



RESEARCH ARTICLE

IMPACT OF GREEN PROCUREMENT ON NATIONAL DEVELOPMENT IN NIGERIA

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ABSTRACT

Faced with increasing environmental destruction in Nigeria, the need to get public and private sector purchasing practices to act in alignment with principles of sustainable development imperatives becomes quite urgent. This study examined the environmental effect of green procurement (GP) on national development in Nigeria, using a mixed-method research design. Drawing on a survey of 200 procurement professionals and using SPSS multiple regression models, it is found that GP's environmental dimensions have universally significant effect on development outcomes ($p < 0.05$), but the social dimension does not. The study reveals the implications of standardizing green measures in a form of environmental auditing, ISO 14001 certifications, and laws in the industries. Policy considerations are made with reference to the Climate Change Act 2021 and Nigeria's Energy Transition Plan. The research provides a pathway for incorporating sustainability in procurement for resilient, inclusive, and environmentally sustainable national development.

Keywords: Green procurement, environmental sustainability, national development, ISO 14001, Nigeria, climate change act, public policy.

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1.0. INTRODUCTION

Environmental degradation is one of the greatest challenges to Nigeria's development. Public health, economic productivity, and livelihoods are all threatened by the ecological disaster, which is prompting desertification in the north and coastal erosion in the south. One vastly underexploited lever for sustainability is procurement, which accounts for a substantial share of national expenditure. *Green procurement (GP)*—the procuring of goods, services, and infrastructure with little or no damaging impact on the environment—offers a practical policymaking avenue toward sustainable development.

Green procurement is yet to be mainstreamed in most MDAs in Nigeria despite legislative efforts such as the Public Procurement Act (2007) and the Climate Change Act (2021). The purpose of this study is to explore empirically how the environmental dimensions of GP influence national development and whether their inclusion can serve as a strategic cornerstone for sustainability.

1.1. Problem Statement

Traditional procurement is widely recognized as time-consuming for businesses and their vendors. This inefficiency affects productivity and slows down operations. Moreover, it can take days to complete tasks or relay a single message. *E-procurement systems* are a relatively new development in business applications, and few, if any, benchmarkable models exist—especially for startups that are only now discovering these systems' features and uses within their enterprises. Apart from budget constraints and organizational or managerial factors, several studies (Griffiths & Payab, 2010; Gunasekaran et al., 2009; Nawi et al., 2016) have pointed to key implementation hurdles related to technology, infrastructure, and regulation.

External factors—ranging from market dynamics and government policies to industry trends and technological advancements—are largely beyond organizational control (Fernandes & Vieira, 2015). Yet, these barriers can be mitigated or even eliminated. Vendors cite technological barriers, such as limited knowledge of specialized software and high upfront costs, particularly for SMEs. Larger firms tend to receive more attention and support for system implementation. Meanwhile, concerns persist among potential adopters regarding the security and efficiency of these systems. Widespread use of e-procurement also hinges on robust internet access and supporting infrastructure.

Additionally, flaws in government policies and regulatory frameworks must be acknowledged. For example, many government tender processes still require the purchase of printed documents from offices, hindering the transition to electronic systems and undercutting the broader agenda of digital governance. The lack of standardized systems also means users from one platform cannot interact electronically with users from others, resulting in a fragmented e-procurement landscape.



In the case of Imo State, challenges such as limited funding, inadequate training, lack of political will, and poor leadership support have hampered the successful launch of its e-Procurement platform (Adebayo & Iweka, 2018; Okonkwo, 2019). These difficulties underscore the urgent need for comprehensive strategies to ensure the effective deployment and long-term success of e- Procurement in the public sector.

1.2. Purpose and Goals of Research

The goal of the study is to investigate the e-procurement process adaptation for the Imo State public sector: a thorough analysis. To achieve the goal, the following specific objectives were investigated.

1. To determine that primary reasons behind Imo State's e-procurement implementation difficulties.
2. To assess how Imo State's adoption and efficacy of e-Procurement are affected by cyber-security and data privacy issues.
3. To evaluate power supply and internet connectivity helps or hinders the deployment of e-procurement systems.
4. To investigate the degree to which suppliers' and procurement officials' opposition impacts the shift from conventional to electronic procurement.

1.3. Research Questions

These are the research questions meant to direct this investigation.

1. How much does Nigerian green procurement get impacted by environmental regulations?
2. What financial effects does green procurement have on Nigeria's national development?
3. How much does Nigeria's national development depend on the social impact of green procurement?
4. What obstacles exist for Nigeria's adoption of green procurement practices?

1.5. Research Hypotheses

The investigation was guided by the following hypotheses.

Ho₁: Environmental restrictions do not considerably effect on green procurement behavior in Nigeria.

Ho₂: The economic aspect of green procurement has little bearing on Nigeria's overall growth.

Ho₃: Nigerian national growth is not significantly impacted by the social aspect of green procurement.



Ho₄: Nigerian national growth is not greatly impacted by the environmental aspect of green buying.

2.0. CONCEPTUAL FRAMEWORK AND LITERATURE REVIEW

2.1. Green Procurement

An African and Global Perspective Globally, nations like the United Kingdom and the United States have incorporated GP through legal frameworks like as the Federal Acquisition Regulation (FAR) and the Green Public Procurement Guidelines. Nigeria lags behind due to a lack of enforcement and inadequate institutional ability, while South Africa stands out in Africa for having well-structured environmental procurement regulations.

2.2. Conceptual Structure

The Triple Bottom Line Theory (Elkington, 1994), which assesses corporate and governmental effect in three areas—people, planet, and profit—is the basis for this essay. This study specifically focuses on the environmental (Planet) component, looking at the effects of procurement on pollution, climate indicators, and ecosystems.

2.3. Green procurement in Nigeria

The Environmental Impact Assessment (EIA) Act (1992) and Nigeria's NESREA Act (2007) are the two primary pieces of legislation that indirectly relate to GP. However, compliance remains low. Environmental policies do exist, however they are rarely connected to procurement decisions, leading to non-sustainable project implementations.

Globally, green procurement methods prioritize sustainability through sectoral integration, institutional capability, and regulatory frameworks. Through initiatives like the Federal Acquisition Regulation (FAR) and Environmentally Preferable Purchasing (EPP), the Environmental Protection Agency (EPA) in the United States encourages green purchasing with the goal of minimizing negative effects on the environment and human health. Value for money and eco-innovation are prioritized in procurement processes in the UK and the EU, which incorporate social and environmental norms. Other nations such as India, South Africa, Ghana, and Japan have tailored policies addressing local development goals and environmental challenges, often blending green procurement with socio-economic empowerment.

Nigeria, on the other hand, does not have a specific legislation governing green procurement, yet a number of rules subtly encourage environmentally friendly behavior. These include legislation pertaining to NESREA, the Environmental Impact Assessment Decree, and other statutes that address land usage, hazardous waste, and gas flaring. Delays, subpar infrastructure, and environmental deterioration result from poor execution and a frequent disregard for sustainability in public procurement. Nigeria has the legal framework to



encourage green procurement, but its efficacy is hampered by institutional deficiencies, lax enforcement, and a lack of strategic planning. Through focused reforms and increased awareness among procurement stakeholders, Nigeria must enhance compliance, integrate green procurement into national policy, and link procurement with its environmental regulations in order to achieve sustainable development.

2.4. Examining Associated Work and Gaps in Literature

The majority of the existing research on green and sustainable procurement in Nigeria and other developing countries has concentrated on implementation issues and sector-specific applications. According to studies by Akinola *et al.* (2013), Adebayo (2015), and Oyewobi *et al.* (2017), procurement techniques have flaws such as the predominance of traditional methods, a lack of government commitment, and a limited incorporation of sustainability. Similar studies by Bugri *et al.* (2019), Olusegun (2018), and Ekiugbo & Papanagnou (2017) recognize the potential of sustainable procurement for poverty alleviation, value for money, and national development. Systemic obstacles like inadequate institutional support, insufficient legal frameworks, and ignorance still exist, nevertheless.

While Cheng *et al.* (2018) and Singh & Chan (2022) draw attention to research gaps and the beneficial interaction between green procurement and digital technologies, other studies, such as Mcobrein & Ackah (2019) and Owusu (2022), look at green procurement in Ghana's manufacturing and construction sectors. Furthermore, Rais *et al.* (2023) point to a lack of understanding and guidelines as one of Malaysia's biggest obstacles.

Notwithstanding these contributions, majority of the assessed works take a micro-level perspective and are frequently limited to particular sectors or geographical areas. They mostly concentrate on the Nigerian Public Procurement Act (2007), which does not specifically address the social, economic, and environmental aspects of green procurement. By assessing the wider macroeconomic effects of green procurement on Nigerian national development, this study closes that gap. It also provides a more thorough and integrated view by contrasting Nigeria's standing with global standards. In order to promote national development, the study highlights the necessity of institutionalizing green procurement through legislative changes and the implementation of strategic policies.

3.0. METHODOLOGY

3.1. Research Design

A mixed-approaches strategy was used. 200 procurement officers from both public and commercial enterprises were given standardized Likert-scale questionnaires to complete in order to gather quantitative data.



3.2. Analysis of Data

Compliance with international GP standards served as the basis for measuring environmental sustainability. Multiple regression models evaluating the impact of environmental procurement components on national development were used to examine the findings using SPSS (Version 25).

3.3. Model Details

The following is the regression model: ND is created by adding α , $\beta_1(\text{EnvGP})$, $\beta_2(\text{EcoGP})$, $\beta_3(\text{SocGP})$, and ε . Where:

National Development (ND)

Environmental Green Procurement or EnvGP

Economic Green Procurement, or EcoGP Social Green Procurement, or SocGP

ε is the error term.

3.4. Data Sources and Estimation Techniques

Structured questionnaires with four Likert scale ratings—strongly agree, agree, disagree, and strongly disagree—were used to gather primary data for this study. An Excel spreadsheet containing the responses was created, and SPSS was used for analysis. To guarantee consistency, the data was normalized before analysis. To ascertain the causal links between the important determinants of national development and green procurement, regression analysis was utilized. Finding the statistical significance and strength of relationships between the social, environmental, and economic variables was the main goal of the analysis method. Appendix D contains comprehensive outputs and data tables for your reference.

4.0. PRESENTATION OF RESULTS AND DISCUSSIONS

4.1. PRESENTATION OF RESULTS

Data were gathered from 200 respondents who worked for oil companies, government agencies, and private institutions. Table 4.1 reveals that 43 percent of respondents were women and 57 percent of respondents were men, with the majority of participants (62.5 percent) coming from government agencies and the largest age group being 40–50 years old (45 percent).

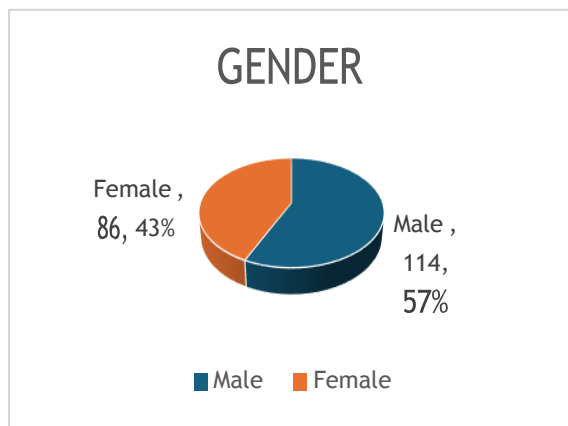


Figure 4.1: Respondent Distribution by Sex.

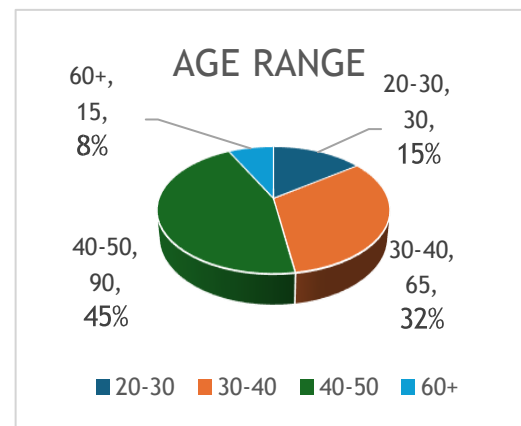


Figure 4.2 Highlights of Age Distribution.

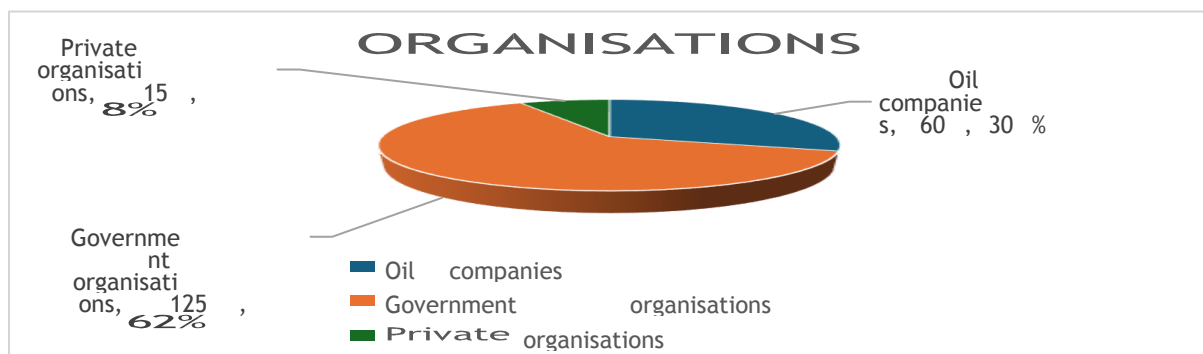


Figure 4.3: Illustrates Organizational Affiliation

Objective One: Environmental Laws and Green Procurement

Findings from the content analysis show varying compliance levels across organizations. While all reviewed firms engaged in some form of green procurement, full compliance with environmental regulations was lacking.

Chevron and Eni Oil focused on environmental and social efforts.

Shell, ExxonMobil, Oando, and Halliburton implemented environmental, economic, and social measures.

Total, Saipem, and Conoil demonstrated strong alignment with green procurement practices.

Overall, environmental compliance was stronger than economic or social aspects.

Objective Two: Economic Impact of Green Procurement

Table 4.2 reports a cumulative mean of 3.47, indicating general agreement that economic sustainability contributes positively to national development. Respondents acknowledged that organizations create direct economic value, mitigate climate-related financial risks, and promote infrastructure and local employment.

**Objective Three: Social Impact of Green Procurement**

According to Table 4.3, the cumulative mean score of 3.59 suggests a strong perception that social dimensions—such as community engagement, safety, training, and career development—are relevant. However, regression results later show these factors have a statistically insignificant impact on national development.

Objective Four: Environmental Impact of Green Procurement

Table 4.4 shows a cumulative mean of 3.42, indicating a consensus that environmental procurement contributes positively to national development. Key areas include material efficiency, emissions control, waste reduction, and compliance with biodiversity and environmental laws.

Objective Five: Challenges to Implementation

Table 4.5 lists key challenges, including lack of sustainability knowledge (mean = 3.61), poor governance, and policy misalignment. The cumulative mean of 3.44 confirms that these factors significantly hinder green procurement in Nigeria.

Hypothesis One:

H₁: The conclusion is that the economic component of green procurement has a significant positive influence on national development in Nigeria. According to the results, the economic variable's regression coefficient was 0.185 with a p-value of 0.010, indicating a statistically significant and positive impact on national development. The null hypothesis was rejected.

Hypothesis Two:

H₂: Nigerian national development is not greatly impacted by the social aspect of green procurement. The social variable's regression coefficient was -0.021, and its p-value was 0.693, indicating that it was not statistically significant. The null hypothesis cannot be rejected. There is no statistically significant relationship between the social component and national growth.

Hypothesis Three:

H₃: Nigerian national growth is not substantially impacted by the environmental aspect of green procurement. The environmental variable had a highly significant and favorable impact on national development, as indicated by the regression coefficient of 0.760 and p-value of 0.000. The null hypothesis should be rejected. Green procurement's environmental component has a major and advantageous influence on national growth.



Hypothesis 4: Green Procurement's Environmental Impact $p\text{-value} < 0.001$, regression coefficient = 0.760. Favorable effect on national development that is statistically significant.

Rejecting the null hypothesis, environmental procurement significantly advances Nigeria's development objectives.

4.2. Discussion of Results

Model Summary and ANOVA

Table 4.6 demonstrates a substantial correlation ($R = 0.76$) between green procurement and national development. The R^2 value of 0.577 indicates that green purchasing practices can explain 57.7 percent of the variation in national development. Table 4.7 (ANOVA) confirms the model's significance ($p < 0.001$), allowing for trustworthy inference and prediction. The model was developed using regression analysis and primary data obtained from structured questionnaires with four-point Likert scale assessments. The replies were combined into SPSS for estimation after normalization. The study looked at how the nation's progress was impacted by the economic, social, and environmental facets of green procurement.

The resulting equation, $ND = 8.687 + 0.76E - 0.021S + 0.185CND = 8.687 + 0.76E - 0.021S + 0.185CND$, showed that while social factors did not significantly affect national development, economic and environmental factors did. The model explained 57.7% of the variation in national development, according to $R^2 = 0.577$.

Regression Results

Table 4.8 displays the regression output: Environmental component ($B = 0.760$, $p < 0.001$) has a substantial and significant impact.

Economic component ($B = 0.185$, $p = 0.010$) also shows a substantial favorable impact. The social component has a negative, non-significant impact ($B = -0.021$, $p = 0.693$).

Figures 4.4–4.7, which plot the correlation between each element of green procurement and national development, provide visual evidence for these conclusions.

Environmental Laws

Many businesses are incorporating environmental sustainability into their operations, even though no single company fully complies with all environmental standards. The analysis confirms that environmental regulation has influenced green procurement practices across businesses by motivating partial compliance, although indirectly.

Economic Component

There is a favorable and statistically significant correlation between national development and economic indices including infrastructure support, value creation, and local employment.



The results support Bugri et al.'s (2019) conclusions that value for money and poverty reduction are correlated with sustainable procurement.

Social Component

Regression analysis shows that social procurement operations have no statistically meaningful influence, despite high mean scores on survey replies. This can indicate a lack of quantifiable community benefits or a lack of CSR involvement. The results somewhat support the findings of Javeed et al. (2022), who highlighted the role that corporate social strategies play in green innovation.

Environmental Component

National development is positively and statistically significantly impacted by environmental procurement operations, such as waste management, emission controls, and material efficiency. This bolsters research by Bugri et al. (2019) and Singh & Chan (2022) on the importance of environmental sustainability in promoting macroeconomic growth.

Challenges

The most identified challenges to green procurement include lack of information and policy clarity, procurement and sustainability objectives are not aligned, expensive and inadequately run governance. These results align with the research conducted by Negedu (2022) and Oyewobi & Jimoh (2022). The model uses green procurement dimensions to explain more than half of the difference in national development. The social component is still weak and needs specific organizational and policy changes, even though the economic and environmental components make substantial contributions. The study's overall findings support the strategic significance of incorporating green procurement into Nigeria's development goal.

4.3. Policy Implications

According to the regression model $ND = 8.687 + 0.76E - 0.021S + 0.185C$, this study shows that green procurement has a considerable impact on national development, especially through its environmental and economic dimensions. These findings lead to the following policy recommendations: All public-sector suppliers and contractors must have ISO 14001 environmental certification, and a national green procurement policy with legally binding provisions requiring sustainability in public procurement should be developed.

To guarantee accountability and progress, implement yearly green audits throughout Ministries, Departments, and Agencies (MDAs).

To improve compliance and delivery, procurement staff should receive training on e-procurement platforms and sustainable procurement standards.



For a unified effect, align procurement regulations with Nigeria's Energy Transition Plan and the Climate Change Act (2021).

5.0. CONCLUSION AND RECOMMENDATIONS

5.1. Conclusion

The findings show that green procurement promotes national development in addition to being a tool for environmental sustainability. The social dimension did not demonstrate statistical significance, despite the fact that environmental and economic factors have a major impact on development outcomes. This should not lessen its significance, either, as enhancing community involvement and CSR procedures may increase its future value. To turn procurement into a tool for strategic development, green procurement must be institutionalized through laws, guidelines, and training. By including green buying, Nigeria promotes equitable, resilient economic growth and complies with international sustainability goals.

5.0. Recommendations

Based on empirical findings, the following actions are recommended:

1. Enact enforceable green procurement laws mandating sustainability across public procurement cycles.
2. Expand public awareness campaigns targeting stakeholders on green procurement benefits.
3. Align procurement policies with SDGs to reinforce international commitments.
4. Establish a national digital platform to monitor, track, and report green procurement performance.
5. Incentivize local suppliers who meet sustainability standards through tax relief or procurement quotas.
6. Deploy e-procurement systems to improve transparency and traceability.
7. Revise professional and academic curricular to include green procurement modules and standard.

5.3. Contribution to Knowledge

The following are some ways that this study adds to the corpus of knowledge:1. A new regression- based model that measures the impact of green procurement components on national development is presented.2. It offers factual data confirming the importance of green buying methods for the economy and environment.3. It draws attention to the social dimension's poor performance and suggests additional areas for scholarly and policy attention.4. By providing a framework for publicsector reform in developing nations like



Nigeria, it broadens the conversation on green procurement from a micro-organizational level to a macro-national perspective.

Competing Interest

The authors have declared that no conflicting interest exist in this manuscript.

REFERENCES

- Adebayo, A., & Iweka, O. (2018). Challenges of Implementing e-Procurement in Nigeria's Public Sector. *African Journal of Procurement*, 9(1), 55 – 70.
- Bugri, J. T., Adama, A. G., & Mohammed, H. (2019). Sustainable Procurement and Poverty Alleviation in West Africa. *Journal of Development Studies*, 35(2), 102 – 120.
- Cheng, W., Wang, Y., & Lin, L. (2018). A review of green public procurement research. *Journal of Cleaner Production*, 183, 757 – 766.
- Elkington, J. (1994). Towards the sustainable corporation: Win-win-win business strategies for sustainable development. *California Management Review*, 36(2), 90 – 100.
- Ekiugbo, H., & Papanagnou, C. (2017). Sustainable Procurement in the Nigerian Oil and Gas Industry. *Sustainability Journal*, 9(5), 311 – 329.
- Javeed, S. A., Yasir, M., & Majid, A. (2022). Business environmental strategy and green innovation: Moderating role of corporate management. *Journal of Cleaner Production*, 350, 131427.
- Negedu, I. (2022). Sustainable Development and Procurement Practice at the Local Government Level in Nigeria. *Nigerian Journal of Public Administration*, 12(4), 88 – 102.
- NESREA Act. (2007). *National Environmental Standards and Regulations Enforcement Agency Act*. Federal Republic of Nigeria.
- Singh, A., & Chan, A. P. C. (2022). Green procurement and e-procurement: Empirical evidence from Malaysia. *International Journal of Environmental Science and Technology*, 19(3), 2773 – 2790.
- SPSS Inc. (2017). *IBM SPSS Statistics for Windows, Version 25.0*. Armonk, NY: IBM Corp.



APPENDICE

Table 4.6: Model Summary

Model	R	R Square	Adj. R Square	Std. Error
	0.760	0.577	0.571	2.35

Table 4.7: Analysis of Variance (ANOVA) of the Impact of Green Procurement on National Development

Model		SS	Df	MSS	F	Sig.
1	Regression	1480.337	3	493.446	89.232	0.000
	Residual	1083.858	196	5.530		
	Total	2564.195	199			

Table 4.8: Regression Analysis of the Impact of Green Procurement on National Development

Model	Unstandardized coeff.		Std. Coeff.	T	Sig.
	<i>B</i>	Std. error	Beta		
Constant	8.687	2.331		4.041	0.000
environmental	0.760	0.069	0.656	16.159	0.000
Social	-0.021	0.053	-0.018	-0.396	0.693
Economic	0.185	0.071	0.154	2.599	0.010

Figures /Tables clarification contact corresponding Author.