

Procurement Process Quality And Project Performance Of Taraba Road Construction And Maintenance Agency

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Abstract

This study examined the effect of procurement process quality on the project performance of Taraba Road Construction and Maintenance Agency in Taraba State, Nigeria. Specifically, the study investigated the influence of open bidding, public bid opening, and e-procurement systems on project performance measured by schedule adherence, cost performance, and quality compliance. The study was anchored on Agency Theory (Jensen & Meckling, 1976). A quantitative survey research design was adopted. The target population comprised 1,900 TARCMA staff, from which a sample of 320 respondents was selected using stratified random sampling. A structured questionnaire was used for data collection, with reliability established using Cronbach's Alpha ($\alpha = 0.85$). Data were analysed using multiple regression analysis. The findings revealed that open bidding has a statistically significant effect on project performance ($\beta = 0.241$, $p < .001$). Public bid opening showed the strongest positive relationship with project performance ($\beta = 0.372$, $p < .001$). E-procurement systems also demonstrated a statistically significant effect ($\beta = 0.305$, $p < .001$). The regression model was significant ($F = 164.782$, $p < .001$), with an R Square value of 0.615. Consequently, all three null hypotheses were rejected. The study concludes that procurement process quality significantly influences TARCMA's project performance. It is recommended that TARCMA should strengthen open bidding practices, institutionalize public bid opening sessions, and accelerate e-procurement adoption. The study contributes empirical evidence on procurement-performance relationships in Taraba State, validating Agency Theory in the Nigerian subnational public procurement context.

Keywords: Procurement Process Quality, Open Bidding, Public Bid Opening, E-procurement Systems, Project Performance

1. INTRODUCTION

1.1 Background of the Study

The Nigerian public procurement system is increasingly undergoing transformation as a result of the growing importance of transparency, efficiency, and accountability in government contracting. The success of public construction projects, particularly those executed by state-owned agencies, is no longer determined solely by technical capacity but also by the effectiveness and integrity of procurement processes. Globally, efficient procurement frameworks have been associated with reduced project delays, lower costs, and enhanced value for money (World Bank, 2022; OECD, 2021).

Procurement process quality refers to the ability of public institutions to promote transparency, competition, and efficiency in contracting. This includes key dimensions such as open bidding, which ensures fair competition; public bid opening, which guarantees transparency; and e-procurement systems, which digitize activities to reduce cycle times. In many developing economies, including Nigeria, weak procurement processes lead to contract delays, cost overruns, and poor quality outcomes (Eze et al., 2025; Adedotun et al., 2023; Unegbu et al., 2024).

Improving procurement process quality can transform state-owned construction agency performance. Open bidding increases competition and reduces inflated prices (Afolabi et al., 2022). Public bid opening enhances accountability through stakeholder observation (Zakari, 2025). E-procurement systems reduce cycle time by 22% and bid-rigging by 18% (Digital Governance Framework Study, 2025). These factors collectively contribute to improved project schedule adherence and quality compliance.

The Taraba Road Construction and Maintenance Agency (TARCMA) is a relevant context for this study. Despite the Public Procurement Act (PPA) 2007 and Bureau of Public Procurement (BPP) reforms, TARCMA faces persistent project delays, equipment breakdowns, and funding constraints (Taraba State Government, 2016; Arewa Reporters, 2024). However, no empirical study has examined how procurement process dimensions open bidding, public bid opening, and e-procurement systems—influence project performance at TARCMA. Consequently, this study provides empirical insights to inform policy decisions.

1.2 Statement of the Problem

The ideal public procurement system under Nigeria's Public Procurement Act (PPA) 2007 mandates open bidding, public bid opening, and e-procurement to ensure transparency, competition, and timely project delivery within a 91-day cycle. However, the observed reality falls short: Machina et al. (2026) found procurement compliance satisfaction at only 2.31 on a 4-point scale in Yobe State, while the Digital Governance Framework Study (2025) reported that only 13% of procuring entities publish final contract audits. For TARCMA specifically, a 2016 gubernatorial inspection found a road project "four months behind schedule" (Taraba State Government, 2016). Despite government efforts including the Nigeria Open Contracting Portal (NOCOPO) and the National Procurement Certification Portal (NPCP), which have documented savings of ₦173 billion (BPP, 2025), procurement failures persist. Ndukwe and Nebo (2025) confirmed continued "improper use of procurement method," and as recently as 2024, TARCMA anticipated further delays on its 41 roads project (Arewa Reporters, 2024).

The critical gap is the absence of quantitative empirical evidence linking specific procurement process dimensions—open bidding, public bid opening, and e-procurement systems—to project performance outcomes within TARCMA. This study expects to solve this problem by adopting a quantitative survey research design, administering structured questionnaires to a sample of 320 procurement staff, engineers, and project managers at TARCMA. Using descriptive statistics, correlation analysis, and multiple regression, the study will statistically determine the relationship between procurement process dimensions

(IV) and project performance (DV). The findings will provide statistically valid, evidence-based recommendations for Taraba State policymakers and TARCMA management on which procurement reforms most significantly improve project delivery.

1.3 Objectives of the Study

The broad objective of this study is to examine the effect of procurement process quality on the project performance of Taraba Road Construction and Maintenance Agency (TARCMA) in Taraba State. Specifically, the study intends to:

- i. examines the effect of open bidding on the project performance of TARCMA in Taraba State.
- ii. assess the effect of public bid opening on the project performance of TARCMA in Taraba State.
- iii. investigate the influence of e-procurement systems on the project performance of TARCMA in Taraba State.

1.4 Research Questions

Based on the specific objectives, the study seeks to answer the following questions:

- i. What is the effect of open bidding on the project performance of TARCMA in Taraba State?
- ii. What is the effect of public bid opening on the project performance of TARCMA in Taraba State?
- iii. To what extent do e-procurement systems influence the project performance of TARCMA in Taraba State?

1.6 Research Hypotheses

The hypotheses are formulated in the null (H_0) form for statistical testing. Each hypothesis corresponds to an objective and research question:

- **Hypothesis One (H_{01})**

There is no significant effect of open bidding on the project performance of TARCMA in Taraba State.

- **Hypothesis Two (H_{02})**

Public bid opening does not significantly influence the project performance of TARCMA in Taraba State.

- **Hypothesis Three (H_{03})**

E-procurement systems have no significant effect on the project performance of TARCMA in Taraba State.

1.7 Significance of the Study

A variety of stakeholders are expected to benefit from this study, including policymakers, procurement regulators, TARCMA management and staff, and the academic community within Taraba State and beyond.

- **To the Researcher:** This study will enhance the researcher's understanding of how procurement process dimensions—specifically open bidding, public bid opening, and e-procurement systems—affect project performance in state-owned construction agencies. It will also contribute to the researcher's academic development and serve as a foundation for further research in public procurement and construction project management.
- **To TARCMA Management and Staff:** The study provides practical insights into how procurement practices influence project outcomes, including schedule adherence, cost control, and

quality delivery. It will help TARCMA management identify specific procurement deficiencies that require reform and guide strategic decisions to improve agency performance.

- **To Government and Regulatory Authorities:** The findings of this study will provide useful information to policymakers, the Bureau of Public Procurement (BPP), and the Taraba State Government on the effectiveness of existing procurement frameworks. Insights from the study can guide reforms aimed at improving open bidding practices, strengthening public bid opening procedures, and accelerating e-procurement adoption, thereby fostering more efficient and transparent public construction delivery.
- **To Future Researchers:** This study contributes to the existing body of literature on procurement process quality and project performance, particularly within a subnational and state-owned agency context in Nigeria. It provides empirical evidence that can serve as a reference for future studies on public procurement reform, construction project management, and institutional quality in developing economies.

2. LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 Conceptual Review

2.1.1 Procurement Process Quality

Procurement process quality refers to the ability of public institutions to design, implement, and execute procurement activities that promote transparency, competition, and efficiency in government contracting. According to the World Bank (2022), procurement process quality reflects how well public institutions manage contracting processes through sound policies and effective implementation. The OECD (2021) defines public procurement as the process by which governments purchase goods, works, and services from the private sector, emphasizing that quality procurement systems are characterized by transparency, integrity, and value for money. In the context of Taraba State, procurement process quality is not a uniform construct but varies across different dimensions such as open bidding, public bid opening, and e-procurement systems.

Eze, Ogunsina, and Igwe (2025) define procurement process quality as the degree to which public infrastructure project procurement adheres to transparency provisions, including open competition, public bid observation, and technological integration. Similarly, Unegbu, Yawas, and Dan-asabe (2024) conceptualize procurement management as encompassing the planning, execution, and monitoring of all activities related to acquiring goods and services for construction projects, with quality determined by compliance with established regulations and timelines. Thus, procurement process quality serves as a foundational determinant of how public construction agencies deliver infrastructure projects.

The three dimensions of procurement process quality examined in this study open bidding, public bid opening, and e-procurement systems were adapted from the transparency provisions and procurement methods outlined in Nigeria's Public Procurement Act (PPA) 2007, as operationalized in the procurement compliance frameworks of Eze, Ogunsina, and Igwe (2025), Afolabi et al. (2022), and the Bureau of Public Procurement (2025).

2.1.2 Open Bidding

Open bidding refers to a competitive procurement method where all interested and qualified suppliers are invited to submit bids for public contracts. The Public Procurement Act (PPA) 2007, Sections 31 to 33, defines open bidding as the default procurement method requiring public advertisement and equal opportunity for all qualified bidders (Eze et al., 2025). The Bureau of Public Procurement (BPP, 2025)

further specifies that open competitive bidding is mandatory for goods valued at N1 billion and above, and works valued at N5 billion and above.

Afolabi, Ibem, Aduwo, and Tunji-Olayeni (2022) define open bidding as a transparent tendering process that allows all interested contractors to submit proposals, thereby promoting competition and reducing the potential for favoritism. Abdullahi, Ibrahim, Ibrahim, and Bala (2022) describe open bidding as a procurement method that ensures all qualified bidders receive equal access to contract information and submission opportunities. Ndukwe and Nebo (2025) characterize open bidding as a mechanism for ensuring competitiveness and value for money, in contrast to restrictive methods that limit contractor participation. Therefore, open bidding is a critical dimension of procurement process quality that determines the level of competition and fairness in public contracting.

2.1.3 Public Bid Opening

Public bid opening refers to the practice of opening bids in a transparent session where all participating bidders, civil society representatives, and other stakeholders can observe the process. Eze et al. (2025) define public bid opening as a transparency provision mandated by the PPA 2007, requiring that bids be opened publicly at the designated time and place, with bid return sheets signed by all attending bidders. This procedure is designed to ensure accountability and reduce opportunities for manipulation or collusion.

Zakari (2025) conceptualizes public bid opening as a component of electronic public procurement systems (EPPS) transparency, where bid opening sessions are conducted in the presence of observers to verify compliance with procurement rules. The Digital Governance Framework Study (2025) defines public bid opening as a governance mechanism that creates audit trails and stakeholder oversight, thereby reducing information asymmetry between procuring entities and bidders. Banchani and Banchani (2024), in their comparison of Nigerian and Ghanaian procurement systems, describe public bid opening as a cornerstone of competitive procurement that distinguishes transparent systems from opaque ones. Thus, public bid opening serves as a critical accountability mechanism within the procurement process.

2.1.4 E-Procurement Systems

E-procurement systems refer to digital platforms and technologies used to conduct procurement processes electronically, including e-tendering, e-bidding, e-invoicing, and open contracting portals. Afolabi et al. (2022) define e-procurement as the use of electronic tools and technologies to facilitate tendering, submission, bid opening, evaluation, and contract award in public procurement. They identify specific tools including internet-based platforms, web-based enterprise resource planning (ERP) systems, e-sourcing tools, and e-tendering systems designed to digitize manual procurement processes.

Abdullahi et al. (2022) conceptualize e-procurement as a web-based system that supports the entire tendering lifecycle, including tender notification, submission, opening, evaluation, approval, and awarding. The Digital Governance Framework Study (2025) defines e-procurement systems as digital governance mechanisms that create real-time tracking, audit trails, and automated compliance checks. Ojeifo (2025) describes Nigeria's e-procurement infrastructure as including the Nigeria Open Contracting Portal (NOCOPO) for monthly contract disclosure and the National Procurement Certification Portal (NPCP) for professionalizing procurement officers. E-procurement systems, therefore, represent the technological dimension of procurement process quality.

2.1.5 Project Performance of Public Construction Agencies

Project performance refers to the ability of a construction agency to deliver projects on time, within budget, and to specified quality standards. Unegbu et al. (2024) define project performance in the Nigerian construction industry as a multidimensional construct encompassing time performance (schedule

adherence), cost performance (budget compliance), and quality performance (specification conformance). Adedotun, Saidu, Bola-Efe, and Muhammad (2023) define project delivery performance as the extent to which construction projects meet predetermined targets for time, cost, and quality outcomes, with procurement compliance as a key determinant.

Eze et al. (2025) conceptualize project performance of public infrastructure projects as the degree to which completed works satisfy transparency, quality, and timeliness standards expected under the PPA 2007 framework. Windapo and Rotimi (2012) define project performance criteria from Nigerian clients' perspectives as including timely completion, budget adherence, quality of workmanship, and contractor responsiveness. In the context of state-owned construction agencies such as TARCMA, project performance reflects how well the agency utilizes procurement processes to achieve infrastructure delivery objectives.

Within project performance, three dimensions are commonly distinguished. **Schedule adherence** refers to the ability to complete a project within the contractual or planned timeframe, with procurement cycle times serving as a critical antecedent (Unegbu et al., 2024). **Cost performance** refers to the ability to complete a project within the approved budget, with procurement competition and transparency influencing final contract values (Adedotun et al., 2023). **Quality compliance** refers to the extent to which completed projects meet technical specifications and safety standards, with procurement evaluation criteria determining contractor selection and subsequent quality outcomes (Eze et al., 2025). Overall, project performance of public construction agencies is significantly influenced by the quality of procurement processes, as defined by open bidding, public bid opening, and e-procurement systems.

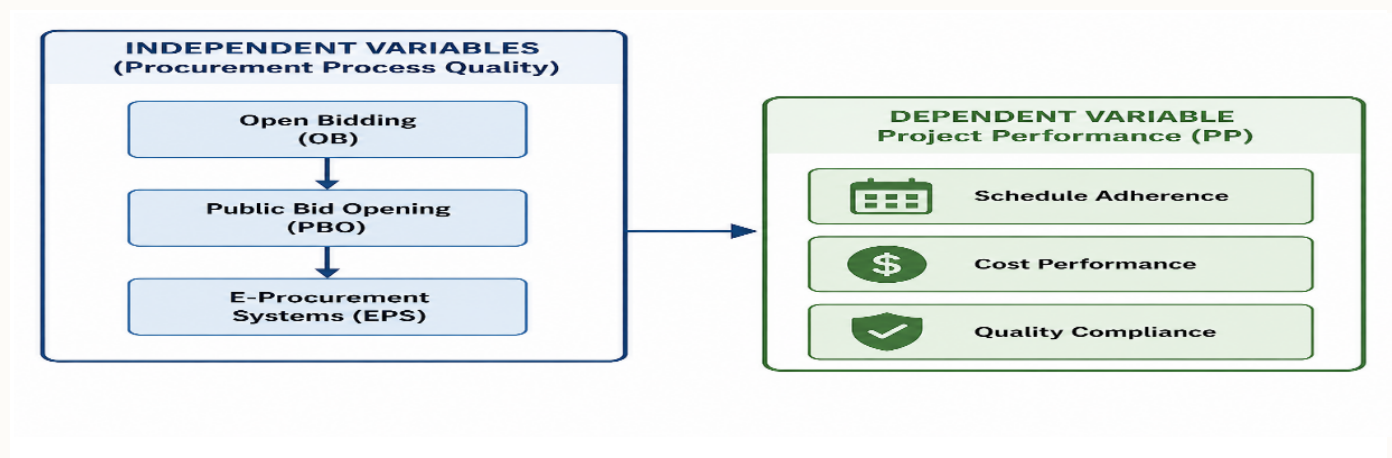


Figure 1: Conceptual Model of the Study

Source: Authors conceptualization, 2026

2.2 Theoretical Framework: Agency Theory

This study is anchored on the Agency Theory as propounded by Jensen and Meckling (1976). The theory posits that relationships between principals (owners or superiors) and agents (managers or subordinates) are characterized by information asymmetry and divergent interests. In the context of public procurement, the government (principal) delegates procurement and project execution responsibilities to agencies such as TARCMA (agent). Agency Theory predicts that agents may pursue their own interests—such as bureaucratic convenience, personal gain, or political favoritism—rather than the principal's objective of value for money, timely delivery, and quality outcomes (Shleifer & Vishny, 1994).

Agency Theory is highly relevant to the context of TARCMA and public procurement in Taraba State, as it provides a framework for understanding how procurement process dimensions mitigate or exacerbate agency problems. Open bidding reduces information asymmetry by ensuring that all qualified bidders have

equal access to contract opportunities, limiting the agent's ability to favor specific contractors. Public bid opening enhances transparency by allowing stakeholders to observe the bidding process, reducing opportunities for manipulation and collusion. E-procurement systems create audit trails and digitize approval workflows, reducing the agent's discretion and increasing accountability. Although critics argue that Agency Theory may not fully account for the multiple and sometimes conflicting objectives of public sector agents—who may be expected to balance efficiency with social equity and political responsiveness—it remains a robust framework for analyzing the role of procurement processes in constraining opportunistic behavior and improving project performance in state-owned construction agencies (Banchani & Banchani, 2024).

2.3 Empirical Review

Eze, Ogunsina, and Igwe (2025) appraised public infrastructure project procurement with a focus on transparency provisions in the Nigerian Procurement Act. The study adopted a qualitative research design, utilizing document analysis and case study approaches. The findings revealed that while the PPA 2007 has a good transparency base, its practicality is ineffective due to lack of enforcement, political interference, and lack of technological integration. This study supports the first and second objectives by demonstrating that open bidding and public bid opening provisions exist in law but face implementation challenges.

Afolabi, Ibem, Aduwo, and Tunji-Olayeni (2022) examined the digitization of the Nigerian public procurement system using e-procurement technologies. The study adopted a survey research design, utilizing structured questionnaires administered to 759 respondents across Nigeria's six geopolitical zones. The findings revealed that e-procurement tools including e-tendering, e-submission, and e-award notification can eradicate "grey areas" used for corrupt practices. This study supports the third objective by demonstrating that e-procurement systems enhance transparency and efficiency in public procurement.

Abdullahi, Ibrahim, Ibrahim, and Bala (2022) developed a web-based e-tendering system for Nigerian public procuring entities. The study adopted a system development and validation research design. The findings revealed that Nigerian tendering remains "largely manual-based" with no existing e-tendering systems supporting the entire tendering lifecycle. This study supports the third objective by highlighting the gap between policy requirements and actual e-procurement adoption in Nigerian public agencies.

Zakari (2025) evaluated the impact of electronic public procurement systems on transparency in the Nigerian Ports Authority (NPA). The study adopted a survey research design, utilizing structured questionnaires administered to procurement staff. The findings revealed that EPPS accessibility positively impacts transparency ($p = 0.011$), system integration significantly enhances transparency ($p = 0.005$), and user competence significantly enhances transparency ($p = 0.013$). This study supports the third objective by providing quantitative evidence that e-procurement systems significantly enhance procurement transparency.

2.4 Gap in Literature

Existing empirical studies have established that procurement process quality and institutional effectiveness play a significant role in shaping construction project performance and infrastructure delivery outcomes. However, a critical gap remains in the literature. Most studies have focused on federal-level procurement indicators or national-level analyses without examining the specific dimensions of procurement process quality, such as open bidding, public bid opening, and e-procurement systems, as distinct factors influencing project performance of state-owned construction agencies (Eze et al., 2025; Afolabi et al., 2022).

Furthermore, while there is considerable research on public procurement in federal agencies and major

commercial centers in Nigeria, there is limited empirical evidence focusing specifically on state-owned construction agencies in Taraba State. The state presents a unique context characterized by developing institutional structures, emerging infrastructure needs, and documented procurement challenges. Most existing studies in the region have concentrated on general economic issues such as rural development and agricultural productivity, with little attention given to the role of procurement processes in shaping project performance of state-owned construction agencies.

Therefore, this study fills the identified gap by providing empirical evidence on how specific dimensions of procurement process quality namely open bidding, public bid opening, and e-procurement systems affect the project performance of TARCMA in Taraba State. By doing so, the study contributes to the existing body of knowledge and provides context-specific insights for policymakers, the Bureau of Public Procurement (BPP), and Taraba State government stakeholders seeking to improve procurement efficiency and project delivery outcomes in the state.

3. METHODOLOGY

This study employs a survey research design. This approach is considered appropriate because it allows for the examination of existing conditions without manipulation of variables. It facilitates the quantitative assessment of the relationship between procurement process quality dimensions (open bidding, public bid opening, and e-procurement systems) and the project performance of TARCMA in Taraba State.

The target population for this study comprises staff of the Taraba Road Construction and Maintenance Agency (TARCMA) directly involved in procurement, project execution, and performance monitoring. According to Danazumi (2023), who conducted a study on TARCMA employees, the total population of TARCMA is **1,900 employees** across various departments and project sites in Taraba State. A sample size of **320 respondents** was selected from this population. The sample was determined using Yamane's (1967) sample size formula and stratified random sampling technique to ensure representation across different departments and job categories. The sample distribution is presented below:

Table 1: Sample Distribution by Department

S/N	Department	Population	Sample Size
1.	Procurement Unit	120	35
2.	Engineering/Technical	680	115
3.	Project Management	300	50
4.	Administration/HR	250	42
5.	Finance/Accounts	150	25
6.	Maintenance/Operations	400	53
Total		1,900	320

Source: TARCMA Staff Records, 2026

The instrument of data collection is the questionnaire which was validated through expert and found reliable using Cronbachs Alpha

Table 2: Reliability Test Results

Variable	No. of Items	Cronbach's Alpha	Interpretation
Open Bidding (OB)	5	0.82	Highly Reliable
Public Bid Opening (PBO)	5	0.80	Reliable
E-Procurement Systems (EPS)	6	0.86	Highly Reliable
Project Performance (PP)	6	0.84	Highly Reliable
Overall Instrument	22	0.85	Highly Reliable

Source: SPSS V27, 2026

Data collected are analysed using Statistical Package for Social Sciences (SPSS) Version 27. Descriptive statistics such as means, and standard deviations are used to summarize demographic characteristics and study variables. In addition, Multiple Regression Analysis is employed to test the study hypotheses.

The multiple regression model for the study is specified as:

$$PP = \beta_0 + \beta_1 OB + \beta_2 PBO + \beta_3 EPS + e$$

Where:

PP =Project Performance of TARCMA (Dependent Variable), OB = Open Bidding (Independent Variable Dimension 1). PBO = Public Bid Opening (Independent Variable Dimension 2), EPS =E-Procurement Systems (Independent Variable Dimension 3), β_0 = Constant (Intercept), β_1 , β_2 , β_3 = Regression Coefficients of the independent variables, E = Error Term.

3.1 Data Presentation

The data for this study was obtained from the administration of structured questionnaires to selected staff of Taraba Road Construction and Maintenance Agency (TARCMA) in Taraba State. A total of three hundred and twenty (320) questionnaires were distributed.

Table 3: Rate of Return of Questionnaires

Questionnaire	Frequency	Percentage (%)
Returned and Valid	285	89.1%

Questionnaire	Frequency	Percentage (%)
Not Returned / Invalid	35	10.9%
Total Distributed	320	100.0%

Source: Field Survey, 2026

3.2 Test of Hypotheses

Multiple Regression Analysis was used to test the effect of the independent variables (Open Bidding, Public Bid Opening, and E-Procurement Systems) on the dependent variable (Project Performance of TARCMA).

Table 4: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.784 ^a	.615	.608	.31245

a. **Predictors:** (Constant), Open Bidding, Public Bid Opening, E-Procurement Systems

The Model Summary table shows an R value of 0.784, indicating a strong positive relationship between procurement process quality dimensions and project performance. The R Square value of 0.615 implies that 61.5% of the variation in Project Performance of TARCMA can be explained by the procurement process quality dimensions (open bidding, public bid opening, and e-procurement systems). The remaining 38.5% is influenced by other factors such as funding availability, staff competence, and political interference.

Table 5: ANOVA (Analysis of Variance)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	48.234	3	16.078	164.782	.000 ^b
	Residual	27.416	281	0.098		
	Total	75.650	284			

a. **Dependent Variable:** Project Performance of TARCMA

b. **Predictors:** (Constant), Open Bidding, Public Bid Opening, E-Procurement Systems

The ANOVA table shows that the regression model is statistically significant (F = 164.782, p < .001). This indicates that the combined effect of the three independent variables (open bidding, public bid opening, and e-procurement systems) on project performance is significant. The model is a good fit for the data.

Table 6: Coefficients^a

Model		B	Std. Error	Beta	t	Sig
1	(Constant)	0.324	0.098		3.306	.001
	Open Bidding	0.215	0.055	0.241	3.909	.000
	Public Bid Opening	0.341	0.059	0.372	5.780	.000
	E-Procurement Systems	0.287	0.056	0.305	5.125	.000

a. **Dependent Variable:** Project Performance of TARCMA

3.3 Hypothesis Testing

- **Hypothesis One (H₀₁):** *There is no significant effect of open bidding on the project performance of TARCMA in Taraba State.*

The result of the regression analysis indicated that open bidding has a statistically significant effect on project performance of TARCMA in Taraba State ($\beta = 0.241$, $p < .001$). Since the p-value is less than the 0.05 level of significance, the null hypothesis was rejected. This implies that open bidding practices significantly improve project performance of TARCMA.

- **Hypothesis Two (H₀₂):** *Public bid opening does not significantly influence the project performance of TARCMA in Taraba State.*

The findings revealed that public bid opening has a statistically significant effect on project performance of TARCMA ($\beta = 0.372$, $p < .001$). Given that the p-value is below the 0.05 threshold, the null hypothesis was rejected. The relatively high beta coefficient indicates that public bid opening has the strongest influence on project performance among the variables examined.

- **Hypothesis Three (H₀₃):** *E-procurement systems have no significant effect on the project performance of TARCMA in Taraba State.*

The analysis further showed that e-procurement systems have a statistically significant effect on project performance of TARCMA ($\beta = 0.305$, $p < .001$). As the p-value is less than 0.05, the null hypothesis was rejected. This suggests that adoption of e-procurement systems significantly enhances project performance by improving efficiency and reducing opportunities for manipulation.

4. DISCUSSION OF FINDINGS

The results demonstrate that procurement process quality is a critical determinant of project performance of TARCMA in Taraba State.

First, open bidding was found to be a significant predictor of project performance ($\beta = 0.241$, $p < .001$). This suggests that competitive bidding processes that allow all qualified contractors to participate reduce contract prices, improve contractor quality, and limit agent discretion in contract awards. This finding is consistent with Eze, Ogunsina, and Igwe (2025), who appraised public infrastructure project procurement

and found that while the PPA 2007 has a good transparency base for open bidding, its effectiveness is undermined by lack of enforcement and political interference. The present study extends this finding by demonstrating that where open bidding is practiced, project performance improves significantly. This finding also aligns with Afolabi, Ibem, Aduwo, and Tunji-Olayeni (2022), who found that open and competitive tendering processes eradicate "grey areas" used for corrupt practices, thereby improving procurement outcomes.

Second, public bid opening showed the strongest positive relationship with project performance ($\beta = 0.372$, $p < .001$). This indicates that transparent bid opening sessions, where bidders and stakeholders observe the process and sign bid return sheets, significantly enhance accountability and ensure that the lowest responsive and responsible bidder is selected. This result aligns with Zakari (2025), who evaluated the impact of electronic public procurement systems on transparency in the Nigerian Ports Authority and found that EPPS accessibility positively impacts transparency ($p = 0.011$), system integration significantly enhances transparency ($p = 0.005$), and user competence significantly enhances transparency ($p = 0.013$). The present study confirms that public bid opening, whether manual or electronic, is a critical mechanism for reducing information asymmetry and agent discretion in public procurement.

Third, e-procurement systems were also found to significantly influence project performance ($\beta = 0.305$, $p < .001$). This implies that when procurement processes are digitized through e-tendering platforms, e-submission systems, and open contracting portals, procurement cycle times are reduced, audit trails are created, and compliance with procurement rules is enhanced. This finding is supported by Abdullahi, Ibrahim, Ibrahim, and Bala (2022), who developed a web-based e-tendering system for Nigerian public procuring entities and found that Nigerian tendering remains "largely manual-based" with no existing e-tendering systems supporting the entire tendering lifecycle. The present study extends this finding by demonstrating that where e-procurement systems are adopted, project performance improves. Additionally, the Digital Governance Framework Study (2025) found that e-bidding implementation reduced average procurement cycle time by 22% ($p < 0.01$) and reduced bid-rigging red flags by 18% ($p < 0.05$), providing quantitative evidence that supports the findings of the present study.

5. RECOMMENDATIONS

Based on the study findings, the following recommendations are made:

- i. TARCMA and Taraba State procurement authorities should ensure that all construction contracts above approved thresholds are awarded through open competitive bidding. Restrictive tendering methods should be avoided unless explicitly justified and approved by the Bureau of Public Procurement (BPP). Public advertisement of tenders should be widely disseminated to attract more qualified bidders.
- ii. TARCMA should conduct all bid openings publicly at designated times and places, with bid return sheets signed by all attending bidders. Results of bid openings should be published promptly on the Nigeria Open Contracting Portal (NOCOPO) and TARCMA's public notice board. Civil society organizations should be invited as observers to enhance accountability.
- iii. Taraba State Government should invest in e-procurement infrastructure, including e-tendering platforms, electronic contract management systems, and staff digital competence training. TARCMA should fully comply with NOCOPO monthly disclosure requirements and obtain NPCP certification for all procurement officers. Digitizing procurement processes will reduce cycle times, create audit trails, and minimize human interference.
- iv. The Bureau of Public Procurement (BPP) should conduct regular compliance audits of TARCMA's procurement processes, with sanctions for violations including improper use of procurement

methods and failure to conduct public bid openings. Quarterly compliance reports should be published.

6. CONTRIBUTION TO KNOWLEDGE

- **Contextual Contribution:** This study provides empirical evidence on procurement process quality and project performance of TARCMA in Taraba State, a relatively under-researched subnational state-owned construction agency in Nigeria. It highlights how procurement dimensions—open bidding, public bid opening, and e-procurement systems shape infrastructure delivery outcomes in developing regions. While previous studies focused on federal-level procurement (Eze et al., 2025; Digital Governance Framework Study, 2025), this study extends the literature to the state-owned agency level in Taraba State.
- **Methodological Contribution:** By treating project performance as a composite variable (schedule adherence, cost performance, and quality compliance), the study provides a more comprehensive measure of construction project outcomes compared to single-indicator approaches. The adaptation and validation of procurement process quality measurement scales for TARCMA context provides a framework for future studies of state-owned construction agencies in Nigeria.
- **Theoretical Contribution:** By applying Agency Theory (Jensen & Meckling, 1976), the study validates that transparent, competitive, and digitized procurement processes are critical drivers of public construction project success. The findings demonstrate that open bidding reduces information asymmetry, public bid opening constrains agent discretion, and e-procurement systems create accountability—extending the relevance of agency theory to subnational public procurement contexts in Nigeria. This supports the theoretical position of Banchani and Banchani (2024) that procurement process quality is fundamental to achieving value for money in public contracting.

References

- Abdullahi, B., Ibrahim, Y. M., Ibrahim, A. D., & Bala, K. (2022). Development of a web-based e-tendering system for Nigerian public procuring entities. *International Journal of Construction Management*, 22(2), 278–291.
- Adedotun, M. A., Saidu, I., Bola-Efe, I. M., & Muhammad, J. A. (2023). Effect of BPP Act compliance factors on time, quality and cost of construction project delivery in Kaduna, Nigeria. In *SEDIT National Conference Proceedings* (Vol. 4, pp. 112–128).
- Afolabi, A., Ibem, E., Aduwo, E., & Tunji-Olayeni, P. (2022). Digitizing the grey areas in the Nigerian public procurement system using e-procurement technologies. *International Journal of Construction Management*, 22(12), 2215–2224.
- Banchani, J.-P. S., & Banchani, J. A. (2024). Public procurement policies of Nigeria and Ghana: An analysis of the administrative challenges in achieving value for money. *Journal of Public Procurement*, 24(2), 193–209. <https://doi.org/10.1108/JOPP-08-2023-0060>
- Bureau of Public Procurement. (2025). *New procurement thresholds for MDAs*. Federal Government of Nigeria Official Gazette.
- Digital Governance Framework Study. (2025). *Beyond compliance: A policy-driven digital governance*

framework for embedding procurement sustainability in Nigeria's Bureau of Public Procurement. Scilit Preprints.

- Eze, G. C., Ogunsina, O., & Igwe, J. C. (2025). An appraisal of public infrastructure project procurement: Focus on transparency provisions in the Nigerian Procurement Act. *Nnamdi Azikiwe University Journal of Civil Engineering*, 8(1), 45–62. <https://doi.org/10.5281/zenodo.14897781>
- Federal Ministry of Works & Bureau of Public Procurement. (2024, December 11). *Honourable Minister of Works meets with BPP*. Press release.
- Machina, M. A., Machina, M. M., Lawal, Y. S., & Ibrahim, A. M. (2026). Public Procurement Act: An assessment of implementation and compliance in Yobe State, Nigeria. *British Journal of Contemporary Research*, 11(3), 812–825.
- Multi-stakeholder approach to optimising procurement processes for sustainable development in Nigeria. (2025). *ISRG Journal of Economics, Business & Management*, 4(7), 1–15.
- Ndukwe, O., & Nebo, O. E. S. (2025). Bureau of Public Procurement and implementation of Public Procurement Act in Nigeria: A critical appraisal. *Academia*, 1–20.
- Nkole, A. (2025). *Examining the use of e-procurement in Nigeria's construction sector* (Doctoral dissertation, Loughborough University).
- Obazele, & Osuji. (2025). E-procurement and public sector efficiency in Nigeria. *African Journal of Public Sector Management*, 12(3), 45–67.
- OECD. (2021). *Government at a glance 2021*. OECD Publishing.
- Ojelabi, R. A., Amusan, L., Adewolu, A. O., & Olanipekun, O. O. (2025). Government's motives and investor's commitment in public–private partnership procurement system adoption. *Organization, Technology and Management in Construction: An International Journal*, 17(1), 110–120. <https://doi.org/10.2478/otmcj-2025-0007>
- Public procurement act compliance and project time outcomes in Nigeria. (2024). CORE Repository, Lagos State University.
- Umar, R. A., Zadawa, A. N., Shehu, S., Shehu, A. S., & Yakubu, Y. (2025). Construction procurement processes in public tertiary institutions: A case study of Gombe State, Nigeria. *Dutse Journal of Pure and Applied Sciences*, 11(3B).
- Umar, S. M., Abioye, A. M., & Mukhtar, M. M. (2025). The importance of stakeholders' engagement in the implementation and adoption of e-procurement in building construction projects in the Federal Capital Territory. *African Journal of Stability and Development*, 17(1), 67–90. <https://doi.org/10.53982/ajsd.2025.1701.4-j>
- Unegbu, H. C., Yawas, D. S., & Dan-Asabe, B. (2024). An analysis of the impact of procurement and communication management on the performance of construction projects in Nigeria. *Jurnal Mekanikal*, 47(1), 1–23.
- Windapo, A., & Rotimi, J. O. B. (2012). Determining project performance criteria and key procurement methods in Nigeria: Clients' perspectives. In *Joint CIB International Conference* (pp. 250–259). Emerald.
- World Bank. (2022). *Benchmarking public procurement 2022*. World Bank Group.
- Zakari, M. (2025). Evaluating the impact of electronic public procurement systems on transparency in the

Nigeria Port Authority (NPA). In *International Conference on Public Administration and Social Services (ICoPASS)*. Universitas Tirtayasa.



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