

Full Length Research

Sustainable Public Procurement and Supply Chain Competitiveness of Federal Universities in Nigeria

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Accepted 27 May 2025

This study investigated the linkage between sustainable public procurement and supply chain competitiveness within the context of federal universities in Nigeria. The study adopted the explanatory research design. The population of the study consist of sixty- two federal universities operating in Nigeria. To ensure proper coverage of the universities, one respondent was drawn from each of the universities for the survey, thereby making a total of 62 respondents. A self- administered questionnaire served as the research instrument. The data was analyzed using the Spearman's rank correlation statistics with the aid of statistical package for social science version 25.0. The result of the analysis showed that a significant and positive relationship exist between sustainable public procurement and measures of supply chain competitiveness (innovativeness, cost reduction and optimal resource utilization) of federal universities in Nigeria. The study concluded that sustainable public procurement has significant and positive relationship with supply chain competitiveness of federal universities in Nigeria. The study therefore, recommended that procurement directors of federal universities should adopt sustainable procurement as a strategy to boost supply chain competitiveness in terms of innovativeness, cost reduction and optimal resource utilization, while also improving performance.

Keywords: Sustainable Public Procurement, Innovativeness, Cost Reduction, Optimal Resource Utilization, Supply Chain Competitiveness

Citation: Isoghom, HW., Worgu, PO (2025). Sustainable Public Procurement and Supply Chain Competitiveness of Federal Universities in Nigeria. Inter. J. Econ. Bus. Manage. Vol. 13(2), pp. 33-43

INTRODUCTION

A key economic activity of the government is public procurement, defined as the purchase of goods and services by governmental or public sector entities (Gelderman, Semeijn & Vluggen, 2017). The government uses public procurement to achieve social objectives, including reducing unemployment rates, enhancing labour standards, providing work opportunities for those with disabilities, and promoting gender, racial, and ethnic equality. Public procurement is a critical element of a nation's developmental strategies, representing around 20 to 25 percent of Nigeria's GDP. In accordance with the principles of sustainable production and consumption, the United Nations Open Group on Sustainable Development Goals (SDGs) formally initiated the Sustainable Public Procurement (SPP) initiative in 2014 (UN, 2014). Consequently, SPP has emerged as a focal point for sustainable production and consumption, serving as a significant practical domain for advancing global sustainable development. Incorporating sustainable procurement in the acquisition of products, works, and services enables the procurement function to significantly reduce environmental degradation while

enhancing social and economic value (Suleiman, 2022). When obtaining commodities, works, or services for their operations, procurement organisations must evaluate three parameters: economic, social, and environmental elements (Shaikh & Channa, 2022).

The acquisition of construction materials and the execution of related works are primary activities for federal universities in Nigeria, necessitated by the ongoing requirement for repairs and renovations of existing structures to meet evolving customer demands (Ogunsanya et al., 2019). Procurement expenditures at federal institutions are significantly elevated, surpassing 60% of their annual budgets (Lateef, 2010). Ogunsanya et al. (2019) demonstrate that the procurement process in Nigeria is plagued by numerous inefficiencies, including insufficient sustainability knowledge among employees, inadequate transparency and governance, misalignment of procurement strategies, and the absence of a national policy statement delineating criteria for the implementation of sustainable procurement practices. Public companies do not prioritise sustainability considerations throughout the procurement process. In the procurement process, contracts are awarded based on the lowest bid rather than sustainability criteria.

Sustainable procurement is thought to save costs and diminish waste by critically assessing purchasing needs, lowering quantities where appropriate, conserving energy and water, encouraging reuse and recycling, minimising packaging, and enhancing transport efficiency (Suleiman, 2022). Sustainable procurement techniques may revolutionise markets, reduce costs, improve financial sustainability, augment the competitiveness of eco-industries within the supply chain, conserve natural resources, and stimulate job creation, so contributing to sustainable development. This research aims to investigate the correlation between sustainable public procurement and organisational supply chain competitiveness, using federal universities in Nigeria as a case study. The study was significant as it aimed to propose methods for Nigerian public institutions to integrate sustainability into their daily operations, considering the increasing global demand for organisations to endorse broader policy objectives such as resilience, environmental stewardship, inclusive economic development, and social protection.

LITERATURE REVIEW

Theoretical Framework

This study is based on institutional theory. The use of institutional theory has been in use since 1930 to comprehend organisations' responses to escalating requirements for environmental management (Nyile, 2016). Scott (1995) posits that institutions are social systems characterised by significant durability. Organisations function as both production systems and social-cultural systems. Consequently, organisational decisions and actions are restricted and shaped by the social behaviours, norms, and values present in the environment. Due to heightened public knowledge about organisational failures and environmental demands, organisations might attain legitimacy by minimising their environmental effect and demonstrating social responsibility. Meyer and Rowan (2016) posited that the institutional environment has a more significant impact on the formal structures and growth of an organisation than market forces. Consequently, organisations may sometimes feel compelled to embrace and comply with regulations and practices established by environmental pressures, despite this not being their initial intention. Organisations use sustainable procurement policies in response to institutional pressure, which may include adherence to environmental goals, compliance with rules and industry standards, or the mitigation of operational environmental effect beyond legislative mandates.

Concept of Sustainable Public Procurement.

Sustainable public procurement entails the integration of environmental, social, and economic factors by public procurement officials throughout the acquisition of goods, services, and works (Uttam & Le Lann Roos, 2015). The UNEP (2017) characterises sustainable public procurement as a procedure whereby public entities meet their needs for goods, services, works, and utilities, ensuring value for money throughout the entire life cycle, while producing advantages for both the organisation and society, and significantly reducing negative environmental effects. Sustainable public procurement is increasingly essential in supply chain management within the public sector, aligning with sustainability goals, as governments allocate significant resources for the acquisition of goods and services, representing over 25% of the domestic gross product (GDP) in many nations. Sustainable public procurement denotes the incorporation of broader social and environmental factors into the procurement practices of governmental or public sector entities. Sustainable buying and environmentally preferred purchasing are sometimes used synonymously; nonetheless, a difference exists between the two. Sustainable procurement highlights the effects of procurement on society, the environment, and a nation's economic health, whereas green procurement focusses explicitly on the environmental consequences and costs related to acquiring a product.

Mena et al. (2021) lists several benefits of sustainable procurement practices, such as improving an organization's supply chain operations and procurement, boosting the company's reputation, cutting down on waste, making better use of resources, and minimising expenses and procedures while increasing efficiency. By promoting, among other things, value for money, sustainable economic growth, reduced emissions of harmful substances and waste generation, improved health and safety standards in the workplace, and a more equitable and better society, sustainable public procurement aims to have a lasting positive impact on economic, social, and environmental issues (Bansal & Roth, 2000). If employees aren't familiar with the term or its benefits, it might be challenging to implement sustainable buying practices. However, companies will be able to properly adopt sustainable measures when they are specifically specified in the procurement statute and have the backing of senior management. Sustainability may reduce economic risk in certain circumstances, as Chkanikova and Scroufe (2021) shown. Success in the stock market, expansion, liquidity, and profitability are some of the economic outcomes that have traditionally been used to evaluate organisational performance throughout time (Hamann & Schiemann, 2021; Nasse, 2019).

Concept of Supply Chain Competitiveness

Febransyah and Camelia Goni (2020) assert that competitiveness within the supply chain context refers to the benefits one supply chain has over its counterparts. Logistics Network Competitiveness refers to the capacity of a supply chain to provide value to the customer in pursuit of a competitive edge. Supply Chain competitiveness denotes the capacity of a whole supply chain to achieve a competitive edge relative to other rival supply chains (Rajagopal, 2010; Verma & Seth, 2011). The competitiveness of supply chains has garnered increasing interest from researchers in operations and supply chain management (Febransyah & Camelia Goni 2020). Antai (2011) proposes a comprehensive definition of supply chain competitiveness, elucidating the distinction between competitiveness and competitive advantage, while contending that the literature lacks a definitive explanation of competitiveness. Competitiveness serves as the preliminary phase for participating in the competition. This stage involves companies endeavouring to develop competencies, efficiency, and effectiveness to provide value propositions for their consumers.

Developing one's skills and resources in order to compete is what we mean when we talk about being competitive. On the other hand, when a business acquires an advantage after joining the market, it is said to have a competitive advantage. The ability of a company to differentiate itself from rivals in a way that is both sustainable and efficient is known as a competitive advantage (Linda & Thabrani, 2021). It includes everything that makes a company unique from its rivals (Tukamuhabwa et al., 2021). For a business to have a competitive edge, it must be able to outperform its rivals in the same market. Cutting expenses, coming up with novel offerings, or delivering exceptional service to customers are all ways to do this. They mention Porter (2011) in their article (2022). When faced with competition, one possible outcome is to gain a competitive edge. Faster overall expenditure reduction, elimination of competitive threats, and capitalisation of market possibilities are the three pillars upon which a firm may build a competitive advantage (Sigalas 2015). By putting into place effective and efficient supply chain operations and processes, the business becomes competitive. To get an edge over the competition, nevertheless, a company need not outperform them. Getting the supply chain ready for high-value performance increases the chances of getting an edge over the competition.

One of the most important tools for getting ahead of the competition is a competitive supply chain. Because of globalisation, fast technical improvements, and the extensive use of information technology, supply chain competitiveness is crucial for enterprises to be the strategic emphasis. Developing strategies, reengineering, renovating, or refining processes, and forming partnerships are all necessary due to the strategic emphasis of the supply chain (Isoghom, Didia & Harcourt, 2022). To be competitive in the supply chain, different parts of the network must work together in harmony towards a common goal. According to the conceptual framework for supply chain competitiveness put out by Verma and Seth (2011), the term is used to describe the process by which certain inputs cause the supply chain to produce particular outputs. Supply chain competitiveness requires a number of inputs, including agility, coordination, collaboration, cooperation, synergy among partners, mass customisation, customer orientation, process orientation, demand management, and strategic partnerships. When producers, providers, and retailers work together, they may boost supply chain competitiveness. Competitiveness in the supply chain is defined by three factors: supplier competitiveness, manufacturer competitiveness, and distributor competitiveness.

Among the many paths to supply chain competitiveness are streamlined operations, happy customers, higher quality products, more profits, shorter processing times, met demand, optimal use of facilities, and so on (Verma & Seth, 2010). Companies may be compared based on their competitive advantage in price/cost, quality, reliability of delivery, innovation of products, and time to market (Maqbool et al., 2014). A competitive supply chain will lead to many benefits, including increased profits, new products and services, happy customers, and the capacity to adapt quickly to market demands. Quality, reactivity, flexibility, and inventory turnover are some of the operational competitiveness metrics used by Isoghom, Didia, and Harcourt (2022) to measure supply chain performance. When looking at supply chain competitiveness through

the lens of manufacturing competence, Ahn et al. (1999) identified four key dimensions: cost, quality, delivery, and flexibility. Supply chain competitiveness measures, such as resource utilisation, innovation, and adaptability, will be presented in the current inquiry.

Innovativeness.

The organization's innovativeness is denoted by its capacity to introduce innovation and its openness (Isoghom, Didia & Harcourt, 2022). It is the capacity to develop new products, processes, or concepts that results in a competitive advantage. It implies a willingness to confront new challenges and a receptiveness to change. It is a strategic capability that is dynamic and could be utilised to achieve success in the ever-changing business environment. Firms that are innovative are more receptive to change and more willing to identify and capitalise on niches. The concept of innovativeness is frequently employed as a metric to assess the degree of novelty of an innovation, and it is essential for improving quality and performance. Customers are not only users of services but also value co-creators with service suppliers, which makes them a source of innovation (Cui & Wu, 2016; Huarng, Cervera & Mas-Verdu 2018). Innovativeness is a collective perspective that is a defining characteristic of an organization's culture, characterised by a receptivity to new ideas. A proactive propensity to abandon old routines and pursue experimental ideas by pursuing new opportunities rather than capitalising on current strengths is implied by the term "innovativeness." In markets where consumer demands are subject to rapid change and differentiation is restricted, innovativeness frequently enhances the competitive positions of organisations by enabling the development, selection, and adaptation of a variety of strategies. In the literature, innovative firms are perceived as more adept at gratifying consumers, adapting to uncertainty, and withstanding volatile demand.

A company's innovativeness may be measured by how often it tries new things, how creatively it improves its operations, how often it introduces new goods and services to the market first, and how often it experiments with new ideas. According to Isoghom, Harcourt, and Didia (2022), innovativeness is often used to measure how original an invention is, and it is crucial for enhancing performance and quality. A company's innovativeness, as an internal capacity, is a key factor in determining its competitive advantage and commercial success. According to research by Rhee, Park, and Lee (2010), innovativeness is defined as the ability to generate and implement novel, action-oriented ideas inside an organisation. When it's there, it forces businesses to implement a system for turning possibilities into action. Organisations lacking in innovation may invest in market research, but they fail to incorporate the findings into their daily operations. The perception of innovation is that it is a complex process that involves identifying and implementing new ideas, products, processes, and technologies in order to address the demands of customers while navigating technical and environmental unpredictability.

Cost Reduction

The cost represents the overall expenditure required to execute certain procedures. Koufteros, Lai, and Cheng (2007) defined cost as the aggregate of all expenses, including incoming and outgoing freight, warehousing costs, third-party storage fees, order processing expenses, direct labour costs, and administrative and service charges. Organisations strive to reduce costs and maximise profits. Hamid (2021) defined cost as the aggregate of all expenditures involved in executing specified activities and processes inside a supply chain. McWatters, Morse, and Zimmerman (2001) assert that low production costs have emerged as a principal competitive strategy for organisations in a global market; hence, cost reduction must remain a constant consideration for organisational managers. Formulating a plan focused on cost reduction requires consideration of the following elements: minimising inventories, optimising resource utilisation, enhancing work-in-process inventory turnover, and removing non-value-added activities. The predominant and crucial metric for assessing the operational supply chain is expected cost.

The goal of cost reduction is to make produced items cheaper per unit without sacrificing their quality or their capacity to perform as expected. A Continual study of costs and functions to achieve greater economy in the application of production elements leads to cost reduction, a planned positive strategy to cut expenditure and a corrective function. By taking a close look at ways to save expenses, we can improve efficiency and effectiveness without breaking the bank. Reducing costs entails improving procedures and doing away with inefficiencies to lower the cost of goods supplied and/or overhead. Cutting costs will have a direct influence on profitability as profitability is often used to measure a firm's efficacy and effectiveness. According to Kent (2018), companies should aim for maximum cost efficiency in their strategy implementation if they want to be efficient. These savings can only be realised with better supply chain management.

Optimal Resource Utilization

Resource utilisation, as defined by Zheng et al. (2022), refers to the effective use of time and other productive inputs. Guo et al. (2020) defined resource utilisation as a critical performance metric that enables managers to anticipate resource availability across several categories. Resource utilisation is crucial for enhancing workplace and supply chain competitiveness. It elucidates the utilisation of resources for operational activities and the creation of products and services. Consequently, resource utilisation emphasises the firm's production of products and services by leveraging resources to enhance output, capitalise on economies of scale and market demand, while simultaneously minimising operational expenses. Syverson (2011) defines resource utilisation as the efficiency in using resource inputs, including land, labour, capital, and management, in a firm's activities. It is the process of properly integrating people, machinery, and methodologies to ensure the provision of quality products and services for the market. Most organisations typically assess resource utilisation using labour resources. This knowledge enables teams to proactively organise work plans and implement immediate corrective actions to maintain the optimum health of new initiatives.

Zheng et al. (2022) contend that resource utilisation is a critical component of project and portfolio management that can support growth, increase profits, improve productivity, and improve the bottom line of firms. The utilisation of available resources is quantified by resource utilisation. It is the most straightforward method of monitoring the daily productivity and efficacy of employees (Guo et al., 2020; Tokman & Beitelspacher, 2011). A supply chain network employs a diverse array of resources in various applications, including manufacturing, human, financial, storage, and logistics resources. The primary objective of the resource utilisation paradigm is to optimise inventory levels, reduce lead times, and maximise customer service levels by utilising all assets or resources efficiently (Pan et al., 2017). In order to enhance productivity with greater agility, the advantages of measuring resource acquire competitive advantage (Pan et al. 2017). The pattern of operations and human resource integration and management at work is what drives resource utilisation at any one of these levels. The utilisation of resources is significantly influenced by efficiency and effectiveness. Efficiency in the administration of organisations and the effectiveness of resource assembly methods. The efficient utilisation of resources is crucial for all industry sectors, regardless of whether they are private or public institutions.

Empirical Review

In their 2024 research, Nangpiire, Gyebi, and Nasse investigated the theory that sustainable procurement procedures and its three constituents—staff competence, sustainable IT infrastructure, and top management support—have a direct bearing on the performance of SMEs. Using the explanatory research approach, 317 owners and managers of selected SMEs were assigned structured questionnaires to complete. Structured Equation Modelling (SEM) using Smart PLS 4.0 helped to examine and test the hypotheses. Results showed that while staff competence had no statistically significant impact on SMEs performance, top-down support and sustainable IT infrastructure had a quite big and positive impact.

Cao Li and Cao (2022) assessed China's actual implementation of sustainable public procurement as well as trends. The study gathered 42,369 public procurement documents from 2015 to 2020 using a web crawler, then assessed the actual use of the SPP using a text-mining approach. Based on studies, sustainable public procurement has been used in more than 82% of the papers during the last six years, and its usage has been rising.

Research by Muhumed and Paul (2022) on sustainable procurement practices and the industry's general performance shows that reverse logistics, green buying, the regulatory framework, and employee competency favourably and significantly affected the performance of cement manufacturing companies in Machakos County, Kenya.

NY: Nyile and Shale (2016). assessed how well environmentally friendly buying practices affected supply chain effectiveness. The study proceeded using a case study research methodology. The target subjects of this study were employees at the headquarters of East African Portland Cement Company from Machakos County. To choose their subjects, the researchers used a stratified random selection process. The primary source of the data for the study was questionnaires. Additionally, employed for this study were secondary data sources. Researchers used Pearson's correlation coefficients to ascertain the relationships between the dependent and independent variables of the study. The research found that four elements—procurement preferences and reservations, green procurement practices, supplier involvement, and electronic procurement—accounted for 76.3% of the variation in supply chain performance at EAPCC.

Renukappa, Akintoye, Egbu, and Suresh (2016) investigated, experimentally, how sustainable procurement practices improve competitiveness. Mixed research approach was used in data collecting and analysis. Mostly primarily on numerical data gathered from 53 postal surveys and 17 semi-structured interviews with construction industry specialists from 12 UK companies, the findings reflected Based on the poll, sustainable procurement is becoming more and more relevant in the UK building sector.

H₀₁: There is no significant relationship between sustainable public procurement and innovativeness of federal universities in Nigeria

H₀₂: There is no significant relationship between sustainable public procurement and cost reduction of federal universities in Nigeria.

. H₀₃: There is no significant relationship between sustainable public procurement and optimal resource utilization of federal universities in Nigeria

METHODOLOGY

In order to determine the correlation between sustainable public procurement and supply chain competitiveness at federal universities in Nigeria, the study implemented an explanatory design. According to the National Universities Commission, the study's population consisted of the sixty-two (62) federal universities that are currently operational in Nigeria. The entire population was utilised as the sample size in a census study. Nevertheless, a structured questionnaire was distributed to a senior procurement staff member at each of the 62 federal universities that comprised the study population. This study's topics were well-understood by these senior procurement personnel. Consequently, the study included a total of sixty-two (62) senior procurement staff members. Primary data was collected through the use of a self-administered questionnaire that was well-organised in this study. In order to evaluate the reliability of the study instrument, the Cronbach Alpha reliability test was implemented. The research instrument's reliability was assessed using a 0.70 threshold that Nunally (1978) established. In addition, the three hypotheses specified in the study were tested using the Spearman Rank Correlation Coefficient, with a critical value of 0.05. The statistical package for social sciences (SPSS) version 25 was employed to conduct all analyses.

Results and Interpretation

From a total of 62 copies of questionnaire distributed, only 59 copies were successfully retrieved from the field. All retrieved copies were considered substantial and suitable for the analysis.

Descriptive Summaries on the Variables

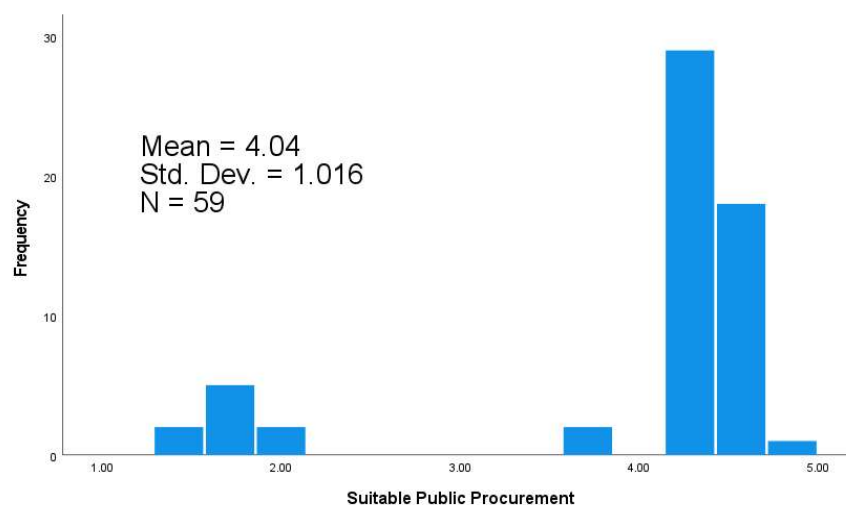


Figure 1: Distribution for sustainable public procurement

Figure 1 illustrates the distribution of sustainable public procurement. The findings indicate that the target organisations exhibit a significant level of sustainable public procurement. The target organisations' tendencies and related practices in terms of sustainable public procurement were demonstrated by the evidence, which identified sustainable public procurement as a feature. This is due to the fact that the variable's aggregate distribution is moderate ($x = 4.04$), which supports its evidence within the context.

Table 1: Distribution for measures of supply chain competitiveness

		Innovativeness	Cost Reduction	Optimal Resource Utilization
N	Valid	59	59	59
	Missing	0	0	0
Mean		4.0218	4.0412	4.1913
Std. Deviation		.95678	.94614	.78856
Skewness		-1.570	-1.890	-2.120
Std. Error of Skewness		.311	.311	.311
Kurtosis		.822	1.940	3.995
Std. Error of Kurtosis		.613	.613	.613

Source: Field Survey, 2024.

The results in Table 1 confirm the behaviour and practices of the organisation with respect to all three measures. The optimal resource utilisation ($x = 4.1913$) has the highest distribution, indicating that a greater number of respondents agreed and strongly agreed to the research questions. The distribution for cost reduction ($x = 4.0412$) is followed by the least for innovativeness ($x = 4.0218$). Additionally, the distribution is not significantly biased, as evidenced by the standard errors of skewness of 0.311. In the same vein, the kurtosis result demonstrated positive statistics, which suggested a distribution that was relatively peaked.

Hypotheses Testing

Table 2: Correlation between sustainable public procurement and innovativeness

			Sustainable Procurement	Public Innovativeness
Spearman's rho	Sustainable Public Procurement	Correlation Coefficient	1.000	.488**
		Sig. (2-tailed)	.	.000
		N	59	59
	Innovativeness	Correlation Coefficient	.488**	1.000
		Sig. (2-tailed)	.000	.
		N	59	59

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Research data (2024).

Table 2 illustrates a Spearman Rank Order Correlation coefficient (ρ) of 0.488 for the relationship between innovativeness and sustainable public procurement. This value suggests that the variables are associated in a moderate manner. The direction of the relationship suggests that the correlation is positive, suggesting that sustainable public procurement led to an increase in innovativeness. Consequently, there is a robust and positive correlation between the innovativeness of Federal Universities in Nigeria and sustainable public procurement. The statistical test of significance (p -value) is also presented in Table 2, which enables the generalisation of our findings to the study population. The calculated sig-value is less than the significance level ($p=0.000<0.05$) based on the results. Consequently, the null hypothesis is refuted. Therefore, there is a substantial correlation between the innovativeness of Federal Universities in Nigeria and sustainable public procurement.

Table 3: Correlation between sustainable public procurement and cost reduction

			Sustainable Public Procurement	Cost Reduction
Spearman's rho	Sustainable Public Procurement	Correlation Coefficient	1.000	.539**
		Sig. (2-tailed)	.	.000
		N	59	59
	Cost Reduction	Correlation Coefficient	.539**	1.000
		Sig. (2-tailed)	.000	.
		N	59	59

** . Correlation is significant at the 0.01 level (2-tailed).

Source: Research data (2024).

In the same vein, Table 3 displays a Spearman Rank Order Correlation Coefficient (rho) of 0.539 for the relationship between sustainable public procurement and cost reduction. This suggests that a robust correlation exists between the variables. The direction of the relationship suggests that the correlation is positive, suggesting that the sustainable public procurement process resulted in a decrease in costs. Consequently, there is a moderate and positive correlation between the cost reduction of Federal Universities in Nigeria and sustainable public procurement. The statistical test of significance (p-value) is also presented in Table 3, which enables the generalisation of our findings to the study population. The calculated significance level is less than that of significance ($p = 0.000 < 0.05$), as indicated by the results. Consequently, the null hypothesis is refuted. Consequently, there is a substantial correlation between the cost reduction of Federal Universities in Nigeria and sustainable public procurement.

Table 4: Correlation between sustainable public procurement and optimal resource utilization

			Sustainable Public Procurement	Optimal Resource Utilization
Spearman's rho	Sustainable Public Procurement	Correlation Coefficient	1.000	.425**
		Sig. (2-tailed)	.	.002
		N	59	59
	Optimal Resource Utilization	Correlation Coefficient	.425**	1.000
		Sig. (2-tailed)	.002	.
		N	59	59

** . Correlation is significant at the 0.01 level (2-tailed).

Source: Research data (2024).

Additionally, Table 4 displays a Spearman Rank Order Correlation Coefficient (rho) of 0.425 for the relationship between sustainable public procurement and optimal resource utilisation.. This value suggests that the variables are associated in a moderate manner. The direction of the relationship suggests that the correlation is positive, which implies that sustainable public procurement leads to an increase in optimal resource utilisation. Consequently, there is a positive and moderate correlation between the optimal resource utilisation of Federal Universities in Nigeria and sustainable public procurement. Additionally, the statistical test of significance (p-value) is presented in Table 4, which enables the generalisation of our findings to the study population. The sig-calculated level is less than significant ($p = 0.000 < 0.05$) based on the results obtained. Consequently, the null hypothesis that was previously stated is hereby rejected. Therefore, the optimal resource utilisation of federal universities in Nigeria is significantly correlated with sustainable public procurement.

Discussion of Findings

The objective of this investigation was to investigate the relationship between the competitiveness of the supply chain and sustainable public procurement in Federal Universities in Nigeria. The statistical experiments conducted revealed that sustainable public procurement has a moderate and positive impact on supply chain competitiveness in terms of optimal resource utilisation, cost reduction, and innovativeness. These results are consistent with Nyile and Shale (2016)'s assertion that four variables of sustainable procurement can account for 76.3% of the change in Supply Chain Performance at EAPCC. In turn, sustainable public procurement practices can contribute to sustainable development by transforming markets, saving money, enhancing financial viability, increasing the supply chain competitiveness of eco-industries, protecting natural resources, and fostering job creation.

The present research supports Mena et al. (2021) in their theoretical assertion that sustainable public procurement can yield a variety of benefits, such as the enhancement of an organization's brand, the reduction of waste, the enhancement of resource efficiency, the optimisation of costs and procedures, and the optimisation of processes. The results also corroborate the assertion of Cao Li and Cao (2022) that sustainable public procurement has been implemented in over 82% of the documents and has been increasing over the past six years.

In the same vein, the present results are consistent with the perspective of Renukappa, et al. (2016), which posits that sustainable procurement strategies enhance competitiveness. Additionally, Muhumed and Paul (2022) asserted that the efficacy of the cement manufacturing industry in Machakos County, Kenya, is correlated with sustainable procurement practices. Firms must be aware of the terms and conditions of the products they purchase, the sources from which they obtain them, and the production processes that are involved in the production of the products.

Conclusion and Recommendations

This study concluded that sustainable public procurement has a significant correlation with the supply chain competitiveness of Federal Universities in Nigeria, as evidenced by the findings and the relationship between them and the previous findings of other scholars. This implies that sustainable public procurement will enhance the supply chain competitiveness of Federal Universities in Nigeria. Therefore, with the implementation of sustainable public procurement, federal universities in Nigeria will be able to enhance their innovativeness, reduce costs, and optimise resource utilisation. As a result, it is advised that procurement directors allocate substantial resources to sustainable procurement training for their staff and other stakeholders. The organization's competitiveness in the supply chain will be enhanced as a result of the adequate training of personnel responsible for procurement in sustainable procurement.

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