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Strategic Sustainable Procurement Practices and Competitive Project Performance of Listed Construction Firms in Abuja

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Abstract: *This study investigates the impact of Strategic Sustainable Procurement (SSP) practices on competitive project performance among listed construction firms in Abuja, Nigeria. Drawing on Institutional Theory, the research explores how environmental, social and economic dimensions influence project outcomes such as cost efficiency, quality delivery, and stakeholder satisfaction. Using a descriptive survey design, data were collected from 343 respondents across Julius Berger Nigeria Plc and Arbico Plc and analysed using SPSS regression techniques. Findings reveal a statistically significant positive relationship between all three SSP components and Timely Completion, with innovation and compliance exerting the strongest influence. Environmental and economic considerations also showed strong correlations with enhanced project outcomes, while social considerations had a moderate but meaningful effect. The study underscores that integrating SSP into procurement frameworks enables firms to meet sustainability goals, comply with regulations, and gain strategic advantages in Nigeria's competitive construction industry. It recommends that construction firms institutionalize SSP practices through policy reform, stakeholder collaboration, and continuous capacity building. This research contributes to bridging the empirical gap on sustainable procurement in developing economies and provides actionable insights for both industry practitioners and policymakers committed to driving sustainable development through responsible construction practices.*

Keywords: cost efficiency, quality delivery, stakeholder satisfaction, sustainability goals

INTRODUCTION

The construction sector in Abuja, Nigeria, is rapidly expanding, contributing significantly to national economic development due to increasing urbanization, population growth, and infrastructure demands. As the administrative capital, Abuja hosts a concentration of government and private sector-led construction projects, which require extensive material sourcing, logistics, and stakeholder coordination (Saka & Adegbembo, 2022; Alolote-Ibim & Dimkpa, 2022; Osuizugbo & Adenuga,

2022). However, this growth is accompanied by pressing sustainability challenges, including excessive resource consumption, environmental degradation, and poor labour practices. With global and national attention increasingly focused on sustainable development, there is a critical need for construction firms in Abuja to adopt strategic sustainable procurement practices that balance economic growth with environmental and social responsibility (Barbanti et al., 2022; Ewuga, Mulville & Hore, 2023; Agyapong, Opoku, Asiedu & Frimpong, 2024).

Strategic Sustainable Procurement (SSP) refers to procurement practices that integrate environmental stewardship, social equity, and economic viability into decision-making processes. Unlike conventional procurement, SSP promotes long-term value creation through stakeholder inclusion, ethical sourcing, and life-cycle costing (Barbanti et al., 2022; Ewuga et al., 2023; Agyapong et al., 2024). In the Abuja construction landscape, listed firms are increasingly expected to embrace these principles, not just for regulatory compliance but also to improve competitive performance. SSP enables firms to respond to sustainability expectations set by global frameworks such as the UN Sustainable Development Goals and ISO 20400, and national standards like Nigeria's National Building Code (Alolote-Ibim & Dimkpa, 2022; Ewuga et al., 2023; Agyapong et al., 2024).

Environmental sustainability remains a critical component of SSP, particularly in Abuja where rapid construction contributes to pollution, deforestation, and climate-related risks (Saka & Adegbembo, 2022; Osuizugbo & Adenuga, 2022; Ewuga et al., 2023). Through SSP, construction firms can reduce their environmental footprint by sourcing eco-friendly materials, selecting suppliers with green certifications, and adopting energy-efficient technologies. Compliance with regulatory bodies such as Nigeria's National Environmental Standards and Regulations Enforcement Agency (NESREA) also strengthens a firm's environmental governance, thereby reducing project risks and improving investor and public trust (Barbanti et al., 2022; Alolote-Ibim & Dimkpa, 2022; Ewuga et al., 2023).

Social sustainability is another vital consideration in procurement, especially given the concerns over labour rights, inclusion, and community impact in Nigeria's construction sector (Agyapong et al., 2024; Ewuga et al., 2023; Alolote-Ibim & Dimkpa, 2022). SSP supports fair employment practices, supplier diversity, and local community engagement. These practices can help firms avoid reputational damage, foster a motivated workforce, and promote inclusive development. Socially responsible procurement can also enhance stakeholder relationships and reduce project delays caused by labour disputes or community resistance (Ewuga et al., 2023; Barbanti et al., 2022; Agyapong et al., 2024).

From an economic perspective, SSP offers opportunities for cost optimization, risk reduction, and enhanced operational efficiency. While some sustainable products and practices may involve higher initial costs, they often yield long-term financial benefits such as lower maintenance costs, fewer project variations, and better stakeholder satisfaction (Barbanti et al., 2022; Ewuga et al., 2023; Agyapong et al., 2024). In Abuja's competitive construction environment, listed firms that embed sustainability into procurement not only fulfil regulatory obligations but also gain strategic advantages in quality assurance, project timeliness, and brand positioning (Saka & Adegbembo, 2022; Osuizugbo & Adenuga, 2022; Agyapong et al., 2024).

Despite increasing awareness, empirical evidence on the adoption and effectiveness of SSP among listed construction firms in Abuja remains sparse (Agyapong et al., 2024; Ewuga et al., 2023; Alolote-Ibim & Dimkpa, 2022). There is limited understanding of how SSP influences competitive project

outcomes such as cost control, stakeholder engagement, and project delivery efficiency. Moreover, firms continue to face challenges including regulatory complexity, limited procurement expertise, and low innovation capacity. Addressing these knowledge gaps is critical for building a resilient and sustainable construction sector in Abuja. Consequently, this study investigates the relationship between strategic sustainable procurement practices and competitive project performance among listed construction firms in Abuja, with the aim of providing actionable insights for industry transformation. To guide this investigation, the main objective of the study is to determine the impact of sustainable procurement practices on project performance within selected listed construction firms in Abuja. Specifically, the study aims to: (i) evaluate the impact of environmental considerations on timely completion; (ii) ascertain the influence of social considerations; and (iii) establish how economic considerations affect project timely completion. These objectives are structured to reflect the multidimensional nature of sustainable procurement, providing a comprehensive assessment of how each sustainability pillar influences construction outcomes in the Nigerian context. By addressing these dimensions individually and collectively, the study aims to provide actionable insights into the strategic integration of sustainability into procurement frameworks among top-tier construction firms. The scope of the study is centred on a quantitative analysis of sustainable procurement practices and their correlation with project performance outcomes in two publicly listed construction firms: Julius Berger Nigeria Plc and Arbico Plc. These firms were selected due to their prominence, project portfolio, and relevance to policy implementation in the Nigerian construction sector. Data will be gathered through structured surveys, performance reports, and project documentation, focusing on sustainability-related procurement indicators such as green purchasing, waste management, cost efficiency, quality compliance, and stakeholder satisfaction. Statistical tools such as regression and correlation analysis will be employed to assess relationships between procurement variables and project performance metrics. This empirical approach not only benchmarks firm-level sustainability practices against industry standards but also supports the formulation of evidence-based strategies for improving procurement policies and enhancing competitiveness within the sector.

LITERATURE REVIEW

Conceptual Review

Sustainable Procurement Performance (SPP) reflects how effectively construction firms integrate environmental, social, economic, and regulatory criteria into their procurement decisions and practices. It goes beyond cost-efficiency by emphasising long-term sustainability, supplier responsibility, and value creation. In the context of listed construction firms in Abuja, SPP is becoming increasingly vital as stakeholders demand transparency, ethical sourcing, and environmental accountability (Agyapong et al., 2024; Ewuga, Mulville & Hore, 2023; Barbanti et al., 2022). Key indicators of SPP include the use of eco-friendly materials, supplier compliance with labour and environmental standards, and support for local economic development. Through structured procurement performance metrics, firms can evaluate their alignment with sustainability goals and manage procurement-related risks effectively while improving project outcomes.

Environmental, social, and economic considerations serve as the foundational pillars of SPP. Environmental considerations focus on minimizing procurement-related ecological harm, such as pollution and carbon emissions, by sourcing renewable, recyclable, or energy-efficient products (Osuizugbo & Adenuga, 2022; Alolote-Ibim & Dimkpa, 2022). Social considerations relate to ethical labour practices, fair treatment of workers, human rights compliance, and active community

engagement — especially important in labour-intensive sectors like construction (Agyapong et al., 2024; Ewuga et al., 2023). Economic considerations, meanwhile, ensure that sustainability remains financially viable through life-cycle cost analysis, risk management, and supplier diversification (Barbanti et al., 2022). Balancing these dimensions supports more inclusive, ethical, and competitive procurement operations, aligning firms with national and international sustainability frameworks.

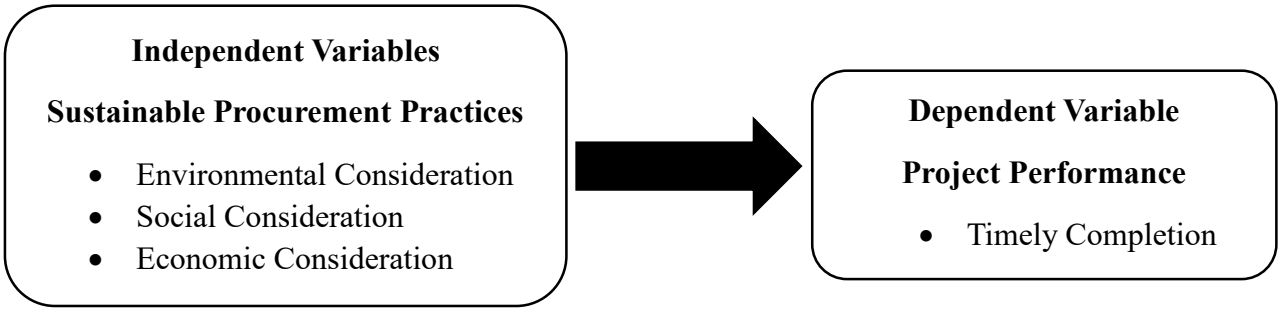

Figure 1 Conceptual Framework
Source: Author's Concept

Ultimately, the goal of implementing sustainable procurement is to enhance project performance and ensure timely completion, assessed through conventional metrics such as cost, time, and quality, as well as broader outcomes like stakeholder satisfaction and long-term value creation. Sustainable procurement practices contribute to performance by promoting efficient project delivery while upholding environmental responsibility and social inclusiveness (Messah, Wirahadikusumah & Abduh, 2023). Achieving timely completion within the "iron triangle" now requires integrating sustainability values such as client trust, regulatory compliance, and reputational advantage. Timely completion is thus no longer viewed in isolation but as part of a holistic outcome that supports organizational goals, benefits communities, and safeguards the environment—critical elements for maintaining competitiveness and resilience in Nigeria's evolving construction industry (Agyapong et al., 2024; Ewuga et al., 2023).

Theoretical Review

Institutional quality refers to the effectiveness, integrity, and stability of the formal and informal rules, policies, and governance structures that shape organizational behaviour and influence decision-making processes. In the context of the construction industry, institutional quality encompasses regulatory enforcement, transparency in procurement processes, stakeholder accountability, and the presence of well-defined sustainability frameworks (Mudashir, Zadawa & Mohammed, 2024; Ewuga, Mulville & Hore, 2023). High institutional quality fosters an environment where sustainable procurement practices are not only encouraged but also structurally supported through consistent policy enforcement, accessible industry standards, and public-sector leadership. This is particularly relevant in Abuja's construction sector, where the degree of institutional support can significantly determine the extent to which firms adopt and internalize sustainable procurement practices (Osuizugbo & Adenuga, 2022; Ershadi et al., 2021). Conversely, weak institutions—marked by corruption, regulatory uncertainty, or limited enforcement—can create disincentives for firms to invest in long-term sustainable practices due to perceived risks or a lack of accountability.

In this study, institutional quality is highly relevant because it serves as both a contextual enabler and constraint for sustainable procurement adoption and its impact on project performance. Institutional Theory posits that firms operate under coercive, normative, and mimetic pressures from their institutional environments, and the strength of these pressures is closely tied to institutional quality (Agyapong et al., 2024; Alolote-Ibim & Dimkpa, 2022). Construction firms may adopt sustainable procurement not only for intrinsic value creation but also to comply with legal requirements, gain legitimacy, and align with industry peers. Strong institutions ensure that sustainability norms are diffused effectively, while also monitoring compliance and fostering transparency in procurement decisions. Therefore, assessing institutional quality provides critical insight into why some firms successfully implement sustainable procurement strategies that lead to improved project outcomes, while others fall short. In essence, institutional quality shapes the organizational incentives, constraints, and legitimacy dynamics that ultimately influence both procurement behaviour and project performance.

Empirical Review

The empirical review summarizes recent studies on sustainable procurement practices, focusing on their adoption, drivers, and impact on project performance. It highlights key findings, methodologies, and gaps relevant to construction and related sectors, especially in developing economies.Mudashir, Zadawa, and Mohammed (2024) investigated the influence of sustainable procurement practices on project delivery in Nigeria's construction industry. Using a stratified sampling approach, they distributed 113 questionnaires and received 106 valid responses. Both descriptive and inferential statistics were applied. The study identified key sustainable drivers such as environmental impact assessments, life-cycle analysis, and client commitment, all of which significantly enhanced project performance. Their findings emphasized the practical role sustainable procurement plays in improving construction delivery outcomes.

Nangpiire, Gyebi, and Nasse (2024) examined how sustainable procurement practices—specifically staff competency, IT infrastructure, and top management support—predict performance among SMEs in Ghana. Through an explanatory research design, data were collected from 317 SME managers and analysed using Smart PLS 4.0 for structural equation modelling. Results showed that staff competency had no significant effect, but IT infrastructure and management support had moderate positive impacts. The study underscores the strategic importance of infrastructure and leadership in achieving procurement-driven performance gains.

Agyapong, Opoku, Asiedu, and Frimpong (2024) explored how sustainable procurement practices (green, lean, and ethical) impact environmental, social, and economic performance in Ghana's food manufacturing SMEs. They surveyed 180 SMEs and analysed data using PLS-SEM in SmartPLS and SPSS. Results showed all three performance dimensions improved with sustainable practices, though lean procurement had no significant effect on economic performance. The study highlights the value of holistic procurement strategies in enhancing sustainability but cautions against assuming uniform impacts across all sustainability pillars.

Msakwa (2023) assessed the level of sustainable procurement implementation in building projects by the Tanzania Atomic Energy Commission (TAEC). Using a case study method, the research collected primary data from 60 respondents via questionnaires and interviews, and supplemented it with secondary documents. The findings revealed that public institutions like TAEC have adopted sustainable procurement at a very low rate. This underperformance points to systemic barriers and the

need for institutional reforms to drive procurement-based sustainability in Tanzanian public construction projects.

Ewuga, Mulville, and Hore (2023) investigated internal organizational strategies for supporting sustainable procurement among Ireland's top 50 construction contracting firms. A sequential mixed-methods approach was used to collect and analyze data related to firm policies, practices, and sustainability performance. The study found that while many firms had some form of sustainability policy, implementation gaps persisted. It identified several areas needing improvement, particularly in aligning internal strategies with operational execution, thereby calling for stronger governance and clearer accountability structures.

Ogunsanya, Aigbavboa, and Thwala (2023) aimed to design and validate a sustainable procurement model for publicly funded construction projects in Nigeria. They collected data from 320 construction professionals using surveys and analyzed it through structural equation modeling (SEM). The study initially proposed a six-factor model and refined it into a validated five-factor model (Model 2.0). Key findings confirmed that factors within this model—such as environmental, social, and economic dimensions—had significant direct effects on sustainable procurement, providing a structured approach for practical application.Osuizugbo and Adenuga (2022) assessed the most critical factors for achieving sustainable procurement in Nigerian construction projects. Using a questionnaire distributed to 243 stakeholders across client, consultancy, and contractor organizations, the study employed descriptive and inferential statistics. Findings highlighted "value for money," "non-toxic environments," and "stakeholder satisfaction" as the top-ranked factors. These insights provide a framework for prioritizing elements that construction stakeholders consider essential for embedding sustainability into procurement processes.

Ogunsanya, Aigbavboa, Thwala, and Edward (2022) examined barriers to sustainable procurement in publicly funded Nigerian construction projects. The study utilized a questionnaire survey completed by 320 industry professionals, followed by factor analysis. Results categorized the barriers into four key clusters: construction industry challenges, procurement strategy-policy misalignment, governance issues, and low awareness. The findings offer valuable recommendations for policy and industry stakeholders to overcome systemic and structural barriers limiting the implementation of sustainable procurement in public construction.Barbanti et al. (2022) evaluated the adoption of sustainable procurement in Brazilian manufacturing firms through the lens of ISO 20400. A survey based on the ISO framework was analyzed using the CRITIC method. The study found wide variations in adoption, particularly in social dimensions. Alarmingly, 20% of firms overlooked key social factors like community job creation and human rights. This indicates that while firms may engage with environmental metrics, social sustainability remains significantly under-integrated in supplier selection processes.

Alolote and Dimkpa (2022) examined the accuracy of cost estimation techniques in electrical project procurement in Port Harcourt, Nigeria. Drawing on quantitative analysis of 161 bills of quantities from a six-year dataset, the study revealed that 65.83% of estimates relied on preliminary sums, while 34.17% used detailed measurements. Findings indicated a significant accuracy gap, with detailed measurements offering more reliable forecasts. This highlights the need for improved procurement planning and estimation standards, especially for technical installations in construction projects.

The literature on sustainable procurement practices reveals several critical gaps that offer avenues for further research. Firstly, while studies such as those by Mudashir et al. (2024) and Ewuga, Mulville & Hore (2023) provide valuable insights within specific sectors, there remains a lack of cross-sectoral and multi-regional empirical research that could reveal shared challenges and transferable strategies. Secondly, although some works identify drivers and barriers to adoption (e.g., Agyapong et al., 2024), few evaluate the effectiveness of actual interventions or policies promoting sustainable procurement. Lastly, much of the literature focuses primarily on environmental dimensions, with limited exploration of how sustainable procurement intersects with social equity and economic development, despite its potential to contribute to inclusive growth, job creation, and broader societal well-being (Alolote-Ibim & Dimkpa, 2022; Cohen et al., 2019).

METHODOLOGY

This study employed the survey research design. The study examined a population of 2,398 employees from the engineering and procurement departments of Julius Berger Plc (1,376) and Arbico Plc (1,022) in Abuja. These departments were chosen for their direct involvement in procurement planning and execution, providing valuable insights into sustainable procurement practices. Using Taro Yamane's (1967) formula, a representative sample of 343 respondents was determined—197 from Julius Berger and 146 from Arbico—distributed proportionally. Stratified random sampling ensured equal selection chances across roles, while simple random sampling improved generalizability and cost-efficiency. This structured approach ensured credible, diverse, and representative data collection for analysing procurement strategies and timely completion.

The sample size is the part of the population that was selected for the study. The Taro Yamane 1967 sample size determination is as follows.

$$n = \frac{N}{1+N(e)^2} \qquad (3.1)$$

Where, n = sample size
N = population (2398)
1 = Unity (a constant)
(e) ^{2} = level of significance ((e) = 0.05)

$$n = \frac{2398}{1 + 2398(0.05)^2}$$

$$n = \frac{2398}{1 + 2398 * 0.0025} = \frac{2398}{1 + 5.995} = \frac{2398}{6.995} = 343$$

The sample size above shows that out of the total staff population of 2398 only 343 staff were selected as calculated from the Taro Yamane (1967) formula above, thus, the questionnaire distributed were 343 sample questionnaires to Julius Berger, Plc and Arbico Plc Nigeria. Meanwhile simple random techniques will be used to distribute the instrument to the respondents.

Table 1 Population and Analysis of Sample Distribution

S/No	Companies	Population	Sample
1	Julius Berger, Plc	1376	$\frac{1376}{2398} * 343 = 197$
2	Arbico Plc	1022	$\frac{1022}{2398} * 343 = 146$
	Total	**2398**	**343**

A multiple regression model was employed in evaluating the impact of sustainable procurement practices on the organisational performance of listed construction companies in FCT Abuja, as this helped to show the relationship between the two variables. The independent variable is the sustainable procurement practices (environmental considerations, social considerations, economic considerations, innovation and compliance) while the dependent variable is the organisational performance (measured in Timely Completion) of construction companies in FCT Abuja. The model adopted the suggestion of Mudashir, Zadawa and Mohammed (2024), which though captured environmental considerations, social considerations and economic considerations.

$TC_i = \delta_0 + \delta_1 ECN_i + \delta_2 SCN_i + \delta_3 ECC_i + \mu_i$

Where: PS means Timely Completion; ECN represent environmental consideration; SCN stands for social consideration; ECC represents economic considerations; δ_0 is the constant; $\delta_1 \, to \, \delta_3$ are parameters to be estimated; μ_i is the error term.

This study adopted a descriptive research design utilising survey technique, a method well-suited for assessing sustainable procurement practices and their influence on organisational performance without manipulating variables (Creswell & Creswell, 2017). Data were collected using structured questionnaires distributed to staff in listed construction companies in Abuja, particularly those involved in procurement and project execution. The questionnaire comprised two sections—bio-data and knowledge (Section A), and sustainable procurement practices and performance metrics (Section B)—and used a five-point Likert scale. Purposive sampling targeted engineers and project managers to ensure relevant input. Data were analysed using SPSS version 26.0 through descriptive statistics and regression analysis to interpret patterns, identify trends, and assess the predictive relationship between procurement practices and project outcomes (Neuman, 2014).

Table 2 Reliability Statistics

Variables	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
Environmental Consideration	0.899	0.865	5
Social Consideration	0.869	0.837	5
Economic Consideration	0.952	0.868	5
Timely Completion	0.958	0.879	5

Sources: Author's Computation, 2025

To ensure content validity, the questionnaire was rigorously reviewed for clarity, readability, and alignment with research objectives, with expert input from professionals in procurement and project management guiding revisions (Kothari, 2019). A test-retest method confirmed the instrument's consistency over time, and each item was aligned with the study's conceptual framework to enhance construct validity. Reliability was measured using Cronbach's Alpha, with values ranging from 0.869 to 0.958 across five constructs—Environmental Consideration (0.899), Social Consideration (0.869), Economic Consideration (0.952) and Timely Completion (0.958)—all exceeding the acceptable threshold of 0.7 (Tavakol & Dennick, 2011), indicating strong internal consistency and statistical rigour using IBM SPSS.

RESULTS AND DISCUSSIONS

The questionnaire used for this research was distributed online through survey planet which makes it possible for all the questionnaire to be returned. Table 4.1 presents the distribution and return rates of questionnaires across two organizations: Julius Berger Nigeria Plc and Arbico Plc. A total of 343 questionnaires were distributed, with 197 sent to Julius Berger Nigeria Plc and 146 to Arbico Plc. The return rate was high, with 338 out of 343 questionnaires returned, accounting for a total response rate of 98.54%. Specifically, Julius Berger Nigeria Plc returned 195 questionnaires, reflecting a return rate of 56.85%, while Arbico Plc returned 143 questionnaires, resulting in a return rate of 41.69%. This indicates a strong overall response from both companies.

Table 3 Questionnaire Distribution and Returns

Organisations	Distributed	Returned	Percentage (%)
Julius Berger Nigeria Plc	197	195	56.85
Arbico Plc	146	143	41.69
Total	343	338	98.54

Source: Author's Computation (2025)

This research examined three key demographic elements: years of experience, profession, and academic qualifications, to establish the validity of the questionnaire. Figure 2 highlights respondents' years of experience, which is crucial in understanding their exposure to project implementation and risk management. The analysis reveals that 42% of respondents have 0–5 years of experience, forming the majority. About 15% have between 6–10 years, representing the second-largest group. The third-highest category includes those with 16–20 years of experience, followed by respondents with 11–15 years. Other categories include individuals with 21–25 years and 26–30 years of experience. The last group, comprising those at the management level, possesses the highest level of experience. Overall, the research captures a broad range of experience levels among respondents, indicating that the data gathered is informed by diverse perspectives and practical exposure to project implementation.

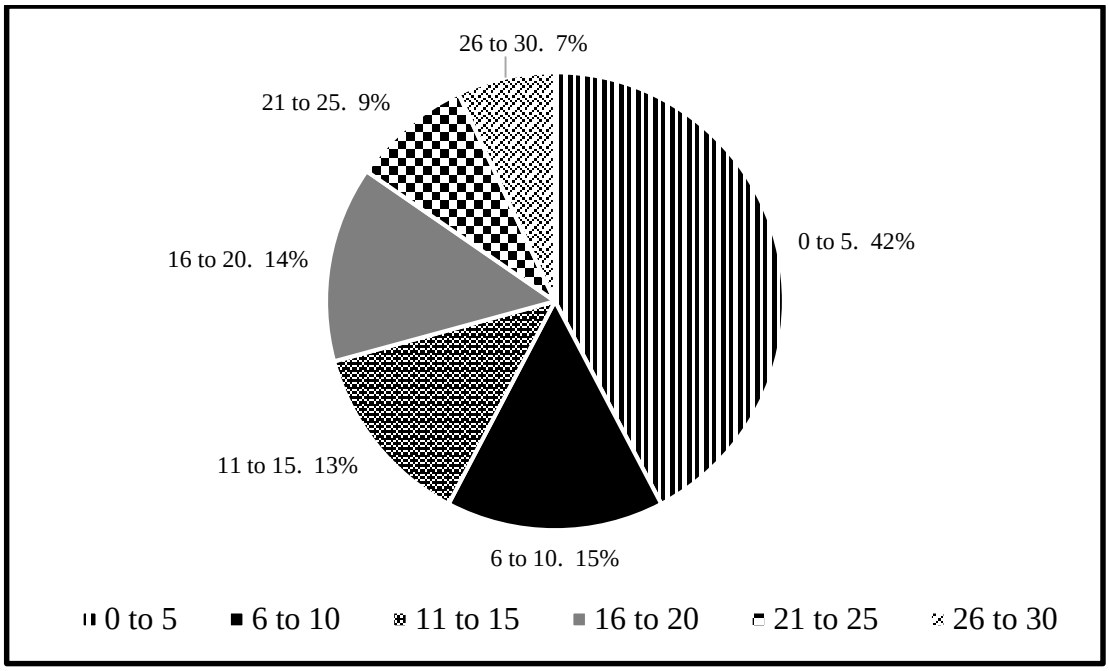

Figure 2 Distribution of the Years of Experience of the Respondents
Sources: Author's Computation (2025)

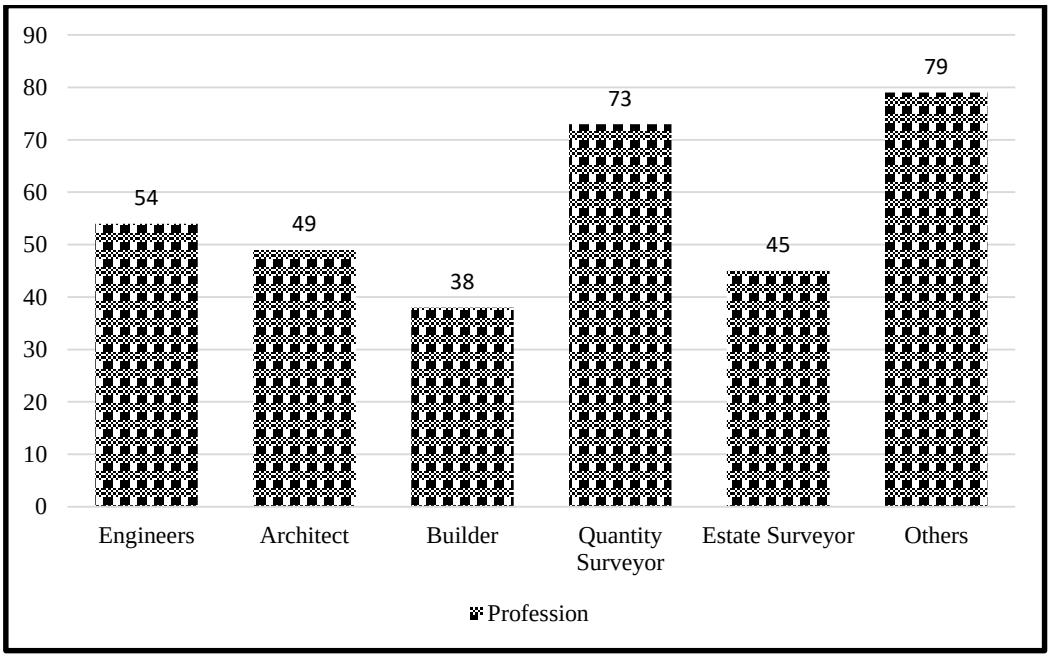

Figure 3: Distribution of the Profession of the Respondents
Sources: Author's Computation (2025)

Figure 3 presents an analysis of the professional composition of respondents from Julius Berger Nigeria Plc and Arbico Plc. Out of the 338 participants, Quantity Surveyors are the most represented group, with 73 individuals (21.6%), highlighting their essential role in cost control and project estimation. The "Others" category, which includes various related but unspecified professions,

comprises 79 individuals (23.4%), reflecting the sector's diversity. Engineers follow with 54 participants (16%), emphasizing their contributions to technical and structural project elements. Architects account for 49 respondents (14.5%), pointing to their involvement in design and planning. Builders, totalling 38 professionals (11.2%), represent those directly responsible for construction execution. Additionally, 45 Estate Surveyors (13.3%) signify the importance of valuation and property management within the construction process. This varied professional representation provides a well-rounded perspective on sustainable procurement practices, ensuring insights from multiple critical areas such as design, implementation, and financial oversight.

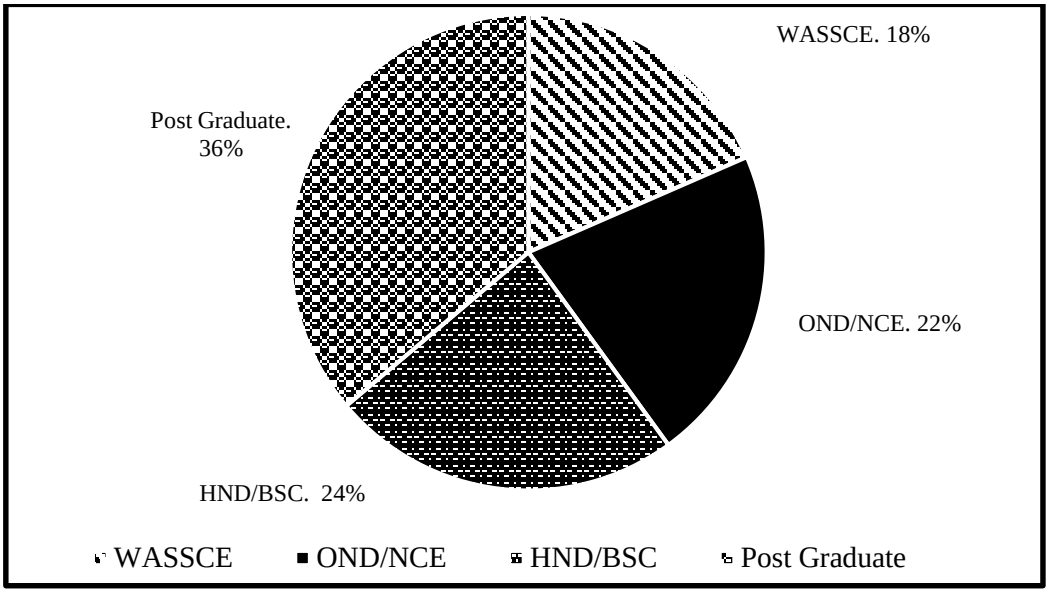

Figure 4 Distribution of the Academic Qualification
Sources: Author's Computation (2025)

Figure 4 illustrates the diversity of educational qualifications among permanent staff at Julius Berger Nigeria Plc and Arbico Plc. Approximately 18% of employees hold only WASSCE certificates, typically occupying lower-level positions responsible for manual tasks. About 22% possess OND/NCE qualifications, placing them slightly higher in the organisational hierarchy. A significant portion—24%—hold HND/BSc degrees, representing mid-level professionals with technical and managerial responsibilities. Notably, 36% of the staff have postgraduate qualifications, indicating a strong presence of highly educated personnel in senior roles. This broad distribution of educational backgrounds reflects the varied skill sets required to meet the multifaceted demands of the construction industry, from hands-on fieldwork to complex planning and management.

Correlation and Descriptive Statistics

Data collected for this study were carefully checked for errors before being analyzed using SPSS version 27. Descriptive statistics, including means and standard deviations, were applied to examine the data, while Ordinary Least Squares (OLS) regression was used based on the model previously established. Since the data was primary in nature, post-estimation diagnostics like unit root tests were deemed unnecessary, but basic OLS assumptions were observed. The questionnaire was administered online via Survey Planet, ensuring a 100% response rate from all 338 staff identified in Chapter Three.

The average scores derived from the questionnaires were used to determine the values for each variable included in the model.

Table 4: Inter-Item Correlation Matrix

Variables	TC	ECN	SCN	ECC
TC	1			
ECN	0.336	1		
SCN	0.442	0.546	1	
ECC	0.462	0.391	0.511	1

Note: PS means Timely Completion; ECN represent environment consideration; SCN stands for social consideration; ECC represent economic consideration
Source: Author's Computation (2025)

Table 4 presents the correlation matrix, revealing positive relationships between Timely Completion (PS) and the four key sustainability-related variables: Environmental Consideration (ECN), Social Consideration (SCN), and Economic Consideration (ECC). The highest correlation exists between PS and ECC (0.462), suggesting that economic factors significantly influence project outcomes. ECN correlates moderately with SCN (0.546), indicating that environmental responsibility tends to align with social and innovative practices. Importantly, none of the variables exhibited multicollinearity concerns.

Table 5 provides both descriptive and reliability statistics. Panel A shows the mean scores for the variables ranged from 4.13 to 4.55, suggesting a generally positive assessment of sustainability practices across respondents. ECC had the highest mean (4.55), indicating strong economic performance perceptions, while PS had the lowest (4.13), though still positive. The standard deviations ranged from 0.40 to 0.51, showing minimal variability. Panel B confirms the reliability of the questionnaire, with a Cronbach's Alpha of 0.833, exceeding the minimum threshold and indicating strong internal consistency across the variables. This affirms that the survey instrument reliably measured the intended constructs.

Table 5 Descriptive and Reliability Statistics

Panel A: Descriptive Statistics

Variables	Mean	Std. Deviation	N
Timely Completion	4.127860303454	0.43324414675	338
Environment Consideration	4.477575850789	0.51246656789	338
Social Consideration	4.227507723457	0.42457955672	338
Economic Consideration	4.548273010456	0.40452340482	338

Panel B: Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items	N
0.833	0.812	4	338

Source: Author's Computation (2025)

Hypothesis Testing

The estimated regression analysis tested the hypothesis on the impact of sustainable procurement practices—measured by Environmental, Social, and Economic Considerations—on project performance, using Timely Completion as the dependent variable. The model yielded an R-Square value of 0.657, indicating that 65.7% of the variation in Timely Completion is explained by the independent variables, while the Adjusted R-Square of 0.542 confirms the model's strength after accounting for the number of predictors. These values suggest a good model fit with strong explanatory power. Additionally, the Durbin-Watson statistic of 2.111 indicates minimal autocorrelation, meaning the residuals are largely independent and the model is statistically reliable.

$H0_1$: Environmental consideration has no significant impact on timely Completion of listed construction companies in Abuja, Nigeria.

The first objective of this study was to assess the impact of environmental considerations on Timely Completion in listed construction companies in Abuja, Nigeria. Regression analysis revealed a significant positive effect, with a coefficient of 0.443, p-value of 0.0000, and a strong t-statistic of 4.324. This indicates that incorporating eco-friendly practices—such as waste reduction, pollution control, and environmental assessments—enhances project outcomes. The findings underscore the importance of green initiatives in improving project performance. Therefore, the null hypothesis (H_{O1}), which states that environmental consideration has no significant impact on timely completion, is rejected. The results suggest that environmentally sustainable practices contribute to timely project completion and can be generalised across similar construction environments.

Table 6: Regression Analysis on Impact of Sustainable Procurement Practices on Project Performance of Selected Construction Companies

	Unstandardized Coefficients			
Variables	φ	Std. Error	t-stat	p-value
Constant	1.634	0.217	5.222	0.0000
Environment Consideration	0.443	0.012	4.324	0.0000
Social Consideration	0.324	0.024	3.216	0.0044
Economic Consideration	0.551	0.214	4.057	0.0000
R-Square	0.657	Durbin-Watson		2.111
Adjusted R-square	0.542			

Source: Author's Computation (2025)

$H0_2$: There is no significant relationship between social consideration and Timely Completion of listed construction companies in Abuja, Nigeria.

The second objective of this study was to determine the impact of social considerations on Timely Completion in listed construction companies in Abuja, Nigeria. The analysis revealed a positive and statistically significant effect, with a coefficient of 0.324, a p-value of 0.0044, and a t-statistic of 3.216. This suggests that incorporating social responsibility, such as fair labour practices, worker safety, and community engagement, enhances project outcomes. Though the impact is smaller than that of environmental considerations, it remains crucial. Companies prioritising social factors are more likely to achieve Timely Completion. Consequently, the null hypothesis (H_{O2}), stating no significant relationship between social consideration and Timely Completion, is rejected. The result indicates that social factors also support timely and effective project completion.

$H0_3$: Economic consideration has no significant influence Timely Completion of listed construction companies in Abuja, Nigeria.

The third objective of this study was to assess the impact of economic consideration on Timely Completion in listed construction companies in Abuja, Nigeria. The analysis revealed a strong positive relationship, with a coefficient of 0.551, a p-value of 0.0000, and a t-statistic of 4.057. This indicates that economic practices such as cost efficiency, financial sustainability, and budget control significantly enhance project performance. These findings confirm that effective financial management is a key driver of Timely Completion. Alongside environmental and social factors, economic sustainability plays a vital role in achieving overall project goals. Therefore, the null hypothesis (H_{O3}), which states that economic consideration has no significant influence, is rejected.

DISCUSSION OF FINDINGS

The findings of this study confirm that environmental consideration significantly influences Timely Completion in listed construction companies in Abuja, aligning with the empirical review by Mudashir, Zadawa, and Mohammed (2024), who found that environmental impact assessments and life-cycle analysis improve project outcomes in Nigeria's construction sector. The strong positive coefficient of 0.443 and a highly significant p-value suggest that incorporating eco-friendly practices such as pollution control and sustainable resource use enhances project performance. These results also echo the work of Agyapong et al. (2024), who linked green procurement practices to improved environmental and project performance. Thus, the adoption of environmental sustainability in procurement not only benefits the environment but also contributes to timely and successful project completion.

Regarding social consideration, the study observed a positive and significant effect on Timely Completion, with a coefficient of 0.324 and p-value of 0.0044. This supports the findings of Nangpiire, Gyebi, and Nasse (2024), who emphasized the role of staff competence and management support in achieving procurement-driven performance in Ghanaian SMEs. Similarly, Osuizugbo and Adenuga (2022) highlighted stakeholder satisfaction and non-toxic environments as key to sustainable procurement success. The result underscores that socially responsible practices—such as fair labour treatment, community engagement, and workforce welfare—are vital to construction project outcomes, reinforcing the broader social responsibility obligations construction firms must uphold.
Economic consideration also showed a strong and statistically significant influence on Timely Completion, aligning with the study by Ogunsanya, Aigbavboa, and Thwala (2023), who developed a validated model highlighting economic sustainability as a critical factor. The coefficient of 0.551 and

the p-value of 0.0000 reflect that cost-effectiveness, budget control, and financial sustainability are essential for successful project delivery. Additionally, the highest positive coefficient for Innovation and Compliance (0.632) reinforces the position taken by Ewuga, Mulville, and Hore (2023), who stressed the need for firms to align internal innovation strategies with sustainable practices. The results suggest that firms prioritizing innovation and regulatory compliance benefit from increased efficiency and Timely Completion, affirming that sustainable procurement must be holistic, integrating environmental, social, economic, and compliance dimensions to drive meaningful performance outcomes.

The results of this study align closely with Institutional Theory, highlighting how institutional quality shapes sustainable procurement practices and Timely Completion. The significant positive impacts of environmental, social, economic, and innovation-related considerations on project performance suggest that construction firms in Abuja are responding to institutional pressures—coercive (regulatory), normative (industry standards), and mimetic (peer practices)—to adopt sustainable practices. These findings support the view that high institutional quality, marked by effective regulation, transparency, and accountability, provides the structural foundation necessary for firms to internalize sustainability norms (Mudashir, Zadawa, & Mohammed, 2024; Ewuga, Mulville, & Hore, 2023). As Institutional Theory suggests, firms act not only out of strategic interest but also to gain legitimacy and meet external expectations (Agyapong, Opoku, Asiedu, & Frimpong, 2024; Alolote-Ibim & Dimkpa, 2022). Thus, institutional quality acts as a critical enabler of sustainable procurement's success in the construction sector, influencing organisational behaviour, decision-making, and ultimately, project performance.

CONCLUSION AND RECOMMENDATIONS

This study conclusively demonstrates that strategic sustainable procurement practices (SSP) have a significant and positive impact on competitive project performance among listed construction firms in Abuja, Nigeria. Through a robust regression analysis, the findings confirmed that environmental, social, and economic considerations, along with innovation and compliance, are strong predictors of timely completion. These results align with the propositions of Institutional Theory, affirming that firms in Abuja are not only responding to regulatory and normative pressures but are increasingly internalising sustainability as a competitive strategy. In effect, integrating SSP into construction procurement enhances project delivery outcomes, stakeholder satisfaction, risk mitigation, and long-term value creation in a sector marked by environmental and social challenges.

Based on the findings, the study recommends that construction firms in Abuja institutionalize SSP by embedding sustainability metrics into procurement policies, staff training, and performance evaluations. Policymakers and regulatory agencies should strengthen enforcement mechanisms, streamline compliance frameworks, and incentivize innovation through tax rebates and green certification programs. Firms should also invest in capacity building—especially for procurement and engineering personnel—to increase awareness and competence in life-cycle costing, green technologies, and ethical sourcing. Moreover, collaboration with local communities and stakeholders should be prioritized to boost social inclusion and reduce project disruptions. Lastly, ongoing monitoring and evaluation systems should be established to track SSP outcomes and continuously align procurement strategies with both national development goals and global sustainability frameworks.

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