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GOVERNMENT AND ATTITUDINAL BARRIERS TO GREEN PROCUREMENT IMPLEMENTATION IN PUBLIC BUILDING PROJECTS IN ABUJA, NIGERIA

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ABSTRACT

Purpose: *Despite severe environmental challenges and absence of explicit sustainability criteria for public building projects, public sector organizations lack systematic green procurement practices due to cultural and structural hinderances. This study investigates government and attitudinal related barriers to green procurement implementation in Nigeria's public building projects with a view to achieving sustainable development.*

Design/methodology/approach: *Quantitative data were collected through questionnaires administered to stakeholders, with 334 valid responses analysed using descriptive statistics in IBM SPSS (version 25). Mean scores, standard deviations, and the Severity Index (SI) formula were employed to determine the relative impact of each barrier.*

Findings: *Government-related barriers such as poor awareness and delays in decision-making (SI = 88.6%) and lack of compelling laws or policies (SI = 88.2%), as well as attitudinal barriers such as fear of higher costs (SI = 91.8%) and failure to understand stakeholder needs (SI = 80.8%) emerged as the most severe. The findings emphasize the need for policy reforms, institutional incentives, and stakeholder awareness to enhance sustainable procurement in Nigeria. to overcoming these barriers and promoting sustainable procurement practices in Nigeria.*

Research limitations/Implications*: The study focused on only Abuja. This narrow coverage limits the generalizability of the findings to other Nigerian states.*

Practical implications: *Based on the findings, Nigeria must adopt a comprehensive, multi-level approach to green procurement in public building projects. This requires moving from voluntary guidelines to mandatory legislation with clear regulatory frameworks that address both structural and attitudinal barriers.*

Originality/value – *This study is original in systematically quantifying and ranking government and attitudinal barriers to green procurement in Nigeria's public building projects using a Severity Index approach, thereby providing context-specific evidence and actionable insights that extend beyond descriptive accounts in previous studies.*

Keywords: Government; Attitudinal; Green Procurement; Barriers: Implementation

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1.0 INTRODUCTION

Green procurement (GP) refers to acquiring products and services with minimal environmental impact across their life cycle compared to conventional alternatives (Gosh, 2018; Soyege, 2023; Kilinkaridou, 2023). By embedding environmental considerations into purchasing decisions, GP has become a vital tool for advancing sustainability. In construction, it promotes sustainable practices through environmental performance criteria (EPC), though implementation remains challenging (Adeleke *et al.,* 2020; Olanipekun *et al.,* 2022; Orfanidou et al., 2023; Han et al., 2024). Beyond project-level benefits, GP contributes to global climate goals by reducing emissions and supporting efforts to limit global warming below 2°C (*Upadhyay et al.,* 2023; Kabange *et al.,* 2023). Internationally, it has gained traction in countries such as the United States and Canada, where it is expected to cut emissions by 30% below 2005 levels by 2030 (Ullah *et al.,* 2023; Woolley *et al.,* 2022).

In Nigeria, however, GP adoption is constrained by weak regulatory support. The Public Procurement Act of 2007 outlines general procedures but lacks explicit sustainability criteria for public building projects (Komolafe, 2022; Oyewobi *et al.,* 2017; Agbesi *et al.,* 2018; Oyewobi & Jimoh, 2022). This gap has contributed to rising CO_2 emissions and environmental challenges such as urban sprawl, flooding, erosion, and slum development, which undermine sustainable development (Atanda & Olukoya, 2019; Festus et al., 2020; Leal Filho *et al.,* 2019; Chhetri, 2023). Transitioning from traditional procurement requires public organizations to move beyond cost and schedule priorities to embrace environmental and social considerations (Akenroye & Oyedijo, 2023). Yet, adoption in Nigeria faces systemic challenges: inadequate regulatory frameworks, weak enforcement, limited training, budgetary constraints, and stakeholder resistance (Bohari *et al.,* 2017; Bidin *et al*., 2019; Ajayi *et al.,* 2021; Khaderi *et al.,* 2022; Unegbu *et al.,* 2024; Nwogu & Emedosi, 2024). These challenges are compounded by organizational inconsistencies, collusion, poor planning, and attitudinal barriers such as lack of awareness and resistance to change (Ayarkwa *et al.,* 2020; Alqadami, 2020). Addressing them requires integrated urban planning and inclusive governance to manage the pressures of rapid urbanization (Boumo & Changwak, 2025).

While prior studies have identified barriers to GP, few have quantified their relative severity. This study fills that gap by applying a Severity Index (SI) to rank obstacles to GP implementation in Nigeria's public building sector. The findings aim to provide policymakers and practitioners with actionable insights to strengthen sustainable procurement practices and advance environmental goals.

2.0 LITERATURE REVIEW

Green public procurement (GPP) has emerged as a critical policy instrument for advancing sustainability and addressing climate change (Walker & Brammer, 2012; Grandia, 2016). Despite its environmental and economic potential, the adoption of GPP faces significant barriers at both governmental and organizational levels (Adjei-Bamfo *et al.,* 2019; Saastamoinen *et al.,* 2018). This review focuses on two major categories of obstacles: government-related and attitudinal barriers.

2.1 Government Barriers to GPP Implementation

Research highlights several government-related challenges that hinder effective implementation. These include inadequate legal and regulatory frameworks, weak policy direction, limited government commitment, absence of internal management structures to support sustainable procurement, and insufficient incentives (Ogunsanya *et al.;* Alqadami, 2020; Ganiyu *et al.,* 2020; Mojumder *et al*., 2022; Yap *et al.,* 2024; Otali *et al.,* 2022; Nwogu & Emedosi, 2024; Pourvaziri *et al.,* 2024; Lou *et al.,* 2023). Collectively, these barriers underscore the need for comprehensive policy formulation that provides

clear standards, enforcement mechanisms, and incentive structures to promote sustainable procurement practices (Saastamoinen *et al.,* 2018).

Table 1: Government Related Barriers

S/N	Factors	SOURCES
1		Lack of explicit statutory requirements that cover sustainable procurement. Otali *et al.,* 2022; Rahman *et al.,* 2020; Pour Vaziri *et al.,* 2024 Ganiyu *et al.,* 2020;
2		Lack of government commitment Oyewobi & Jimoh 2022; Rane 2019; Khan *et al.,* 2018; Bidin 2019; Pourvaziri *et al* 2024; Yap *et al.,* 2024; Lou *et al.,* 2023; Mojumder *et al.,* 2022
3		lack of leadership and support within organizations for World bank 2021; Rahman *et al.,* implementing green procurement 2020
4		Lack of compelling law or policy Kolawole & Katun 2020; Alqadami 2020; Ganiyu *et al.,* 2020; Rane 2019; Bidin 2019; Agyekum 2022; Mojumder *et al.,* 2022; Yap *et al.,* 2024; Otali *et al.,* 2022; Nwogu & Emedosi 2024; Pourvaziri *et al.,* 2024; Lou *et al.,* 2023; Mojumder *et al.,* 2022
5	Absence of internal management structures that support sustainable procurement	Ogunsanya *et al.,* 2021; Alqadami 2020; Nwogu & Emedosi 2024; Pourvaziri *et al.,* 2024
3	limited funding and expertise	Rath *et al.,* 2022; Rahman *et al.,* 2020
6	Poor awareness and delay in decision-making	Oyewobi & Jimoh 2022;
7	Insufficient Incentives	Pourvaziri *et al.,* 2024; Mojumder et al 2022; Yap *et al* 2024; Ganiyu et al 2020; Otali *et al* 2022; Nwogu & Emedosi 2024; Shen *et al* 2017; Lou *et al.,* 2023; Nwogu & Emedosi 2024; Akcay, (2023).
8	Lack of clients' demands and awareness	Oyewobi & Jimoh 2022; Otali et al 2022; Yap *et al.,* 2024; Lou *et al,* 2023; Ganiyu *et al* 2020;
9	Bureaucratic procedures	Otali *et al.,* 2022
10	Lack of innovation in public sector	Mojumder *et al.,* 2022;

11	Lack of collaboration	Wong *et al* 2023; Rahman *et al*, 2020; Lou *et al*, 2023
12	Poor implementation of building regulations	Otali *et al* 2022; Kagande *et al*, 2020; Ganiyu *et al.*, 2020; Akcay, (2023).

2. 2 Attitudinal Barriers to Green Procurement Implementation

Attitudinal barriers remain some of the most persistent challenges to green procurement adoption (Preuss, 2009). Stakeholder resistance to change and clients' reluctance to embrace new sustainability requirements often hinder progress, as traditional procurement routines foster scepticisms toward innovative practices. This resistance is reinforced by short-term orientations, where organizations prioritize immediate cost savings over the long-term life-cycle benefits of sustainable procurement (Oyewobi & Jimoh, 2022; World Bank, 2021; Liu & Ma, 2021; Lou *et al.,* 2023; Mojumder *et al.,* 2022; Pourvaziri *et al.*, 2024).

Another critical barrier is the misperception of green products. Decision-makers frequently regard environmentally friendly alternatives as expensive, unreliable, or technologically unproven, leading to risk-averse behaviour that favours conventional procurement methods (Yap *et al.,* 2024; Mojumder *et al.,* 2022; Pourvaziri *et al.,* 2024). In addition, weak corporate commitment and limited leadership support undermine organizational culture around sustainability. Without visible endorsement from leadership, staffs often perceives green procurement initiatives as optional rather than integral to procurement policy (Khan *et al.,* 2018; Pourvaziri *et al.,* 2024).

Table 2: Attitudinal Related Barriers

S/N		SOURCES
1	Stakeholders' resistance to change	Oyewobi & Jimoh 2022; World bank 2021; Liu and Ma 2021 Lou *et al.*, 2023
2	Lack of trust among stakeholders	Agyekum 2022,
3	Lack of communication among stakeholders	Agyekum 2022,
4	Failure to understand stakeholders need and expectation	Agyekum 2022; Mojumder *et al*., 2022;
5	Client and stakeholders' uncooperative attitudes	Agyekum 2022; Ojo etal 2021; Otali *et al*., 2022
6	Difficulty in identifying stakeholders and balancing multiple inputs	Agyekun 2022; Ganiyu, *et al.*, 2020;
7	Lack of social drive from major stakeholders	Ogunsanya *et al.*, 2021 Liu and Ma 2021; Agyekum 2022; Ojo et al 2021
8	Wrong perception of quality of green products	Yap *et al.*, 2024; Mojumder *et al.*, 2022; Pourvaziri *et al.*, 2024
9	Lack of environmental responsibilities	Yap *et al.*, 2024; Mojumder *et al.*, 2022; Pourvaziri *et al.*, 2024
10	Inadequate capacity of small-scale suppliers and contractors	Yap *et al.*, 2024; Mojumder *et al.*, 2022; Otali *et al.*, 2022; Pourvaziri *et al.*, 2024

11	Lack of Corporate commitment	Khan *et al.*, 2018; Pourvaziri *et al.*, 2024
12	Lack of interest in sustainable building development	Nwogu & Emedosi 2024;
13	Fear of higher cost	Ogunsanya *et al.*, 2021, Saferi 2018 Liu and Ma 2021; Bidin 2019 Ganiyu *et al.*, 2020

3.0. AREA OF THE STUDY

Abuja, located in Nigeria's Federal Capital Territory (FCT), was conceived in 1976 when the government decided to relocate the capital from Lagos to a more central location, and it was officially inaugurated on December 12, 1991 (Federal Government of Nigeria, 1991). Geographically, Abuja lies at approximately 9°03′N latitude and 7°29′E longitude, bordered by Niger, Kogi, Nasarawa, and Kaduna States, making it strategically accessible from all regions of the country (NPC, 2006). Demographically, the 2006 National Population Census recorded the FCT population at 1,405,201 people, but rapid urbanization has since driven exponential growth, with projections estimating over 4.2 million residents by 2025 (NPC, 2006; UN-Habitat, 2025). This expansion positions Abuja among the fastest-growing cities in Africa, yet it also intensifies sustainability challenges such as urban sprawl, infrastructure strain, flooding, and environmental degradation, underscoring the urgent need for sustainable procurement and planning practices in the city's development trajectory (Atanda & Olukoya, 2019; Festus et al., 2020).

4.0 METHODOLOGY

This study investigates government and attitudinal related barriers to green procurement implementation in Nigeria's public building projects and measures their severity using the severity index (SI). Quantitative data were collected through questionnaires administered to stakeholders, with 334 valid responses analysed using descriptive statistics in IBM SPSS (version 25). Mean scores, standard deviations, and the Severity Index (SI) formula were employed to determine the relative impact of each barrier.

4.1 Sampling technique and sample size

In this study, probability sampling will not be suitable because green procurement is an evolving infrastructure delivery strategy in Nigeria. There is neither an official list nor standard Database stipulating the number of stakeholders involved in Geen Procurement infrastructure projects in Nigeria (Amadi *et al*., 2014; Ashoke, 2025). Therefore, a non-probability sampling technique is adopted for the study. The study employed purposive and snowball sampling to select respondents involved in green procurement of public building projects in Nigeria.

Purposive sampling was first used to deliberately identify professionals with relevant expertise such as procurement officers, project managers, architects, engineers, environmental officers, and consultants ensuring credible and contextually grounded data. This was necessary because green procurement is a specialized and emerging field in Nigeria, requiring insights from individuals with direct experience. Snowball sampling was then applied to broaden the sample, with initial participants referring other qualified experts within their networks. This method helped reach otherwise inaccessible professionals due to bureaucratic or hierarchical barriers and tapped into informal networks. By combining these methods, the study captured diverse expert perspectives and generated a robust dataset suitable for analysis.

4.2.1 Sample size

According to the Krejcie and Morgan (1970) table which postulates that for a population of 1,000,000 that the sample size is 384. The attained sample size consequently offers adequacy in strength in the analysis and justifies the validity of the study results. 400 Questionnaire survey was distributed to

stakeholders working in Abuja to cover for non-response rate. Incorporating predictors of non-response in analyses can improve the accuracy of estimates through methods like multiple imputation (Silverwood et al., 2024).

4.3 Questionnaire Administration

The questionnaire consists of two sections. The first section (A) consists of respondents' demographic information. Section(B) has to do with the level of severity of factors hindering green procurement, with a 5-point severity index Likert rank scale, from 1-Not severe at all to 5 extremely severe. This study administered questionnaires to professionals, clients end users and suppliers in Abuja, Nigeria. The distribution and responses are shown below. The total number of useful responses reached 334 {180 (53.9) paper-based and 154 (46.10) online}. The two formats shared the same items, and there was consistency between the modes. These replies were combined into one data set to analyse.

Table:3 Questionnaire Administration

Mode of Administration	Distributed	Returned	Usable	% Response
Paper based (Hardcopy)	220	195	180	53.9
Online (Google form)	180	164	154	46.10
Total	400	359	334	100

Implication: This implies that the return rate of the questionnaires is 83.5%.

4.3.1 The Reliability of the Constructs

For findings of research to be generalised, it is important to take appropriate steps that will ensure that the findings in relation to the data set are precise and consistent by ensuring the validity and reliability (Noble and Smith, 2015; Saunders *et al.,* 2016). Validity refers to the level an idea is correctly analysed in a quantitative study (Heale and Twycross, 2015). The reliability of constructs was achieved using the reliability scale. Reliability scale < 0.60 Poor reliability; 0.6 - 0.69 Questionable reliability; 0.70-0.79 Acceptable reliability; 0.80 -0.89 Good reliability;>0.90 Excellent reliability (Ahmad et *al.,* 2024). The reliability of the constructs was analysed by finding Cronbach's alpha as suggested by Pallant (2011). Overall Cronbach's alpha for questionnaire was 0.909. This means that the questionnaire as a whole is reliable and acceptable. The reliability test for the field data presented in Table 4, showed that the Cronbach's alphas obtained for each of the constructs are within the same range.

Table 4: Reliability Status

S/N	Construct category	Sub constructs	No. of Items	Cronbach's α	Reliability Status
1	Factors	Government Related Barriers	11	0.900	Excellent reliability
		Attitudinal Related Barriers	12	0.918	Excellent reliability

4.3.2 Method of Analysis

Data obtained were analysed using IBM SPSS statistics version 25 to determine the mean and standard deviation. Snowball sampling was used through physical and online questionnaire distribution. The Severity Index (SI) was computed using the formula: SI= (Mean Score / Maximum Possible Score) ×100. Barriers were categorized into four levels: Very High Severity (≥80%), High Severity (70–79%), Moderate Severity (60–69%), and Low Severity (<60%) (Poljansek, *et al.,* 2020).

5.0 PRESENTATION AND DISCUSSION OF RESULTS

Table 5: Demographic Information

S/N	Variable	Option	Frequency	Percentage

1	Type of Organization		a)	Govt Agency	120	35.9
			b)	Private	214	64.1
			Total		**334**	**100.0**
2	Profession of respondents		a)	Architecture	45	13.5
			b)	Quantity Surveyor	160	47.9
			c)	Project Management	3	0.9
			d)	Building	49	14.7
			e)	Engineering	37	11.1
			f)	Facility Managers	11	3.3
			g)	Others	29	8.7
			Total		**334**	**100**
3	Years of Experience		a)	1-5 years	8	2.4
			b)	6-10	68	20.4
			c)	11-15	76	22.8
			d)	16-20	94	28.1
			e)	Above 20 years	88	26.3
			Total		**334**	**100.0**
4	Highest Qualification of obtained		a)	HND	24	7.2
			b)	Bsc/Btech	143	42.8
			c)	Mtech/Msc	136	40.7
			d)	PHD	23	6.9
			e)	Others	8	2.4
			Total		**334**	**100.0**
5	Designation of respondents		a)	Client	75	22.5
			b)	Designer/Consultant	22	7.2
			c)	Contract Administrator	112	33.5
			d)	Project Manager	37	11.1
			e)	Govt or policy maker	34	10.2
			f)	others	52	15.6
			Total		**334**	**100.0**

Table Five (5) above provides the details of the demographic information of the respondents. Three hundred and thirty-four (334) respondents participated in the study as follows; client organizations' (75), Designer/Consultants (24) and contract administrators (112), government and policy maker (34). These professionals include architects (45), quantity surveyors (160), builders (49), engineers (37) facility managers (11) and others (29). Quantity surveyors participated more than other professionals in the survey with 47.9%. Their academic qualifications are First Degree (143), Masters (136) Higher Diploma (24), and Doctoral (23). All the respondents had post-secondary education. This confirmed that the respondents have enough experience for them to participate constructively in the study.

Table 6: Level of Severity of Government related barriers

S/N	Factors	Mean	Std. Dev.	Severity Index (%)	Severity Level
1	Poor awareness and delay in decision-making	4.43	0.823	88.6%	Very High Severity
2	Lack of compelling law or policy	4.41	0.650	88.2%	Very High Severity
3	Lack of government commitment	4.13	0.906	82.6%	Very High Severity
4	Insufficient incentives	4.07	1.352	81.4%	Very High Severity
5	Fragmented policies	3.72	1.166	74.4%	High Severity
6	Absence of internal structures that support sustainable procurement	3.70	0.993	74.0%	High Severity
7	Bureaucratic procedures	3.60	1.210	72.0%	High Severity
8	Short-term political goals	3.50	1.133	70.0%	High Severity
9	Lack of leadership and support within organizations	3.47	1.044	69.4%	Moderate Severity
10	Lack of collaboration	3.26	1.155	65.2%	Moderate Severity
11	Difficulty identifying stakeholders and balancing multiple inputs	2.81	0.953	56.2%	Moderate Severity

Table six (6) shows the severity of government related barriers to green procurement implementation was assessed using the Severity Index (SI), calculated as the ratio of each barrier's mean rating to the maximum possible Likert scale value (5), multiplied by 100. The study found out that the most severe barriers identified were "poor awareness and delay in decision-making" (SI = 88.6%) and "lack of compelling law or policy" (SI = 88.2%), both rated as very high severity. These were followed by "lack of government commitment" (SI = 82.6%) and "insufficient incentives" (SI = 81.4%). Barriers such as "fragmented policies" and "absence of internal management structures" fell within the high severity range (SI = 70–79%), while "difficulty in identifying stakeholders" was rated as moderate severity (SI = 56.2%), the lowest among all listed factors.

S/N	Factor	Mean	Std. Dev.	SI (%)	Severity Level
Fear of higher cost		4.59	0.784	91.8%	Very High Severity
Failure to understand stakeholder needs		4.04	1.001	80.8%	Very High Severity
Stakeholders' resistance to change		3.49	1.068	69.8%	High Severity
Lack of leadership and support within organizations		3.45	0.969	69.0%	High Severity

Table 7: Severity Index of Attitudinal related factors

S/N	Factor	Mean	Std. Dev.	SI (%)	Severity Level
5	Lack of social drive from major stakeholders	3.35	1.101	67.0%	High Severity
6	Difficulty in measuring environmental impact	3.34	0.777	66.8%	High Severity
7	Lack of trust among stakeholders	3.26	1.162	65.2%	High Severity
8	Client and stakeholder uncooperative attitudes	3.22	1.145	64.4%	High Severity
9	Scepticisms about effectiveness	3.16	0.813	63.2%	High Severity
10	Lack of capacity for small-scale suppliers/contractors	3.13	0.917	62.6%	High Severity
11	Perceived complexity	3.07	1.114	61.4%	High Severity
12	Cultural attitudes	2.96	1.022	59.2%	Moderate Severity

Table seven (7) above shows the severity of attitudinal related factors to green procurement was assessed using the Severity Index (SI), calculated by dividing the mean score of each factor by the maximum Likert scale value (5) and multiplying by 100. The results indicate that "fear of higher cost" (SI = 91.8%) and “Failure to understand stakeholder needs” (SI = 80.8%) were perceived as very highly severe factors to implementation.

Other factors such as stakeholders’ resistance to change (69.8%), lack of leadership support (69.0%), and difficulty in measuring environmental impacts (66.8%) were rated as high severity, indicating widespread agreement about their negative influence. The lowest-ranked factor, "cultural attitudes" (SI = 59.2%), was classified under moderate severity, though it still reflects a meaningful obstacle to procurement reform.

5.1 Discussion

The study reveals that both government-related and attitudinal barriers significantly impede green procurement (GP) implementation in Nigeria, with poor awareness and policy gaps ranked as the most severe (SI = 88.6% and 88.2%). These findings align with international evidence. Ortega Carrasco *et al.* (2024) emphasized the absence of legal frameworks, political opposition, and budget constraints as consistent barriers worldwide. Evidence from Botswana’s public sector (Ayarkwa *et al.,* 2020; Ershadi *et al.,* 2021) further highlights relational and information-sharing difficulties within government agencies, underscoring the global need for stronger institutional support.

Attitudinal barriers in Nigeria, particularly fear of higher costs (SI = 91.8%), mirror international findings. Studies show that this perception often stems from limited knowledge of lifecycle costs and short-term budget pressures (AlNuaimi *et al.,* 2021; Opoku-Mensah *et al.,* 2024). Misconceptions about green products being costly or unreliable are widely documented, reinforcing risk-averse procurement behaviour. Training and awareness gaps also emerge as critical across contexts. Pătărlăgeanu *et al.,* (2020) stressed insufficient knowledge among public officials. Resistance to change and cultural attitudes, though moderate in Nigeria, parallel global findings where psychological resistance, competing stakeholder interests, and weak leadership commitment limit adoption (Preuss & Walker, 2015; Wu & Jia, 2018).

6.0 CONCLUSION AND RECOMMENDATIONS

This study identifies the most severe government-related and attitudinal barriers to GP implementation in Nigeria's public building projects, highlighting the dual challenge of weak institutional frameworks and negative stakeholder perceptions. To overcome these obstacles, the following recommendations are proposed:

1. Strengthen regulatory frameworks by enacting and enforcing compelling green procurement laws and policies.
2. Enhance awareness and capacity building through targeted training programs to improve knowledge and dispel misconceptions about costs.
3. Introduce incentives both financial and non-financial to encourage adoption and reward sustainable practices.

6.1 Research Implication

Based on the findings, Nigeria must adopt a comprehensive, multi-level approach to green procurement in public building projects. This requires moving from voluntary guidelines to mandatory legislation with clear regulatory frameworks that address both structural and attitudinal barriers. Such systemic intervention, rather than fragmented efforts, will accelerate green procurement integration and advance the country's sustainability and climate goals."

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