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# ASSESSING MITIGATING MEASURES TO BARRIERS TO STAKEHOLDER ENGAGEMENT IN SUSTAINABLE PROCUREMENT OF PUBLIC WORKS

**Praise JOSHUA[1], Hassan A. AHMADU[2], and Olajide OLAMILOKUN[3]**
[1&2]Department of Quantity Surveying, Ahmadu Bello University, Zaria, Nigeria
[3]Department of Quantity Surveying, Kaduna State University, Kaduna, Nigeria

Corresponding Author Email: praizyjosh@yahoo.com

***ABSTRACT***

***Purpose:*** *The absence of effective stakeholder engagement in sustainable procurement of public works has been attributed to several barriers identified in literature. This study aims to assess mitigating measures suitable for overcoming these barriers in order to strengthen efforts to improve adoption and implementation of sustainable procurement of public works.*

***Design/methodology/approach:*** *This study adopts a quantitative research approach to comprehensively identify, analyse, and propose solutions for overcoming these barriers. It involved an extensive literature review to identify barriers and mitigating measures which were used to develop a questionnaire distributed to registered procurement officers in Federal Ministries in Nigeria. Descriptive statistics was used to assess the barriers and mitigating measures, while regression analysis was used to determine mitigating measures suitable for overcoming each barrier.* ***Findings:*** *The study found that the mitigating measures most suitable for overcoming the barriers to effective stakeholder engagement in sustainable procurement of public works to be; "establishing partnership and collaboration among stakeholders", "incorporating stakeholder feedback" and "providing incentives".*

***Practical implications:*** *This study offers relevant data for policymakers as well as organisations to strategically establish mechanisms to address critical barriers to stakeholder engagement in the sustainable procurement of public works. It provides a basis for effective stakeholder feedback on procurement decisions and processes, ensuring transparency and inclusivity in the procurement of public works.*

***Originality/value:*** *The study uncovered mitigating measures for the barriers hindering stakeholder engagement in the sustainable procurement of public works, thereby fostering the successful implementation of sustainable procurement practices in public works projects.*

**Keywords:** Sustainable Procurement, Public works, Stakeholders, Engagement, Barriers, Mitigating measures.

[1] Email: kesj@kasu.edu.ng

## 1.0 INTRODUCTION

There is increasing concern with sustainable development and the impact of businesses on society and the environment (Walker & Brammer, 2012). In response to these concerns, the concept of sustainable procurement has evolved as a strategic approach to align purchasing practices with environmental, social, and economic objectives. Its origins can be traced to the 1992 United Nations Conference on Environment and Development (UNCED), also known as the Rio Earth Summit, where Agenda 21 emphasized the need for sustainable consumption and production patterns (United Nations, 1992). This momentum was reinforced by the 2002 World Summit on Sustainable Development in Johannesburg, which urged governments to integrate sustainability considerations into public procurement policies (United Nations, 2002). Sustainable procurement has since been recognized as a key policy instrument that enables Organisations to use their purchasing power to support environmentally responsible, socially equitable, and economically viable outcomes (Bratt et al., 2013; Testa et al., 2016). In the context of public works, sustainable procurement plays a critical role in ensuring that government projects not only meet the needs of the present but also contribute to a sustainable future (Michelsen & de Boer, 2009). Sustainable procurement in public works offers a broad range of benefits, one of which is long-term cost efficiency. By incorporating energyefficient materials, resource optimization, and sustainable supply chains, public works projects can achieve reduced operational costs and minimize waste throughout the lifecycle of the project (Testa et al., 2021; Sanchez et al., 2021).

The implementation of sustainable procurement has garnered significant attention in recent research, with studies exploring various aspects such as awareness, key drivers and critical success factors that influence its adoption and implementation (Meehan & Bryde, 2011; Walker and Brammer, 2012; Shaikh and Channa, 2022; Santos, Lozano and Barreiro-Gen, 2024; Al Nuaimi, Khan and Ajmal, 2020; Riadi and Machfudiyanto, 2023). More recently, researchers have noted that effective stakeholder engagement is a cornerstone of successful sustainable procurement implementation. Their involvement is crucial for identifying needs, setting priorities, and ensuring that procurement processes align with broader sustainability goals. Engaging stakeholders effectively can lead to better project outcomes, enhanced social acceptance, and improved environmental performance (Agyekum, Akomea-Frimpong & Pittri, 2022).

Despite the recognized importance of stakeholder engagement, numerous barriers continue to impede effective participation from key stakeholders (Persson & Olander, 2004; Walker & Brammer, 2012; Zarewa, 2019; Agyekum, Akomea-Frimpong & Pittri, 2022). These barriers manifest in various forms, including institutional constraints, cultural resistance, economic challenges, and technical complexities (Williams, 2024). According to Oyewobi & Jimoh (2022), overcoming these challenges is vital for enhancing the effectiveness of sustainability initiatives. While several researches (Shaikh et al., 2022; Agyekun, Fugar, Agyekum, Akomea-Frimpong, and Pittri, 2023; Riadi and Machfudiyanto, 2023; Masoud, 2023) have been carried out to identify and assess these barriers, measures best suited to mitigate these barriers has not been uncovered in literature. The absence of research on mitigating measures to the barriers hindering stakeholder engagement in sustainable procurement in public works constitute a significant gap in literature which this study intends to bridge. This study seeks to bridge this gap by assessing mitigating measures to barriers to stakeholder engagement in the sustainable procurement of public works, thereby fostering the successful implementation of sustainable procurement practices in public works projects. The objectives of this study are to identify barriers to

stakeholder engagement in sustainable procurement, and assess mitigating measures to barriers to stakeholder engagement in sustainable procurement of public works.

## 2.0 LITERATURE REVIEW

### 2.1 Barriers to Stakeholder Engagement in Sustainable Procurement

Stakeholder engagement is critical for the success of sustainable procurement initiatives, yet numerous barriers hinder meaningful participation. Agyekum et al. (2022) contribute significantly to the understanding of stakeholder engagement in sustainable procurement, particularly within the context of public works in developing economies. They along with several authors (Grandia, 2016; Agyekum et al., 2022; Preuss, 2009; Meehan & Bryde, 2011; Amann et al., 2014; Miller, 2020; Wanner, and Probstl-Haider, 2019) provide an in-depth analysis of the barriers that hinder effective stakeholder engagement in the sustainable procurement of public works. Table 1 presents a summary of these barriers.

**Table 1:** Barriers to Stakeholder Engagement reported in Previous Studies

| S/N | Barriers | Authors |
|---|---|---|
| 1 | Lack of clear policies and guidelines | Agyekum et al. (2022), Grandia (2016) |
| 2 | Complexity of Regulations or procurement processes | Miller (2020), McCrudden (2004) |
| 3 | Organisational structure and culture | Loosemore (2016), (Miller 2020) |
| 4 | Limited Collaboration between private and public sectors | Uyarra et al. (2020) |
| 5 | Organisational resistance to change | Grandia (2016), Walker and Brammer (2012) |
| 6 | Lack of understanding of sustainability requirement | Aarseth et al. (2017) |
| 7 | Conflicting interest among stakeholders | Agyekum et al. (2022), Miemczyk, Johnsen, and Macquet (2012) |
| 8 | Lack of stakeholder interest or buy-in | Manetti (2011), |
| 9 | Inadequate communication among stakeholders | Meehan & Bryde (2011), Lehtonen (2014) |
| 10 | Lack of awareness of sustainable procurement | Testa et al. (2012), Manetti (2011) |
| 11 | Insufficient Budget or financial resources | McMurray et al. (2014), Testa et al. (2012), Wanner, and Probstl-Haider (2019) |
| 12 | Lack of incentives | Amann et al. (2014), Bratt et al. (2013) |
| 13 | Lack of training and knowledge | Preuss (2009), Meehan & Bryde (2011) |

### 2.2 Strategies for Overcoming Barriers to Sustainable Procurement

Effectively overcoming barriers to stakeholder engagement in sustainable procurement requires implementing collaborative, incentive-driven, and policy-focused strategies (Grandia, 2016; Walker & Brammer, 2012). These approaches address institutional, cultural, economic, and technical barriers while fostering a culture of sustainability. Michelsen & de Boer (2009) opined that integrated stakeholder collaboration between local governments, private suppliers, and non-governmental Organisations will go a long way in implementation of sustainable procurement practices. Several authors have identified mitigating measures to barriers to stakeholder engagement in procurement and sustainable procurement across different fields and geographical locations. Table 2 below shows addressing the barriers to sustainable procurement requires a multifaceted approach, as evidenced by the range of mitigating measures identified in literature. Establishing partnerships or collaborations

with stakeholders (Uyarra et al., 2020) is frequently emphasized as a foundational strategy, fostering trust and shared goals. However, partnerships alone may be insufficient without the support of clear and enforceable policies that provide direction in sustainable practices (Mosgaard, 2015; Walker & Brammer, 2012). Equally important is the role of communication between stakeholders (Michelsen & de Boer, 2009) can bridge knowledge gaps and reduce resistance. Training and capacity-building efforts (McMurray et al., 2014; Meehan & Bryde, 2011) are instrumental in equipping stakeholders with the skills and knowledge required to engage in sustainable procurement, though their long-term impact hinges on consistent follow-up and institutional support. Technological and innovative investments (Preuss, 2009; Grandia, 2016; Amann et al., 2014) offer promising pathways for systemic change. Moreover, incorporating stakeholder feedback into procurement processes (Walker & Brammer, 2012; Grandia, 2016) can enhance responsiveness, though it requires mechanisms that genuinely value and integrate diverse perspectives. The use of incentives (Grandia, 2016; Amann et al., 2014) has been proposed to drive behavioural change, yet their design must carefully balance motivation with accountability. Together, these measures highlight the complexity of promoting sustainable procurement and the need for an integrated strategy.

**Table 2:** Mitigating Measures Identified in Previous Studies

| S/N | Mitigating Measures | Authors |
|---|---|---|
| 1 | Establishing Partnerships or Collaborations with Stakeholders | Uyarra et al. (2020) |
| 2 | Developing clear and enforceable policies | Mosgaard (2015), Walker & Brammer (2012) |
| 3 | Improved communication channels between stakeholders | Michelsen & de Boer (2009) |
| 4 | Providing training and capacity-building programs for stakeholders | McMurray et al. (2014), Meehan & Bryde (2011) |
| 5 | Investing in sustainable technologies and innovations | Preuss (2009), Grandia (2016), Amann et al. (2014), |
| 6 | Incorporating stakeholder feedback into procurement processes | Walker & Brammer (2012), Grandia (2016) |
| 7 | Incentives for stakeholders to adopt sustainable practices | Grandia (2016), Amann et al. (2014) |

### 2.3 Conceptual Framework

This study is grounded in three complementary theoretical perspectives: Stakeholder Theory, Institutional Theory, and the Resource-Based View (RBV). Together, these theories provide a robust foundation for explaining the barriers to stakeholder engagement and the effectiveness of mitigating measures in sustainable procurement of public works. These perspectives collectively explain how Organisational structures, external pressures, and behavioural differences influence stakeholder participation in sustainable procurement. Institutional conditions shape both the barriers encountered and the feasibility of mitigation strategies. Within this framework, barriers to stakeholder engagement are conceptualized as mediating constraints that weaken participation effectiveness. Meanwhile mitigating measures function as strategic interventions designed to reduce or neutralize these constraints. The effectiveness of stakeholder engagement, in turn, determines the extent to which sustainable procurement objectives are achieved in public works projects.

Stakeholder Theory, originally advanced by Freeman (1984), reveals that Organisations create value by effectively managing relationships with stakeholders who can affect or are affected by Organisational objectives. In the context of public works procurement, stakeholders include government agencies, contractors, suppliers, regulatory bodies, communities, and civil society Organisations. Sustainable procurement requires balancing diverse stakeholder interests (Miemczyk, Johnsen, & Macquet, 2012; Walker & Brammer, 2012). Barriers such as conflicting interests, lack of stakeholder buy-in, and inadequate communication (Agyekum et al., 2022) reflect failures in stakeholder alignment and engagement processes. Stakeholder Theory therefore explains why meaningful engagement mechanisms are essential for achieving sustainability outcomes. Mitigating measures such as partnerships, stakeholder feedback integration, communication improvements, and incentives can be interpreted as governance mechanisms designed to align stakeholder interests and enhance cooperation. From this theoretical lens, the effectiveness of sustainable procurement depends on how well institutions manage stakeholder relationships.

Institutional Theory explains how Organisational behavior is shaped by formal and informal institutional pressures, including regulations, norms, and cultural expectations (DiMaggio & Powell, 1983; Scott, 2008). Public sector procurement is highly institutionalized, operating within legal, regulatory, and normative frameworks. Barriers such as lack of clear policies, regulatory complexity, Organisational resistance to change (Grandia, 2016; Miller, 2020) can be understood as manifestations of institutional constraints. Sustainable procurement adoption is often driven by coercive pressures (government regulations), normative pressures (professional standards), and mimetic pressures (benchmarking leading institutions). Mitigating measures such as developing enforceable policies, institutionalizing training programs, and embedding sustainability criteria into procurement guidelines represent mechanisms of institutional reform. Institutional Theory thus provides explanatory power for understanding how policy clarity, regulatory alignment, and Organisational norms influence stakeholder engagement in sustainable procurement.

The Resource-Based View (Barney, 1991) argues that Organisations achieve sustained performance advantages by developing valuable, rare, inimitable, and non-substitutable (VRIN) resources and capabilities. In the context of sustainable procurement, capabilities such as stakeholder management expertise, sustainability knowledge, collaborative competencies, and technological innovation represent strategic resources. Barriers including lack of training, limited financial resources, inadequate technical capacity, and insufficient knowledge (Preuss, 2009; McMurray et al., 2014) indicate resource and capability deficiencies. Mitigating measures such as capacity-building programs, technological investments, and incentive structures enhance Organisational capabilities necessary for effective stakeholder engagement. From an RBV perspective, sustainable procurement success depends on strengthening internal capabilities and leveraging relational resources to overcome engagement barriers.

Figure 1 illustrates the conceptual relationships among the study variables.

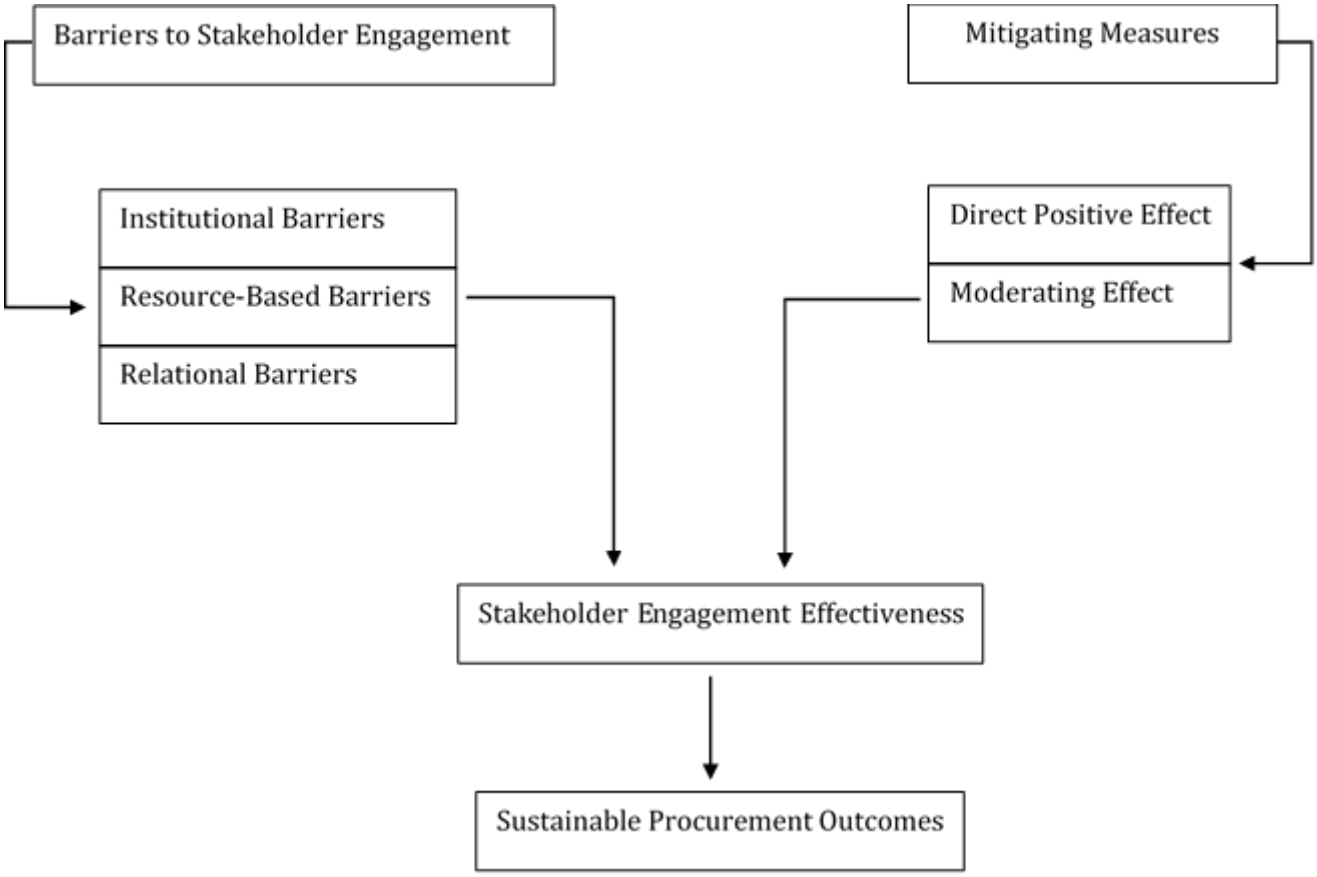



Figure 1: Conceptual framework showing relationships among barriers, mitigating measures, stakeholder engagement effectiveness, and sustainable procurement outcomes.

## 3.0 RESEARCH METHOD

This study adopted a quantitative approach to comprehensively identify, analysis, and propose solutions for overcoming these barriers. Goundar (2019) explains that quantitative research is effective in measuring awareness, establishing profiles, and determining future needs. the key variables of the study, namely; barriers and mitigating measures were identified via an extensive review of literature. Thereafter, a structured questionnaire was composed and administered to the study's respondents. The survey assessed the frequency and impact of the identified barriers and also measured the perceived effectiveness of different mitigation strategies using a Likert scale. A total of Twenty (20) items were

used in collecting data in relation to the barriers and mitigating measures. Thirteen (13) barriers identified in literature were used in the questionnaire and Seven (7) mitigating measures were used.

The target population for the study was procurement officers involved public works procurement. Procurement officers were selected as the population for this study due to their central role in public procurement processes, their responsibility for implementing policies, and their interaction with multiple stakeholders. Their experiences and expertise provide valuable insights into barriers and mitigating strategies for sustainable procurement. This choice is supported by a substantial body of research emphasizing their importance in advancing sustainability objectives in public procurement contexts. Erridge and McIlroy (2002) and Oliver (2022) assert that procurement officers are central to policy implementation and are often the first to identify ambiguities or gaps in policy guidelines that hinder sustainable procurement initiatives. furthermore, the Procurement Magazine (2023) emphasize that procurement officers play a mediating role in fostering collaboration among stakeholders, making their perspective essential for addressing stakeholder engagement barriers in sustainable procurement.

The target research sample for this research study included five hundred and six (506) procurement officers in Federal Ministries in Nigeria registered by Bureau of Public Procurement (BPP, 2024). To determine the sample size, Yamane's formula was be used to get the sample size of approximately 139. Data collected from the administered questionnaire was entered in Statistical Package for Social Science (SPSS) where descriptive statistics was used to analysis the data using mean score and relative ranking of individual factors. Also, regression analysis was used to assess mitigating measures appropriate for mitigating the barriers. Mitigation measures were used as dependent variables in the analysis because they constitute strategic responses that emerge in reaction to identified barriers. In quantitative research, dependent variables are defined as outcomes whose variation is explained by predictor variables (Creswell & Creswell, 2018). Framing mitigation actions in this way is therefore methodologically consistent with regression-based and causal inference approaches, which model observable responses as functions of explanatory constraints (Mize, 2019). Moreover, impact evaluation frameworks emphasize the identification of causal pathways between constraints, interventions, and measurable outcomes, thereby enabling predictive assessment of which strategies are most effective under particular conditions (World Bank, 2010). Therefore, conceptualising mitigation measures as dependent variables thus provides a theoretical validity for predicting which interventions best address specific constraints.

### 3.1 Reliability and Validity Tests

#### 3.1.1 Reliability Test

Internal consistency reliability of the instrument was assessed using Cronbach's Alpha coefficient. According to Hair et al. (2019), a Cronbach's alpha value of 0.70 or above indicates acceptable reliability.

The study measured two major constructs:

- Barriers to stakeholder engagement (13 items)
- Mitigating measures (7 items)

**Table 3**: Reliability Test

| Construct | No. of Items | Alpha | Interpretation |
|---|---|---|---|
| Barriers to Stakeholder Engagement | 13 | 0.87 | Good reliability |
| Mitigating Measures | 7 | 0.82 | Good reliability |

The Cronbach's alpha values for both constructs exceeded the recommended threshold of 0.70, indicating satisfactory internal consistency. This confirms that the items used to measure barriers and mitigating measures reliably capture their respective constructs.

### 3.1.2 Validity Test

Content validity was ensured through extensive literature review, adaptation of measurement items from prior studies, expert review by procurement professionals and academics. The questionnaire items were derived from established literature on sustainable procurement and stakeholder engagement. Subject matter experts reviewed the instrument to ensure clarity, relevance, and coverage of the constructs, thereby establishing content validity.

Construct validity was assessed using Exploratory Factor Analysis (EFA) in SPSS.

**Table 4**: Construct Validity Test

| Test | Value | Threshold | Interpretation |
|---|---|---|---|
| KMO | 0.81 | > 0.60 | Adequate sampling |
| Bartlett's Test | $p < 0.001$ | $p < 0.05$ | Factorable data |

Table 4 shows the KMO value exceeded 0.60, indicating sampling adequacy. Bartlett's Test of Sphericity was significant ($p < 0.05$), confirming that correlations among items were sufficient for factor analysis. All factor loadings exceeded 0.50, supporting construct validity.

### 3.2 Regression Assumptions and Diagnosis

Prior to interpreting the regression results, the assumptions underlying multiple linear regression were examined to ensure the validity and reliability of the estimated parameters. The key assumptions tested include linearity, homoscedasticity and multicollinearity.

### 3.2.1 Linearity

The assumption of linearity requires that a linear relationship exists between the independent variables (barriers to stakeholder engagement) and the dependent variable (mitigating measures). This assumption was examined using scatterplots of standardized predicted values against standardized residuals, as well as partial regression plots generated in SPSS. Visual inspection of the scatterplots in fig. 2 indicated a reasonably linear relationship between predictors and the dependent variable. No evident curvilinear patterns were observed. Therefore, the assumption of linearity was considered satisfied.

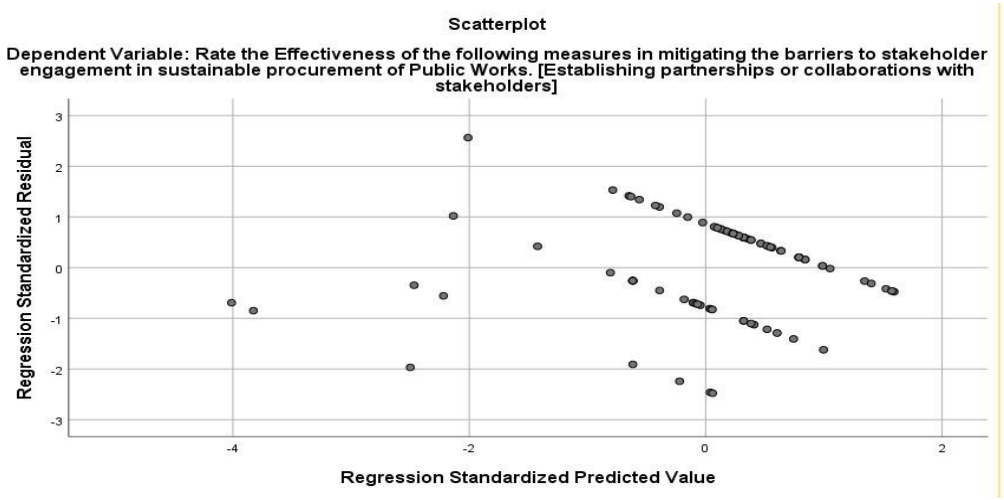



Fig 2: Scatterplot showing reasonable linearity between variables.
Source: Analysis on SPSS

### 3.2.2 Homoscedasticity

Homoscedasticity assumes that the variance of residuals is constant across all levels of the independent variables. This was evaluated by plotting standardized residuals against standardized predicted values. The residual plot displayed a random scatter of points without a funnel-shaped or systematic pattern. The dispersion of residuals appeared relatively constant across predicted values. Consequently, the assumption of homoscedasticity was satisfied.

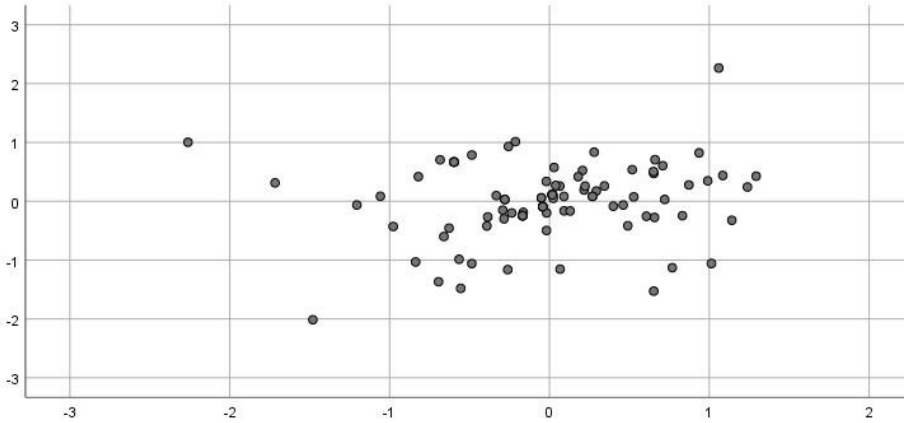


Fig 3: Residual plot showing homoscedasticity

### 3.2.3 Multicollinearity

Multicollinearity occurs when independent variables are highly correlated, potentially inflating standard errors and destabilizing coefficient estimates. Multicollinearity was assessed using Variance Inflation Factor (VIF) and Tolerance values.

The results indicated that:

- All VIF values were below 5
- All Tolerance values exceeded 0.20

These values fall within acceptable thresholds, indicating that multicollinearity was not a concern in the regression model.

## 4.0 RESULTS AND DISCUSSIONS

### 4.1 Descriptive statistics

Data collected from the administered questionnaire was entered in Microsoft Excel package and Statistical Package for Social Science (SPSS) where descriptive statistics was used to analysis the data using mean score and relative ranking of individual factors and further Analysis of Variance (ANOVA) was used to test level of significant difference in responses given by respondents. Regression analysis was conducted to examine the relationship between the effectiveness of mitigating factors and the level of barriers to stakeholder engagement in sustainable procurement. **Table 5:** Years of Experience of Respondents

| Years of Experience | Frequency | Percentage (%) |
|---|---|---|
| Less than 5 years | 13 | 9.4 |
| 11-15 years | 44 | 31.9 |
| 16-20 years | 53 | 37.7 |
| 5-10 years | 21 | 15.2 |
| Above 20 years | 8 | 5.8 |
| Total | 139 | 100 |

The largest proportion of respondents (37.7%) had 16-20 years of experience. This indicates that the majority of participants were highly experienced professionals, with significant exposure to the challenges and practices of public procurement. Their responses are expected to provide deep insights into systemic issues, including Organisational resistance and long-term trends in sustainable procurement. The second-largest group (31.9%) had 11-15 years of experience, representing midlevel professionals. This group likely has sufficient exposure to procurement processes and policies to offer valuable perspectives on the barriers and mitigating factors in sustainable procurement. Respondents with less than 5 years of experience accounted for 9.4%, while those with 5-10 years constituted 15.2%. Together, these groups comprised about one-quarter of the sample. Their perspectives may reflect the challenges faced by newer entrants to the procurement field, such as lack of training, understanding of sustainability principles, or navigating complex policies. A small portion of the sample (5.8%) had over 20 years of experience, representing seasoned experts. This group is likely to offer insights into long-term institutional and structural barriers to sustainable procurement, as well as practical strategies for overcoming them. The data indicates a workforce dominated by mid-level and highly experienced procurement professionals (69.6%), suggesting a strong base of expertise in the field. However, the notable presence of less experienced respondents (24.6%) highlights the importance of capacity-building initiatives to equip newer professionals with the skills and knowledge necessary for sustainable procurement. This distribution supports the study's emphasis on tailored strategies to address both individual and Organisational barriers.

**Table 6:** Perceived Mitigating Measures to Barriers to Stakeholder Engagement in Sustainable Procurement of Public Works

| Variables | Mean | SD |
|---|---|---|
| Establishing partnerships or collaborations with stakeholders | 4.47 | 0.76 |
| Incorporating stakeholder feedback into procurement processes | 4.44 | 0.866 |

| | | |
|---|---|---|
| Incentives for stakeholders to adopt sustainable practices | 4.44 | 0.814 |
| Improved communication channels between stakeholders | 4.33 | 0.812 |
| Investing in sustainable technologies and innovations. | 4.28 | 0.877 |
| Developing clear and enforceable policies | 3.95 | 0.713 |
| Providing training and capacity-building programs for stakeholders. | 3.52 | 1.059 |

Source: Field work

Table 3 shows Establishing partnerships or collaborations with stakeholders (Mean = 4.47, SD = 0.76) received the highest mean score, indicating strong agreement on the importance of fostering partnerships. Collaborative efforts between stakeholders are seen as critical for aligning goals and overcoming conflicts, with low variability suggesting widespread consensus. Incorporating stakeholder feedback into procurement processes (Mean = 4.44, SD = 0.866); actively seeking and incorporating input from stakeholders is perceived as equally significant. This approach emphasizes the importance of inclusivity in procurement practices. Incentives for stakeholders to adopt sustainable practices (Mean = 4.44, SD = 0.814) is seen as a vital motivator for encouraging stakeholders to engage with and commit to sustainable procurement initiatives. The relatively low standard deviation reflects consistent views on its importance. Improved communication channels between stakeholders (Mean = 4.33, SD = 0.812) is essential for building trust, resolving conflicts, and ensuring alignment in sustainable procurement efforts. Investing in sustainable technologies and innovations (Mean = 4.28, SD = 0.877) are viewed as a key driver of sustainability, enabling stakeholders to adopt efficient and environmentally friendly practices. Developing clear and enforceable policies (Mean = 3.95, SD = 0.713); Although rated slightly lower than other strategies, this factor remains important for providing a structured framework for sustainable procurement. The low variability indicates strong agreement on the need for clear and enforceable policies. Providing training and capacity-building programs for stakeholders (Mean = 3.52, SD = 1.059) were rated the lowest, suggesting they are perceived as a supporting rather than primary strategy. The higher standard deviation indicates varied views, potentially reflecting differences in stakeholders' training needs.

### 4.2 Regression Analysis

Regression analysis evaluates the influence of barriers on the mitigating measures (dependent variable). Importantly, the dependent variable not only measures the outcome but also serves as a mitigating factor, addressing the predictors that can help overcome barriers. Each mitigating measure was plotted against all barriers in order to pick out the barriers that will predictively be resolved by each mitigating measure. The table below shows the result of regression analysis carried out.

**Table 7:** Regression Results of Mitigating Measures on Barriers to Stakeholder Engagement in Sustainable Procurement of Public Works

| S/N | Mitigating Measures | Barriers | Models | R | $R^2$ |
|---|---|---|---|---|---|
| 1 | Developing clear and enforceable policies | Organisational structure and culture | 1 | .540[a] | .292 |
| | | Organisational resistance to change | 2 | .583[b] | .339 |
| 2 | Establishing partnerships or collaborations with procurement practices | Lack of incentives for sustainable stakeholders | 1 | .547[a] | .299 |
| | | Conflicting interests among stakeholders | 2 | .599[b] | .359 |

| | | | | | |
|---|---|---|---|---|---|
| 3 | Providing training and capacity-building programs for stakeholders | Lack of training or knowledge | 1 | .643a | .414 |
| | | Insufficient budget or financial resources | 2 | .713b | .508 |
| | | Lack of understanding of sustainability requirements | 3 | .740c | .547 |
| 4 | Investing in sustainable technologies and innovations | Lack of incentives for sustainable procurement practices | 1 | .507[a] | .257 |
| | | Lack of understanding of sustainability requirements | 2 | .592[b] | .350 |
| | | Conflicting interests among stakeholders | 3 | .620[c] | .385 |
| | | Lack of training or knowledge | 4 | .642[d] | .412 |
| 5 | Incorporating stakeholder feedback into procurement processes | Organisational structure and culture | 1 | .384[a] | .147 |
| | | Limited collaboration between private and public sectors | 2 | .431[b] | .186 |
| 6 | Incentives for stakeholders to adopt sustainable practices | Lack of incentives for sustainable procurement practices | 1 | .561[a] | .315 |
| | | Conflicting interests among stakeholders | 2 | .636[b] | .405 |
| | | Inadequate communication among stakeholders | 3 | .661[c] | .437 |
| | | Complexity of regulations or procurement processes | 4 | .688[d] | .473 |
| 7 | Improved communication channels between stakeholders | Lack of incentives for sustainable procurement practices | 1 | .610[a] | .372 |
| | | Lack of understanding of sustainability requirements | 2 | .676[b] | .457 |
| | | Organisational resistance to change | 3 | .701[c] | .491 |

Table 5 shows barriers that will be mitigated by each mitigating factor.

**Developing Clear and Enforceable Policies**

**Model 1** (Single Predictor: Organisational Structure and Culture): R=0.540: Indicates a moderate positive correlation between Organisational structure and the development of clear policies. Improving policies can, in turn, mitigate structural issues by institutionalizing standardized processes and decision-making frameworks. R2=0.292: About 29.2% of the variance in policy development is

explained by Organisational structure and culture, underscoring the need for strong, well-defined Organisational frameworks.

**Model 2** (Two Predictors: Organisational Structure and Culture + Organisational Resistance to Change): R=0.583: A stronger correlation indicates the combined effect of addressing both predictors. Developing policies that address resistance to change and promote structural improvements can enhance collaboration and productivity. R2=0.339: The model explains 33.9% of the variance, with an additional 4.8% explanatory power contributed by resistance to change. This reflects the compounded importance of addressing both barriers.

**Establishing partnerships or collaborations with stakeholders**

**Model 1** (Single Predictor: Lack of Incentives): R=0.547: Indicates a moderate positive correlation between the lack of incentives and the dependent variable. This highlights that the absence of incentives is a substantial barrier that stakeholder partnerships could mitigate. R2=0.299: About 29.9% of the variance in stakeholder collaboration is explained by the lack of incentives for sustainable procurement practices. A robust stakeholder partnership could reduce this variance by addressing resource allocation and policy alignment gaps.

**Model 2** (Two Predictors: Lack of Incentives + Conflicting Interests): R=0.599: The stronger correlation compared to Model 1 suggests that partnerships can address the interplay between these two barriers. R2=0.359: With both barriers included, 35.9% of the variance is explained. The inclusion of conflicting interests reinforces the need for partnerships as a tool for addressing the compounded effects of these barriers.

**Providing training and capacity-building programs for stakeholders**

**Model 1** (Single Predictor: Lack of Training or Knowledge): R=0.643R=0.643: Strong positive correlation between a lack of training or knowledge and the need for providing training and capacitybuilding programs. R2=0.414R2=0.414: This model explains 41.4% of the variance in the dependent variable, indicating a significant role of training gaps in driving the need for capacity-building programs.

**Model 2** (Two Predictors: Lack of Training or Knowledge + Insufficient Budget or Financial Resources): R=0.713: Improved correlation with the addition of a second predictor, reflecting the combined influence of both factors. R2=0.508: The model explains 50.8% of the variance, with an additional 9.4% improvement contributed by the second predictor.

**Model 3** (Three Predictors: Lack of Training or Knowledge + Insufficient Budget or Financial Resources + Lack of Understanding of Sustainability Requirements): R=0.740R=0.740: A further improvement in the correlation indicates the combined impact of all three predictors. R2=0.547: Explains 54.7% of the variance, with an additional 4% contribution from the third predictor.

**Investing in sustainable technologies and innovations**

**Model 1** (Single Predictor: Lack of Incentives for Sustainable Procurement Practices): R=0.527: Moderate positive correlation between the lack of incentives and the need to invest in sustainable technologies and innovations. R2=0.277: This model explains 27.7% of the variance in the dependent variable, indicating that incentives play a crucial role.

**Model 2** (Two Predictors: Lack of Incentives for Sustainable Procurement Practices + Lack of Understanding of Sustainability Requirements): R=0.577: Correlation improves with the addition of

the second predictor, highlighting the combined impact. R2=0.333: Explains 33.3% of the variance, with an additional 5.6% improvement from the second predictor.
**Model 3** (Three Predictors: Lack of Incentives for Sustainable Procurement Practices + Lack of Understanding of Sustainability Requirements + Lack of Training or Knowledge): R=0.634: Higher correlation when training gaps are introduced as a third variable. R2=0.402: Explains 40.2% of the variance, with an additional 6.9% contribution from the third predictor.
**Model 4** (Four Predictors: Lack of Incentives for Sustainable Procurement Practices + Lack of Understanding of Sustainability Requirements + Lack of Training or Knowledge + Conflicting Interests Among Stakeholders): R=0.659: Strongest correlation among all models, demonstrating the cumulative impact of all four predictors. R2=0.435: Explains 43.5% of the variance, with an additional 3.3% improvement from the fourth predictor.

**Incorporating stakeholder feedback into procurement processes**
**Model 1** R = 0.384: Indicates a weak positive correlation between Organisational structure and culture and the dependent variable. $R^2$ = 0.147: Only 14.7% of the variance in incorporating stakeholder feedback is explained by Organisational structure and culture.
**Model 2** (Adding Limited Collaboration between Private and Public Sectors): R = 0.431: The correlation improves slightly with the inclusion of the second predictor. $R^2$ = 0.186: The combined predictors explain 18.6% of the variance in the dependent variable.

**Incentives for stakeholders to adopt sustainable practices**
**Model 1** Single Predictor – Lack of Incentives for Sustainable Procurement Practices: R=0.561, R2=0.315: The model explains 31.5% of the variance in providing incentives for stakeholders to adopt sustainable practices.
**Model 2** Two Predictors – Lack of Incentives + Conflicting Interests Among Stakeholders R=0.617, R2=0.381: Adding conflicting interests increases the explanatory power by 6.6%, which is significant.
**Model 3** Four Predictors – Lack of Incentives, Conflicting Interests, Inadequate Communication, Complexity of Regulations: R=0.657, R2=0.431: The inclusion of two additional predictors (communication and regulations) further improves the model, adding 5% more explanatory power.

**Improved communication channels between stakeholders**
**Model 1** Single Predictor – Lack of Incentives for Sustainable Procurement Practices: R=0.616, R2=0.379; The model explains 37.9% of the variance in improving communication channels between stakeholders.
**Model 2** Two Predictors – Lack of Incentives + Lack of Understanding of Sustainability Requirements: R=0.678, R2=0.457; The addition of sustainability understanding explains an additional 7.8% of variance, indicating its significant role.
**Model 3** Three Predictors – Lack of Incentives, Lack of Understanding, Organisational Resistance: R=0.701, R2=0.491: The inclusion of Organisational resistance increases explanatory power by 3.4%, though marginal compared to previous models.

## 4.3 DISCUSSION OF RESULTS

The study investigated barriers to stakeholder engagement in sustainable procurement of public works and identified mitigating factors to address these barriers. The study identified several key barriers to stakeholder engagement in sustainable procurement, with "conflicting interests among stakeholders" (Mean = 4.33) and "lack of incentives for sustainable procurement practices" (Mean = 4.26) emerging as the most critical. These findings align with the work of Brammer and Walker (2011), who emphasized the role of conflicting stakeholder priorities as a significant challenge in achieving

sustainable procurement goals. Similarly, Schrettle et al. (2014) highlighted that the absence of clear benefits and incentives often leads to low stakeholder buy-in. The relatively high rating of "inadequate communication among stakeholders" (Mean = 4.03) reflects the critical importance of effective communication channels, as supported by earlier studies (e.g., Freeman, 1984), which underscore the role of stakeholder dialogue in managing diverse interests. On the other hand, barriers such as "complexity of regulations or procurement processes" (Mean = 3.14) and "lack of awareness of sustainable procurement" (Mean = 2.66) were rated lower. This indicates that while these issues exist, they may not be as pressing compared to more relational and structural challenges. The study revealed that strategies emphasizing collaboration and communication were perceived as the most effective for mitigating barriers. For instance, "establishing partnerships or collaborations with stakeholders" received the highest rating (Mean = 4.47), consistent with the findings of Preuss (2007), who argued that cross-sector partnerships are essential for advancing sustainable procurement. Similarly, "incorporating stakeholder feedback into procurement processes" (Mean = 4.44) and "providing incentives for stakeholders to adopt sustainable practices" (Mean = 4.44) were also highly rated. This underscores the need for participatory approaches, as advocated by Elkington (1997), who proposed that sustainable development requires balancing stakeholder interests through engagement and incentives. However, "providing training and capacity-building programs for stakeholders" (Mean = 3.52) was rated lower, with significant variability among respondents. This finding aligns with Brammer and Walker (2011), who suggested that training initiatives are often underutilized or undervalued despite their potential to address knowledge gaps.

The dominance of incentives, stakeholder feedback and stakeholder partnerships as the most effective mitigating measures reflects the relational and motivational nature of the barriers identified in this study. The two highest-rated barriers, conflicting stakeholder interests and lack of incentives are not primarily technical problems; rather, they are issues of alignment, coordination, and motivation. The findings therefore suggest that stakeholder engagement in sustainable procurement is less constrained by lack of awareness or regulatory complexity, and more by motivational and coordination deficits. Partnerships and incentives directly address these deficits.
The regression analysis revealed that Establishing partnerships or collaborations with stakeholders is the most effective mitigating measure and it equally has an effect on the top two barriers; lack of incentives and conflicting interest among stakeholders. This indicates Strategic efforts to build partnerships will play a critical role in overcoming the lack of incentives and resolving conflicting interests, ultimately supporting sustainable procurement goals.

Barriers such as insufficient training, lack of resources, and poor stakeholder coordination significantly hinder stakeholder engagement. Targeted strategies such as establishing partnerships, providing training, and designing policies can effectively mitigate these barriers. Organisational factors like structure, culture, and incentives are particularly influential and should be prioritized. Organisational Structure and Culture (Policy**)** had a significant positive relationship with the dependent variable, contributing the most to explaining the variance. This finding aligns with studies (e.g., Walker & Brammer, 2012) suggesting that rigid Organisational policies often hinder adoption of procurement practices. Resistance to change was also a significant predictor, although with a smaller impact. Training programs and stakeholder engagement, can address resistance, enabling Organisations to adapt to sustainability-focused policies (Oluwabukunmi et al., 2019). Together, the predictors explained 33.9% of the variance in the dependent variable, highlighting their importance.
Similar, Organisational Structure and Culture significantly influenced stakeholder feedback incorporation. Organisations with adaptive structures are more likely to integrate diverse stakeholder perspectives effectively, which is critical for sustainable procurement (Carter & Rogers, 2008).

Incorporating stakeholder feedback can help mitigate the adverse effects of rigid structures and poor collaboration. By encouraging regular feedback, Organisations can create procurement systems that are transparent and inclusive.

The regression analyses reveal that addressing Organisational and structural barriers is essential for sustainable procurement practices. Key strategies include revising Organisational policies, enhancing stakeholder engagement, providing incentives and overcoming resistance to change will ultimately mitigate barriers and encourage stakeholder engagement in sustainable procurement.

## 5.0 CONCLUSION

The discussion underscores the interconnected nature of barriers and mitigating factors in sustainable procurement, emphasizing the critical role of mitigating measures in overcoming challenges. The barriers identified, including inadequate communication, lack of robust policy frameworks, conflicting stakeholder interests, and insufficient incentives, pose significant obstacles to the adoption of sustainable procurement practices. However, the study highlights that these challenges can be effectively addressed through targeted interventions, particularly focusing on collaboration, communication, and incentivization.

Mitigating factors such as establishing collaborations with stakeholders, incorporating feedback, improving communication channels, and providing adequate incentives are pivotal in transforming barriers into opportunities for engagement and progress. These measures align stakeholder objectives, promote inclusivity, and create a conducive environment for implementing sustainability initiatives. For instance, fostering collaboration and ensuring active stakeholder participation not only build trust but also strengthen the collective commitment to sustainable goals. Similarly, the provision of incentives aligns interests and motivates stakeholders to prioritise sustainability in procurement processes.

The findings offer a comprehensive roadmap for policymakers and practitioners aiming to enhance stakeholder engagement in sustainable procurement. By addressing structural and cultural resistance to change and emphasizing the importance of clear, enforceable policies, the study provides actionable insights for creating a robust foundation for sustainable practices.

This study adds to sustainable procurement research by going beyond barriers. Instead of only identifying challenges, it examines how specific solutions respond to particular barriers. By referring to Stakeholder Theory, Institutional Theory, and the Resource-Based View, and testing them using regression analysis, the study provides both theoretical and practical insights. The findings show that the main challenges to stakeholder engagement in Nigeria's public procurement system are not just technical issues, but problems related to institutional structures, relationships, and motivation. The study also shows that strategies such as incentives and partnerships are not random recommendations; they function as practical responses to these deeper institutional and relational problems. In this way, the research extends previous studies by explaining not only what the barriers are, but also how and why certain governance strategies are effective in addressing them.

## 6.0 RECOMMENDATIONS

Based on the findings and discussion, several recommendations are proposed to overcome the identified barriers and enhance stakeholder engagement in sustainable procurement. These recommendations are aimed at policymakers, practitioners, and Organisations to create a more conducive environment for sustainable practices.

i. Policymakers should create comprehensive and enforceable guidelines to ensure consistency in sustainable procurement practices.
ii. Invest in improved communication platforms and strategies to ensure seamless information flow among stakeholders. This helps in addressing misunderstandings and fostering transparency in decision-making processes.
iii. Organize regular training sessions to equip stakeholders with the necessary knowledge and skills for implementing sustainability requirements. Capacity-building programs can address gaps in understanding and promote best practices.
iv. Allocate resources to research and development of sustainable technologies. Encouraging innovation can lead to more efficient, cost-effective, and eco-friendly procurement solutions.
v. Undertake Organisational change management programs to tackle cultural and structural resistance. Leadership commitment and employee engagement should be prioritized to create a culture that embraces sustainability.
vi. Ensure sufficient budgeting for sustainable procurement projects. Financial resources are essential to implement policies, train stakeholders, and invest in sustainable technologies.

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