissions, and community relations. The review demonstrates that sustainable procurement financing mechanisms such as green bonds, sustainability-linked loans, and green supply chain finance can directly optimize operational expenditures, mitigate environmental impact, and foster robust community stakeholder relationships. The findings posit that sustainable procurement financing is not merely a funding mechanism but a strategic capability that generates long-term value, resilience, and a sustained competitive advantage. The paper concludes with pragmatic and actionable recommendations for practitioners, policymakers, and future research to operationalize this paradigm.*

Keywords—sustainable procurement; financing; supply chain performance; sustainable development

1. INTRODUCTION

The growing importance of sustainability in business generally, and the need for better funding models in procurement financing with a view to incentivize suppliers and contractors to adopt environmentally, economically, and socially responsible practices is crucial to enhancing supply chain activities [1,2]. This is because it can reduce risks, improve performance, and create long-term value for all stakeholders [2]. Sustainable procurement financing is critical for strategically guiding financial resources toward achieving sustainable procurement in order to ensure that organizations spending promote environmental protection, social equity, and economic development [1].

The attainment of effective and efficient result in supply chain activities is central to the achievement of positive outcomes or results in a corporate supply chain process [3]. A formidable means of assessing performance in supply chain activities is the achievement of expected results through cost-effectiveness, speed, quality and flexibility [4]. In essence, in order to guarantee cost-effectiveness, speed, quality and flexibility in a supply chain process, organizations must focus on achieving efficient and effective supply chain activities [5]. Practically, organizations spend a lot of money managing their supply chains because it is a complex and capital-intensive process that is critical for business success. However, old-style procurement and finance functions have over the years functioned in isolation on issues of sustainability, with procurement focusing on cost and quality, while finance concentrates on liquidity and risk management. Consequently, this detachment has generated a procurement financing gap for sustainability which requires a paradigm to close the gap.

Typically, supply chain activities encompass the entire expenditure involved in transforming raw materials into finished products and delivering them to the end customer [6]. Thus, it is vital for organizations to assess their supply chain activities in order to identify inefficiencies, reduce costs, improve customer satisfaction, gain competitive advantage, and ensure timely and accurate delivery of products and services [5]. Essentially, organizations utilize sustainable procurement financing strategies in order align financial goals with environmental, social, and economic sustainability objectives. Practically, these strategies can influence prudent financial management, long-term sustainability and financial stability. Basically, the main elements that a well-performing supply chain touches are product costs, delivery timeframe, product quality, customer experience, and business resilience [4]. These elements can be realized significantly through the level of finance invested in the supply chain process [7].

According to [3] supply chain performance measurement (SCPM) provides the means by which a company can assess whether its supply chain has improved or degraded. Moreover, the categories of measuring supply chain performance include Financial Performance Measurement Systems, Activity-Based Costing, Economic Value Added, Non-Financial Performance Measurement Systems, Supply Chain Balanced Scorecard, Supply Chain Operations Reference Model, Dimension-based Measurement Systems, and Interface-based Measurement Systems [3]. Others include Perspective-based Measurement Systems, Hierarchical-based Measurement Systems, Function-based Measurement Systems, Efficiency-based Measurement Systems, and Generic Performance Measurement Systems. From the foregoing, this paper adopts Perspective-based Measurement Systems as the measures of supply chain performance by evaluating the role of operational cost, carbon emissions and community relations in excellent supply chain performance achievement through the application of sustainable development policy. A sustainable development policy is a government and societal framework to meet current needs without compromising future generations' ability to meet their own needs, achieved by balancing economic growth, social inclusion, and environmental protection [8].

Sustainable procurement financing includes the integration of the principles of green financing into procurement transactions. It is not only based on the acquisition of goods and services and being ethically responsible, but it encompasses financial mechanisms that supports sustainable financing processes that aligns with the sustainability practices for the attainment of improved operational cost, carbon emissions and community relations in supply chain activities.

Sustainable development is the process of providing the required environmental, economic and social resources to meet the needs of the present human race without compromising the ability of future generations to meet their own needs. Practically, sustainable development represents an integrated and transformative global development paradigm that is crucial for balancing economic growth, social inclusion, and environmental protection in order to meet present needs without compromising future generations' ability to meet their own in every aspect of human endeavor, including supply chain procurement financing and management [8].

Prior studies have been conducted in the area of sustainable procurement and performance management [7,9-11]. These studies have established a clear link between sustainable procurement and performance management by exploring how a focus on environmental, social, and economic factors in purchasing can lead to improved business outcomes [7,9-11]. However, studies on sustainable procurement financing and supply chain performance are scarce. From the foregoing, no study adopted operational cost, carbon emissions and community relations as the measures of supply chain performance for the realization of sustainability objectives. Against this backdrop, it is our belief that and we thus propose that Sustainable Procurement Financing is a paradigm that is likely to positively impact Supply Chain Performance.

2. LITERATURE REVIEW

2.1 Concept of Sustainable Procurement Financing

Sustainable procurement is an all-inclusive approach, where purchasing processes are made to encompass the social, environmental, and economic impacts of goods, services, and works acquisition, beyond just cost and quality. It involves integrating principles of sustainable development into buying decisions and supply chain management to promote positive social change, minimize environmental damage, and ensure long-term economic viability for both the organization and its stakeholder [11]. Financing sustainable procurement involves leveraging financial mechanisms to support the purchasing of goods, services, and works that generate benefits for the environment, society, and the economy throughout their life cycle. This approach addresses the initial cost barrier associated with sustainable products and shifts the focus to long-term value [2].

Sustainable procurement financing refers is a sustainable practice where funds for the procurement of goods, works and services are streamlined to promote environmental protection, social justice, and economic empowerment by influencing the purchase of environmentally friendly and ethically sourced goods and services that contribute to the triple bottom line (people, planet, profit). This approach seeks to accelerate the adoption of sustainability by making it easier for businesses to invest in and implement these practices within their procurement processes [1]. Similarly, Sustainable Procurement Financing is a strategic approach that integrates environmental, social, and economic criteria into the financial decisions related to acquiring goods, works, and services. Sustainable financial management in procurement integrates environmental, social, and economic factors into the purchasing process to generate long-term value, rather than focusing only on immediate cost savings [2].

Thus, for the purpose of this paper, Sustainable Procurement financing is the process of making financial expenses for sustainable procurement activities through sustainable planning, sustainable budgeting, sustainable sourcing, sustainable payment and analysis of expenses in alignment to the acquisition of sustainable goods, works and services.

Procurement financing provides working capital to businesses to fulfill contracts by covering upfront costs for goods and services, effectively managing cash flow from the moment a contract is secured until payment is received [12]. Sustainability in procurement financing involves integrating environmental, social, and governance criteria into the entire procurement and financial process, from supplier selection to contract management, to achieve long-term value and minimize negative impacts. This practice

goes beyond traditional cost-focused purchasing to consider the whole life cycle costs and benefits for the planet, people, and profit, ultimately reducing risks and improving a company's reputation, operational efficiency, and bottom line [13].

Sustainable procurement financing is supported by a system of policies, evaluations, and tools that integrate environmental, social, and economic considerations into purchasing decisions. Essentially, performing sustainable procurement financing includes green financing practices in procurement. Green financing provides the financial mechanisms to pay for projects and activities that have environmental benefits. By applying green finance principles directly to procurement, it provides the necessary funding for a company's sustainable purchasing goals. Green procurement financing refers to the financial strategies and support mechanisms used to enable organizations to purchase environmentally friendly goods and services, which can include government incentives, subsidies, and investments in green technology. It supports sustainable procurement by providing capital to overcome initial cost barriers and foster green innovation, thereby promoting circular economy principles, reducing emissions, and enhancing corporate reputation and financial performance [13].

Nowadays, there are Sustainable Procurement Financing models which promote sustainability. They include Green Bonds and Loans - funds rose explicitly for sustainable projects, Sustainability-Linked Loans - loans where the interest rate is tied to the borrower's achievement of Environmental, Social and Governance targets, and Green Supply Chain Finance - A model where suppliers who meet sustainability criteria receive more favourable financing terms like lower interest rates on early payment.

2.2 Concept of Supply Chain Performance

Supply chain performance is the measure of a supply chain's efficiency, speed, quality, cost-effectiveness, and customer satisfaction, assessed by metrics like output, on-time delivery, cost control, inventory turnover, and cash-to-cash time [5]. It involves synchronizing all processes from raw material sourcing to final delivery to enhance competitiveness, reduce waste, and achieve strategic objectives by aligning with market demands [6].

Organizations focus on supply chain performance to achieve competitive advantages, enhance customer satisfaction, and increase profitability by reducing costs, improving efficiency, and ensuring timely product delivery [14]. Effective supply chain management minimizes waste, streamlines operations, builds stronger supplier relationships and provides the agilities to meet evolving customer demands and market conditions [5]. Typically, examining supply chain performance is crucial for improving efficiency, reducing costs, identifying risks, achieving strategic goals, and enhancing customer satisfaction by providing data to measure and manage the entire supply chain value network. Through metrics like inventory utilization, storage space efficiency, and on-hand inventory days, organizations can identify areas needing improvement, make informed decisions, and ensure their supply chain supports their competitive strategy, whether that's low prices, product availability, or responsiveness. Similarly, assessing supply chain performance is critical because it provides the data and insights necessary to improve business outcomes, remain competitive, and respond to the demands of a dynamic market. By systematically evaluating key metrics, companies can identify inefficiencies, reduce costs, increase profitability, and ensure customer satisfaction. Performance management is a core function of supply chain management that uses metrics to evaluate how well supply chain activities achieve their set targets and overall business objectives, such as profitability and customer satisfaction [6].

Typically, there are many supply chain performance indicators. These include efficiency, cost-effectiveness, supplier reliability, cost savings, risk management, customer satisfaction, operational metrics, financial health, and environmental sustainability [14].

2.2 Operational Cost

Operational cost is the expenses incurred in the day-to-day running of supply chain activities [14]. The daily expenses incurred in running a supply chain include the costs of procurement, inventory, warehousing, transportation, labor, and technology. Operational costs are central to supply chain management (SCM) because they directly impact a company's profitability, competitiveness, and ability to meet customer needs. Managing these costs through strategies like optimizing inventory, streamlining transportation and logistics, improving supplier relationships, and leveraging technology can reduce expenses, enhance efficiency, improve customer satisfaction, and ultimately drive sustainable growth [1].

Operational cost is a critical yardstick for supply chain performance because it directly reflects the efficiency and profitability of every stage of the supply chain, from sourcing of raw materials to final delivery [14]. By managing and optimizing these costs, a company can achieve a competitive advantage. Additionally, operational cost is essential in a supply chain because managing it effectively improves profitability, customer satisfaction, and overall business sustainability by optimizing resource utilization, ensuring timely delivery, and enabling a more competitive pricing strategy [1].

Apart from this, achieving operational excellence can be necessitated through effective operational cost management. This is because it promotes waste reduction, enhances efficiency, and improves resource utilization, which in turn boosts profitability and provides a competitive advantage. Essentially, operational costs are tools for determining effective sustainable supply chain performance as they are applied to drive innovation in order to reduce waste, optimize resource use, and enhance efficiency so as to

ultimately achieve long-term cost savings and increased profitability [15]. Sustainable practices improve efficiency by cutting waste, enhancing resource management, mitigating risks, and building a strong brand reputation, which creates value beyond mere cost reduction [15]. Typically, operational costs are intertwined with sustainable development because sustainable practices often reduce ongoing expenses by driving energy and resource efficiency, waste reduction, and the use of renewable energy sources, ultimately creating long-term financial savings for businesses and societies. While initial investments may be required, sustainable operational strategies lead to greater long-term cost-effectiveness, decreased resource consumption, enhanced efficiency, and greater resilience [1].

2.4 Carbon Emissions

Carbon emissions are the release of carbon dioxide and other greenhouse gases into the atmosphere [16]. Supply chain carbon emissions are the greenhouse gases produced during the entire product and service lifecycle, from raw material extraction to customer use and end-of-life disposal [16]. These emissions often constitute the majority of a company's carbon footprint, with raw material production and heavy industries being significant contributors, alongside transportation [16]. Companies can reduce these emissions by adopting strategies like using renewable energy, optimizing logistics, designing sustainable packaging, and collaborating with suppliers to improve environmental performance [17].

A formidable process of achieving effective supply chain performance is based on adequate carbon emission tracking, management and control. This is particularly true as effective supply chain performance is increasingly based on adequate carbon emission tracking and control [17]. The complex, global nature of modern supply chains means that a company's environmental impact often extends far beyond its direct operations, sometimes accounting for over 90% of its total emissions. Managing and reducing these emissions not only addresses climate change but also drives cost savings, improves brand reputation, and mitigates risks. Controlling carbon emissions is vital for supply chain performance because it leads to cost savings through efficiency, improves brand reputation and customer loyalty, ensures regulatory compliance and mitigates future risk, enhances supply chain resilience, and attracts investors and talent seeking sustainable practice [16]. Additionally, managing carbon emissions for sustainable supply chains requires integrating eco-friendly practices like adopting renewable energy, improving energy efficiency, and optimizing logistics across raw material sourcing, manufacturing, distribution, and end-of-life stages [16].

2.5 Community Relations

Community relations refer to an organization's ongoing effort to build and maintain positive, mutually beneficial relationships with the communities it operates in. Community relations play a critical and multifaceted role in supply chain performance by mitigating risks, enhancing brand reputation, and fostering collaboration that drives both efficiency and long-term sustainability [18].

Community relations are essential in a supply chain to build trust, reduce risks, improve operational efficiency, and drive long-term sustainability. A company's supply chain is not isolated; it is embedded within local communities that supply resources, labor, and infrastructure [19]. Proactive engagement with these communities creates mutual value, turning local stakeholders into active partners. Assessing community relations is crucial for identifying community needs, fostering trust and positive reputation, ensuring strategic alignment of an organization's activities with community interests, enabling effective resource allocation, and promoting long-term mutual benefit between the organization and its community. It provides data to improve engagement, build stronger partnerships, and ultimately support community growth and organizational success [8].

Additionally, assessing community relations in a supply chain process is crucial for obtaining a "social license to operate," which fosters trust and collaboration with local stakeholders [19]. A strong assessment helps mitigate significant operational and reputational risks, drives business performance, and enhances the entire supply chain's resilience and sustainability [20]. Managing community relations to achieve sustainable development within a supply chain requires a proactive, transparent, and collaborative approach. This strategy integrates a company's business goals with the interests and well-being of the communities affected by its operations. It is a critical component of achieving the social dimension of the triple bottom line namely; People, Planet, and Profit, leading to improved brand reputation, reduced risk, and greater resilience for the entire supply chain [19]. A community relations role in the supply chain is vital for integrating corporate social responsibility and driving sustainable development. It fosters trust and collaboration with local communities, which provides the resources and stable environments necessary for a supply chain's long-term success [20]. Effective community relations ensure that a company's operations positively contribute to the social well-being of its host communities, rather than just focusing on profit [18].

Sustainable procurement financing involves integrating environmental, social, and economic criteria into financial arrangements in the acquisition of goods, works and services [7]. This model encourages suppliers to adopt sustainable practices by offering them preferential financing terms, such as lower interest rates, improved cash flow, and reduced financial risk. Essentially, financial arrangements in the acquisition of goods, works, and services involve a range of financial methods and instruments used to facilitate transactions between a buying organization and its suppliers. These arrangements help manage costs, mitigate financial risks, and ensure timely payment and delivery [12].

Organizations manage their funds strategically to achieve strong supply chain performance, ultimately leading to greater profitability, resilience, and competitiveness [12]. This practice is known as financial supply chain management (FSCM) and involves optimizing the financial flows within and across the supply chain network [7]. Investigating the role of sustainable procurement financing is crucial because it transforms traditional procurement from a cost-focused activity into a strategic tool that drives overall supply chain achievement. By linking finance to environmental, social, and governance performance, companies can create a more resilient, transparent, and profitable supply chain. In sustainable procurement practice, green procurement financing arrangements are used to provide capital to support the purchase of goods, works, and services that have minimal harmful effects on the environment. These arrangements help both public and private sector organizations acquire sustainable products and services, despite perceived higher initial costs. Consequently, by incorporating environmental criteria into the procurement process, these arrangements are instrumental in achieving sustainability goals through the reduction of environmental footprints, and the promotion of a circular economy [1].

3. CONCLUSION

This study has conducted a literature review on Sustainable Procurement Financing (SPF) and enhanced supply chain performance, framed within the paradigm of sustainable development. The study concludes that the traditional silos separating procurement and finance are untenable in the face of modern sustainability challenges. Therefore, SPF has emerged as a critical strategic integrator, channeling financial incentives to align supply chain activities with the triple bottom line of people, planet, and profit. By adopting a novel performance measurement framework comprising operational cost, carbon emissions, and community relations, this paper moves beyond conventional financial metrics to capture the true essence of sustainable supply chain excellence. The review demonstrates that SPF directly contributes to performance by: (1) driving down long-term Operational Costs through investments in efficiency and waste reduction; (2) enabling the capital expenditure required to monitor and reduce carbon emissions across the value chain; and (3) building the social capital and trust with communities that underpin operational stability and brand reputation.

4. RECOMMENDATIONS

For Practitioners:

1. Develop Integrated SPF Strategies: Move beyond ad-hoc green projects. Formulate a formal SPF strategy that aligns corporate sustainability goals with procurement budgets and financial mechanisms.
2. Implement Preferential Financing Terms: Adopt green supply chain finance models where suppliers who demonstrably meet verified sustainability performance targets (e.g., lower carbon emissions, strong community relations audits) receive preferential financing rates and payment terms.
3. Invest in Measurement Capabilities: Develop robust internal systems to track and report on the three proposed performance metrics (Operational Cost, Carbon Emissions, Community Relations) to quantify the return on investment from SPF initiatives.

For Policymakers and Financial Institutions:

1. Create Enabling Regulatory Frameworks: Introduce tax incentives, guarantees, or subsidies for companies that utilise verified SPF instruments like green bonds or sustainability-linked loans for procurement activities.
2. Standardise ESG Reporting: Mandate or encourage standardised reporting on supply chain carbon emissions and community impact, creating a level playing field and reliable data for financial decision-making.
3. Support Green Lending Practices: Encourage banks and financial institutions to develop specialised SPF products and build their capacity to assess the sustainability performance of corporate borrowers.

For Academia and Future Research:

1. Empirical Validation: This study's conceptual model requires empirical testing. Future research should employ quantitative methods (e.g., structural equation modeling) using primary data from manufacturing or service firms to validate the hypothesised relationships between SPF and the three performance indicators.
2. Cross-Industry and Cross-Cultural Analysis: Investigate the application and effectiveness of SPF across different industries (e.g., extractive vs. technology) and cultural contexts to identify potential moderating factors.
3. Explore Digital Enablers: Research the role of digital technologies like Blockchain and Artificial Intelligence in enhancing the transparency, traceability, and risk assessment of sustainable procurement financing.

REFERENCES

-
- [1] Sinha, A., Mishra, S., Sharif, A., & Yarovaya, L., (2021). Does green financing help to improve environmental & social responsibility? Designing SDG framework through advanced quantile modelling. *Journal of Environmental Management*, 292, 112751. <https://doi.org/10.1016/j.jenvman.2021.112751>
- [2] Kumar, L., Nadeem, F., Sloan, M., Restle-Steinert, J., Deitch, M.J., Naqvi, S.A., Kumar, A., & Sassanelli, C., (2022). Fostering Green Finance for Sustainable Development: A Focus on Textile and Leather Small Medium Enterprises in Pakistan. *Sustainability*, 14 (19), 11908. <https://doi.org/10.3390/su141911908>
- [3] Agami, N., Saleh, M., & Rasmy, M. (2012). Supply Chain Performance Measurement Approaches: Review and Classification. *Journal of Organizational Management Studies*, 1-20, DOI: 10.5171/2012.872753\
- [4] Gupta, T. (2024). Supply Chain Performance Measurement: How to Measure Performance in Supply Chain Management. Retrieved from <https://cleartax.in/s/supply-chain-performance-measurement>
- [5] Li, X., Yan, J., Cheng, J., & Li, J. (2023). Supply-Chain Finance and Investment Efficiency: The Perspective of Sustainable Development. *Sustainability*, 15(10), Doi/org/10.3390/su15107867
- [6] Song, H., Huang, Q.Y., & Yang, Y.D. (2021). The impact of financial and supply chain oriented supply chain finance on enterprise performance. *Journal of Management* 18, 760–768
- [7] Zhou, L., & Wu, H.J. (2022). Supply Chain Finance and Product Market Performance. *Finance and Economics Research*, 37, 99–112.
- [8] Dinbabo, M.F. (2025). Sustainable Development Goals (SDGs) and Policy Frameworks for Development in Africa. *New Agenda*, 96. DOI: [10.14426/na.v96i1.2518](https://doi.org/10.14426/na.v96i1.2518)
- [9] Mann, B., & Kaur, H. (2019). Sustainable Supply Chain Activities and Financial Performance: An Indian Experience. *Vision the Journal of Business Perspective*, 24(3), DOI: [10.1177/0972262919863189](https://doi.org/10.1177/0972262919863189)
- [10] Saedifar, K. (2024). Sustainable Supply Chain Management Practices and Impact on Business Performance in UK Small and Medium Enterprises. *International Journal of Economics and Business Management*, 10(1), 308-331
- [11] Habila, Y. M., Ozurumba, B. A., Akujuobi, A.B.C., & Ubah, C. P. (2025). The Effect of Sustainable Procurement Practices on Organizational Performance: A Study of Selected Manufacturing Companies in Nigeria. *Iconic Research and Engineering Journals*, 9 (1), 1699-1711
- [12] Ramadhan, A., & Gomera, W. (2022). The impact of financial aspect on procurement procedures in achieving sustainable public procurement: A case of Zanzibar urban services project. *International Journal of Research in Business and Social Science*, 11(10):265-276. DOI: [10.20525/ijrbs.v11i10.2147](https://doi.org/10.20525/ijrbs.v11i10.2147)
- [13] Khan, K.I., Mata, M.N., Martins, J.M., Nasir, A., Dantas, R.M., Correia, A.B., & Saghir, M.U., (2022). Impediments of Green Finance Adoption System: Linking Economy and Environment. *Emerging Science Journal*, 6 (2), 217–237. <https://doi.org/10.28991/esj-2022-06-02-02>
- [14] Phillips, S. (2025). Supply Chain KPIs for Better Business Results. <https://www.slimstock.com/blog/supply-chain-kpis/>
- [15] Borja, C. (2025, October 9). Sustainable practices to boost operational efficiency. Retrieved from <https://www.timedoctor.com/blog/sustainability-operational-efficiency/>
- [16] Choudhury, T., Kayani, U.N., Gul, A., Haider, S.A., & Ahmad, S. (2023). Carbon emissions, environmental distortions, and impact on growth. *Energy Economics*, 126 (22), 10-17
- [17] Wang, & Wang, C. (2023). Green finance and technological innovation in heavily polluting enterprises: evidence from China. *International Journal of Environmental Research and Public Health*, 4(4), 20-40
- [18] Autor, C. (2025, May 27). What Is Community Relations? Building Trust Between Organizations and Communities. Retrieved from: <https://www.designrush.com/agency/public-relations/trends/what-are-community-relations>
- [19] Endiana, D.M., Dicriyani, N. M. Adiyadnya, M. S.P., & Putra, P. M. J. S. (2020). The Effect of Green Accounting on Corporate Sustainability and Financial Performance. *Journal of Asian Finance, Economics and Business*, 7(12), 731–738
- [20] Igbodo, B.I., Igbodo, A. A & Okoye, E. (2019). Impact of Social Responsibility Accounting on the Performance of Corporate Organizations in Nigeria: A Study of Selected Companies. *International Journal of Innovative Finance and Economics Research*, 7(1), 56-68