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RESEARCH ARTICLE

EXAMINING THE BENEFITS AND CHALLENGES OF E-PROCUREMENT IMPLEMENTATION IN SELECTED NIGER DELTA STATES, NIGERIA

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ABSTRACT

This study examines the benefits and challenges of e-procurement implementation in selected Niger Delta states — Rivers, Cross River, and Akwa Ibom, covering procurement activities over the period 2020–2025. Anchored on five specific objectives, the study investigates transparency gains, extent of adoption across Ministries, Departments, and Agencies (MDAs), barriers to implementation, cost-effectiveness relative to traditional methods, and strategies for improving e-procurement uptake in sub-national governance. The study is theoretically grounded in the Technology Acceptance Model (TAM), the Unified Theory of Acceptance and Use of Technology (UTAUT), and Institutional Theory. A mixed-methods survey research design was adopted, with primary data obtained from 135 procurement-related personnel through a validated structured questionnaire and semi-structured interview guide. Descriptive statistics and one-sample t-tests ($\alpha = 0.05$) were employed for quantitative analysis, while thematic analysis was applied to qualitative data. Findings reveal that transparency is the most highly rated benefit (mean = 4.58; SD = 0.65; $t = 28.654$; $p < 0.05$), demonstrating that digital procurement platforms significantly reduce corruption and provide verifiable audit trails. E-procurement also significantly reduces transaction costs and processing time (mean = 4.55; SD = 0.71; $t = 29.042$; $p < 0.05$). Principal barriers include inadequate ICT infrastructure (mean = 4.40; SD = 0.99; $t = 19.289$; $p < 0.05$), weak legal and institutional enforcement frameworks (mean = 4.45; SD = 1.05; $t = 22.841$; $p < 0.05$), and organizational resistance driven by insufficient training rather than fear of job displacement (mean = 4.03; SD = 1.00; $t = 11.952$; $p < 0.05$). All five null hypotheses were rejected at $p < 0.05$. The study concludes that e-procurement holds significant transformative potential for public procurement governance in the Niger Delta, but this potential remains largely unrealized due to compounding deficits in ICT infrastructure, human capacity, organizational culture, and legal enforcement. Targeted and sustained investment in ICT infrastructure, comprehensive capacity-building programmes, and robust legal reform are recommended.

Keywords: Public procurement, transparency, cost-effectiveness, ICT infrastructure, technology acceptance model, sub-national governance

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1.0. INTRODUCTION

In contemporary governance, effective public procurement systems are recognized as foundational to national development, efficient service delivery, and the attainment of sustainable development goals. With the recent challenges of public corruption, accountability, transparency and challenges of documentation and record keeping alongside the brooder rise of bureaucratic bottlenecks across the Ministries Departments and Agencies (MDAs)in most developing countries of the Global South, it appears that the core foundations of traditional public procurement is undermined. Such trends have led to increasing scholarly works focusing on various processes and potentials of public procurement (Basheka, and Bisangabasaija, 2010; Mebrate & Shumet, 2024). Much of these studies, however, have tended to ignore the longer-term relevance and role of e-procurement in in the public sector including the workings of MDAs —a gap that is evident in traditional procurement practices and public administration , which emphasize procurement based on obtaining prerequisite documentations and criteria(Gould-Williams, and Mohamed,2010).

This article seeks to transform this practice by highlighting the benefits and challenges of e-procurement in public service delivery drawing on three states in the Niger Delta. In particular, it draws attention to the benefits of e-procurement in promoting transparency and accountability across the selected states, which is integral to the understanding of the various intricate processes of procurement. The term procurement is broadly defined as the acquisition of goods, works, and services by public institutions represents a major proportion of government expenditure and serves as a critical mechanism for socio-economic transformation. In Nigeria, procurement spending accounts for approximately 70 percent of government budgets (Williams & Adeniran, 2024), underscoring its centrality in infrastructure development and the delivery of public goods.

Further, it examines related challenges of e-procurement such as issues of poor technological know-how, challenges of procedural response to the automation of e-procurement as well as seamless ness, effective, timely and responsive documentation. This emphasis on the mutual linkages of benefits and challenges of e-procurement not only underscores some neglected aspects of public sector governance rather, it better accounts for the specific contexts of e-procurement processes among MDAs by identifying the potentials, threats and opportunities a research agenda that most procurement studies have ignored. Thus, the notion that traditional procurement practice is better will be fundamentally challenged.

However, despite its fiscal significance, Nigerian public procurement has historically been characterized by systemic dysfunctions including bureaucratic delays, pervasive corruption, political interference, and chronic lack of accountability. In response, the enactment of the Public Procurement Act (2007) and the establishment of the Bureau of Public Procurement (BPP) represented landmark institutional reforms. A key innovation arising from this reform agenda is electronic procurement (e-procurement) the application of digital technologies to manage procurement processes end-to-end which has been globally recognized for improving efficiency, reducing costs, and enhancing transparency (Musa, Jaafar & Raslim, 2023; OECD, 2022).

The BPP's launch of the Nigeria Open Contracting Portal (NOCOPO) in 2017, aligned with the Open Government Partnership, represents a significant step toward transparency, enabling real-time public access to procurement plans, tender notices, contract awards, and implementation reports (BPP,

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2019). Despite these federal-level strides, implementation at the sub-national level particularly within the Niger Delta remains persistently weak. The region's oil-driven fiscal capacity paradoxically coexists with poor ICT infrastructure, low digital literacy, institutional resistance, and inconsistent policy enforcement (Okoro, 2023; Musa, Jaafar & Raslim, 2023).

Existing scholarship on e-procurement in Nigeria is predominantly concentrated at the federal level or within economically prominent states, leaving a significant geographic gap concerning the unique governance and institutional realities of the Niger Delta. This study seeks to bridge that gap by empirically investigating the benefits and challenges of e-procurement adoption across Rivers, Cross River, and Akwa Ibom States three strategically selected Niger Delta states thereby offering context-specific evidence to inform policy and reform. Essentially, many organizational accounts of public procurement have been criticized for shortcomings in specifying the various benefits as well as challenges of e-procurement , and their failure to address the existent covert forms of corruption and poor transparency and accountability in traditional model of procurement, which have undermined and, in some cases, derail procurement processes in the developing countries leading to the issue of public procurement reform (Jibrin, Ejura, and Augustine, 2014).

Against this backdrop, this study follows a number of previous studies that have emphasized the prospects of e-procurement. Much of the perspective to the debate highlight the various benefits of e-procurement as a key driver of effective bureaucracy (Johnson, and Klassen, 2005; Makabira, and Waiganjo,2014), which reflect various importance of e-procurement in the processes of public procurement as a means through which MDAs can maximize theory potentials through cost effective and transparent processes and importantly sustainable procurement (Hussein, and Shale, 2014).We draw on some of these arguments and, in many respects, share their perspectives on the centrality of e-procurement among three selected states n the Niger Delta. Thus, by highlighting the constitutive relevance of e-procurement within the developing countries, the study aims to make a distinct contribution to the literature, which is important to the understanding of the specific processes and dynamics of e-procurement —one that addresses the contemporary context of challenges and prospects of procurement.

2. LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 Conceptual Overview of E-Procurement

Electronic procurement (e-procurement) has emerged as a transformative innovation in public sector governance, representing the integration of information and communication technologies (ICT) into procurement processes to enhance efficiency, transparency, and accountability. E-procurement encompasses the automation and digitalization of procurement functions, including needs assessment, requisitioning, tendering, bid evaluation, contract award, and post-contract management (OECD, 2022; UN/CEFACT, 2021).

From a systems perspective, e-procurement is not merely a technological tool but a comprehensive governance mechanism that restructures procurement workflows, minimizes human discretion, and institutionalizes auditability. It integrates several modules such as e-tendering, e-sourcing, e-reverse auctions, e-catalogues, contract lifecycle management systems, and e-payment platforms. These modules collectively ensure seamless procurement cycles and reduce fragmentation in public financial management systems.

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Globally, the adoption of e-procurement has been driven by the need to curb corruption, improve service delivery, and achieve value for money in public expenditure. In developed economies, e-procurement systems are fully integrated into broader digital government frameworks, enabling real-time monitoring and open contracting (World Bank, 2022). In developing countries, however, adoption has been uneven due to infrastructural and institutional constraints.

In Nigeria, e-procurement gained prominence following procurement reforms initiated by the Public Procurement Act (2007) and further strengthened by the introduction of the Nigeria Open Contracting Portal (NOCOPO). Despite these reforms, implementation remains inconsistent across states, particularly in the Niger Delta, where institutional capacity and ICT infrastructure vary significantly. Empirical studies have consistently demonstrated that e-procurement enhances procurement performance.

Gardenal (2013) identified five core impact dimensions: efficiency, effectiveness, competitiveness, transparency, and dematerialization. The literature on e-procurement has a long tradition in public sector and the various processes of securing resources or materials such as finds receipts and documentations. E-procurement as Mebrate and Shumet (2024) highlighted functions on such concepts as technological innovation, transparency, automated receipts, documentation and timely capture of transaction in explaining the structure and patterns of securing materials or resources to carry out certain official tasks or activities. Some studies argue that e-procurement offers safe and secure transaction which is not only timely but embodied in precision and accuracy.

Beyond safe and secure transaction, e-procurement has been argued to be fast and seamless. For instance, Maagi and Mwakalobo (2023) found that e-procurement significantly reduces procurement cycle time, while Boateng (2025) reported measurable cost savings in public construction procurement. Beyond operational efficiency, e-procurement also promotes inclusiveness by widening supplier participation, particularly for small and medium-sized enterprises (SMEs), through open and accessible bidding platforms. This democratization of procurement processes contributes to competitive pricing and reduces monopolistic tendencies in public contracting.

Benefits of E-Procurement in Public Sector Governance

The benefits of e-procurement are multidimensional, spanning economic, administrative, and governance domains.

Transparency and Accountability: One of the most widely acknowledged benefits of e-procurement is enhanced transparency. Digital platforms provide real-time access to procurement information, including tender notices, evaluation criteria, contract awards, and implementation status. This reduces information asymmetry and limits opportunities for corrupt practices such as bid rigging and contract inflation (Boafo et al., 2020). Transparency also strengthens accountability by creating digital audit trails that can be easily reviewed by oversight institutions, civil society organizations, and the public. In contexts like the Niger Delta, where procurement corruption has historically undermined development outcomes, e-procurement serves as a critical anti-corruption tool.

Cost Reduction and Efficiency: E-procurement significantly reduces transaction costs by eliminating manual processes, reducing paperwork, and minimizing administrative overhead. Studies indicate that

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digital procurement systems can reduce procurement costs by up to 15% (Boateng, 2025). Cost savings are achieved through improved price competition, reduced processing time, and better demand aggregation. Efficiency gains are also evident in shorter procurement cycles, faster decision-making, and improved coordination among stakeholders. Automation of routine tasks allows procurement personnel to focus on strategic functions such as supplier relationship management and contract monitoring.

Improved Competition and Market Access: E-procurement platforms expand market access by enabling broader participation from suppliers across geographic boundaries. This enhances competition and reduces the dominance of politically connected contractors. Increased competition leads to better pricing and improved quality of goods and services.

Data-Driven Decision Making: Digital procurement systems generate large volumes of data that can be analyzed to improve procurement planning, forecasting, and policy formulation. Governments can leverage procurement data to identify spending patterns, detect anomalies, and optimize resource allocation.

Challenges of E-Procurement Adoption

Despite its numerous benefits, e-procurement implementation faces significant challenges, particularly in developing economies.

1. ICT Infrastructure Deficiencies

Inadequate ICT infrastructure remains the most critical barrier to e-procurement adoption. This includes unreliable internet connectivity, insufficient hardware, and unstable power supply. Salifu et al. (2023) identified ICT constraints as the dominant barrier across public sector institutions in sub-Saharan Africa.

2. Human Capacity and Digital Literacy

Limited technical skills and low digital literacy among procurement personnel hinder effective utilization of e-procurement systems. Resistance to change is often rooted in lack of competence rather than unwillingness to adopt new technologies.

3. Legal and Regulatory Constraints

Weak legal frameworks and lack of enforcement mechanisms undermine e-procurement adoption. In many cases, procurement laws do not explicitly mandate digital procurement, allowing MDAs to revert to traditional methods without consequences (Eyo & Bassey, 2022).

4. Organizational Resistance

Institutional inertia and entrenched bureaucratic practices pose significant challenges. Employees accustomed to manual systems may resist digital transformation due to perceived complexity or loss of control.

5. Financial Constraints

The initial cost of implementing e-procurement systems including software acquisition, infrastructure development, and training can be prohibitive for sub-national governments.

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2.2. Theoretical Framework

This study is anchored on three major theoretical frameworks: TAM, UTAUT, and Institutional Theory. To strengthen your paper, we deepen them analytically:

1. Technology Acceptance Model (TAM)

The Technology Acceptance Model (Davis, 1989) is one of the most influential models for explaining user adoption of information systems. TAM posits that two key variables determine technology acceptance: Perceived Usefulness (PU) the degree to which a person believes that using a system enhances job performance Perceived Ease of Use (PEOU) the degree to which a person believes that using the system will be free of effort

In the context of e-procurement, procurement officers are more likely to adopt digital systems when they perceive them as improving efficiency, reducing workload, and enhancing transparency. However, in developing regions like the Niger Delta, perceived ease of use becomes particularly critical due to varying levels of digital literacy. Where systems are complex or training is inadequate, adoption rates decline significantly. TAM also suggests that external variables such as training, system design, and organizational support indirectly influence adoption through PU and PEOU. This explains why capacity-building initiatives are central to successful e-procurement implementation.

2. Unified Theory of Acceptance and Use of Technology (UTAUT)

UTAUT (Venkatesh et al., 2003) extends TAM by integrating multiple models into a unified framework. It identifies four key determinants:

Performance Expectancy – belief that the system improves job performance

Effort Expectancy – ease associated with system use

Social Influence – extent to which others influence usage

Facilitating Conditions – availability of infrastructure and support

UTAUT is particularly relevant in this study because it incorporates organizational and environmental factors, which are critical in public sector settings. In the Niger Delta, poor infrastructure reflects weak facilitating conditions, leadership commitment influences social influence; training affects effort expectancy.

Thus, UTAUT provides a more holistic explanation of e-procurement adoption compared to TAM.

3. Institutional Theory

Institutional Theory explains how organizational behavior is shaped by external pressures rather than purely rational efficiency considerations.

According to Meyer & Rowan (1977) and Scott (2001), organizations respond to three types of pressures:

Coercive pressures – laws, regulations, government mandates

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Normative pressures – professional standards and expectations

Mimetic pressures – imitation of successful organizations

In Nigeria, coercive pressure is weak at the state level due to lack of enforceable laws mandating e-procurement. This explains inconsistent adoption across states.

Normative pressure arises from professional bodies and international standards promoting transparency and accountability.

Mimetic pressure occurs when states attempt to replicate successful federal initiatives like NOCOPO.

Institutional Theory is crucial because it explains why adoption may occur symbolically (for legitimacy) rather than functionally (for efficiency).

2.4 Gaps in Literature

A critical review of the literature reveals several significant gaps. First, existing Nigerian e-procurement research is geographically concentrated at the federal level or in economically prominent states, leaving Cross River and Akwa Ibom comparatively underrepresented. Second, most studies present generalized findings without accounting for the distinctive socio-political and institutional conditions of the Niger Delta. Third, many studies rely on descriptive analysis, with insufficiently rigorous hypothesis testing. Fourth, most studies examine public or private sectors in isolation, precluding cross-sector comparative insights. This study directly addresses these gaps.

3.0. METHODOLOGY

3.1. Study Area

The study was conducted across selected MDAs in Rivers State, Cross River State, and Akwa Ibom State chosen for their economic significance, high volumes of public procurement activity, and varying degrees of ICT adoption in procurement systems.

3.2. Research Design and Population

A mixed-methods survey research design was adopted, combining quantitative and qualitative approaches. The target population comprised 204 key stakeholders — procurement officers, ICT personnel, policymakers and senior administrators, and registered contractors — drawn from official records of the Bureau of Public Procurement (BPP) and state procurement agencies. The sample size of 135 respondents was determined using Yamane's (1967) formula at a 5% significance level ($n = N / [1 + N(e^2)] = 204 / [1 +8\ 204(0.05^2)] \approx 135$). Purposive sampling was employed to ensure informed respondents with direct procurement experience.

Table 1: Stratified Sample Distribution by State and Stakeholder Category

Stakeholder	Rivers	Cross River	Akwa Ibom	Total
Procurement Officers	35	17	24	76
Contractors	20	13	10	43
ICT Personnel	15	10	9	34
Policymakers	30	10	11	51
Grand Total	100	50	54	204

Source: Researcher's Field Survey (2025)

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3.3 Data Collection and Analysis

Primary data were collected using a validated structured questionnaire (20 items on a 5-point Likert scale) and a semi-structured interview guide. Instruments were administered both in-person and electronically via Google Forms. Quantitative data were coded and analyzed using SPSS version 25; analysis included descriptive statistics (frequency distributions, means, standard deviations) and inferential statistics (one-sample t-test, $\alpha = 0.05$). Qualitative data from interviews and open-ended responses were analyzed using thematic analysis following Braun and Clarke's (2006) six-phase model, yielding five major themes aligned with the study objectives. Ethical compliance was maintained through voluntary participation, informed consent, and strict confidentiality.

4.0. RESULTS AND DISCUSSION

4.1 Demographic Profile of Respondents

A total of 135 valid responses were obtained. Males constituted 58.5 percent of respondents and females 41.5 percent, reflecting the gender composition of public procurement roles in the study area. Respondents were predominantly within the 40–49 age bracket (28 percent), followed by 30–39 years (26 percent), indicating experienced and professionally active procurement personnel. Educational qualifications were predominantly at the bachelor's degree level (50 percent), followed by master's degree holders (26 percent), reflecting a literate respondent base with adequate conceptual understanding of e-procurement. Notably, 47 percent of respondents reported over 10 years of procurement experience, confirming familiarity with both traditional and electronic procurement systems.

4.2. Objective I: Benefits of E-Procurement — Transparency

Table 2 presents the one-sample t-test results for assessing transparency as the primary benefit of e-procurement (Objective I).

Table 2: One-Sample T-Test — Transparency (Objective I)

Variable	Mean ($\bar{x}$	Std. Dev.	t-value	p-value
Transparency	4.58	0.65	28.654	0.000

Source: Researcher's Field Survey (2025); Test Value = 3.0

Transparency was the most highly rated benefit of e-procurement (mean = 4.58; SD = 0.65; t = 28.654; $p < 0.05$), leading to rejection of H_{01}. Stakeholders perceive digital procurement platforms as the most effective tool for reducing corruption and ensuring competitive fairness. Qualitative responses reinforced this, with a Cross River State procurement officer noting: 'With everything online, it is difficult to hide information or alter records.' These findings align with Boafo, Ahudey, and Darteh (2020) and Abubakar (2024), both of whom confirm that e-procurement improves transparency through streamlined processes and accessible audit trails. In the Niger Delta's historically mistrustful governance environment, respondents emphasized that online disclosure is gradually rebuilding public confidence in procurement processes.

4.3. Objective II: E-Procurement Adoption — Organizational Resistance

Table 3 presents results assessing organizational culture and leadership commitment as determinants of e-procurement adoption (Objective II).

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Table 3: One-Sample T-Test — Organizational Resistance (Objective II)

Variable	Mean ($\bar{x}$	Std. Dev.	t-value	p-value
Organizational Resistance	4.03	1.00	11.952	0.000

Source: Researcher's Field Survey (2025).

Organizational resistance registered a mean score of 4.03 (SD = 1.00; t = 11.952; $p < 0.05$), rejecting H_{02}. Critically, qualitative findings reveal that resistance is driven less by fear of job displacement and more by inadequate training and low digital confidence, consistent with TAM's emphasis on perceived ease of use as an adoption determinant. A policymaker in Akwa Ibom remarked: 'The fear is not always job loss; it's that people are not confident using the computer. These findings corroborate Ibem et al. (2016) and Mamudu and Oseyomon (2025), who similarly identify organizational culture and training deficits as principal drivers of adoption resistance.

4.4. Objective III: Challenges — Infrastructural Barriers

Table 4: One-Sample T-Test — Infrastructural Challenges (Objective III).

Variable	Mean ($\bar{x}$	Std. Dev.	t-value	p-value
Infrastructural Challenges	4.40	0.99	19.289	0.000

Source: Researcher's Field Survey (2025).

Inadequate ICT infrastructure was identified as the most severe barrier to e-procurement implementation (mean = 4.40; SD = 0.99; t = 19.289; $p < 0.05$), rejecting H_{03}. Qualitative evidence further disclosed poor integration between state-level systems and the Federal Nigeria Open Contracting Portal (NOCOPO), leading to duplication of effort and inconsistent data reporting. An ICT Unit Head in Akwa Ibom stated: 'Internet connectivity is our biggest problem; without stable networks, e-procurement can't work.' These findings align with Salifu et al. (2023), who found ICT factors to be the dominant constraint in digital procurement across sub-Saharan African public institutions. From a UTAUT perspective, deficient facilitating conditions inadequate infrastructure and organizational support directly constrain adoption behavior.

4.5 Objective IV: Cost-Effectiveness

Table 5: One-Sample T-Test — Cost-Effectiveness (Objective IV)

Variable	Mean ($\bar{x}$	Std. Dev.	t-value	p-value
Cost-Effectiveness	4.55	0.71	29.042	0.000

Source: Researcher's Field Survey (2025).

E-procurement was found to significantly enhance cost-effectiveness (mean = 4.55; SD = 0.71; t = 29.042; $p < 0.05$), rejecting H_{04}. Respondents highlighted reductions in transaction costs, paperwork, administrative overhead, and processing time. A senior procurement officer observed: With e-bidding, evaluation is seamless; we save both time and logistics cost.' These findings are consistent with Oladimeji and Olusegun (2018) and Abubakar (2024), who posit that e-procurement enhances value for money through streamlined tendering processes and data-driven decision-making. Increased digital competition among suppliers also contributes to improve pricing and reduced cost inflation.

4.6 Objective V: Legal and Institutional Framework

Table 6: One-Sample T-Test — Legal and Institutional Framework (Objective V)

Variable	Mean ($\bar{x}$	Std. Dev.	t-value	p-value
Legal and Institutional Framework	4.45	1.05	22.841	0.000

Source: Researcher's Field Survey (2025).

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Weak legal and institutional enforcement emerged as a statistically significant constraint on e-procurement uptake (mean = 4.45; SD = 1.05; t = 22.841; $p < 0.05$), rejecting H_{05}. Respondents indicated that state procurement laws are either outdated or silent on e-procurement provisions, allowing officials to bypass digital procedures without penalty. A procurement specialist in Rivers State noted: 'There is no state law compelling MDAs to use e-procurement, so adoption depends on who is in charge. These findings validate Institutional Theory's coercive pressure construct formal regulatory mandates are necessary to standardize procurement behavior and align with Jibrila (2024), who attributes procurement inefficiencies in Nigeria to weak regulations and poor oversight.

4.7 Summary of Hypothesis Test Results

H0	Hypothesis Statement	T-value	p-value	Decision
Ho_1	No significant difference in transparency between e-procurement and traditional MDAs	28.654	0.000	Rejected
Ho_2	Organizational culture and leadership will not significantly influence e-procurement adoption	11.952	0.000	Rejected
Ho_3	Lack of capacity building will not significantly hinder e-procurement effectiveness	19.289	0.000	Rejected
Ho_4	Cost savings from e-procurement will not be significantly higher than traditional methods	29.042	0.000	Rejected
Ho_5	Policy reforms and institutional strengthening will not significantly improve e-procurement uptake	22.841	0.000	Rejected

Source: Researcher's Field Survey (2025). $\alpha = 0.05$

5.0. CONCLUSION AND RECOMMENDATIONS

5.1. Conclusion

This study provides robust empirical evidence that e-procurement holds significant transformative potential for public procurement governance in the Niger Delta. Across all five objectives, statistically significant findings confirm that e-procurement enhances transparency and accountability, reduces transaction costs, and improves procurement efficiency. These benefits align with global best practices and substantiate the relevance of digital procurement platforms in curbing corruption and improving value for money in public expenditure.

However, the full realization of these benefits is constrained by compounding deficits: inadequate ICT infrastructure (particularly unreliable internet connectivity and weak integration with NOCOPO), limited human capacity and digital skills, organizational resistance rooted in insufficient training, and weak legal and institutional enforcement frameworks. These findings reveal that the Niger Delta's e-procurement challenge is fundamentally institutional and infrastructural rather than attitudinal — stakeholders broadly accept the value of e-procurement but lack the enabling conditions to implement it effectively.

5.2. Recommendations

Based on the findings, the following policy and operational recommendations are proposed:

First, targeted and sustained investment in ICT infrastructure including broadband expansion, reliable power supply, and hardware provisioning across MDAs is essential to create a viable technical

environment for digital procurement. The persistent integration gap between state systems and NOCOPO must be addressed through interoperability standards and dedicated technical support.

Second, comprehensive and continuous capacity-building programmes are critical. Training interventions should be structured, regular, and tailored to the varying digital literacy levels of procurement personnel, ICT officers, and administrative staff. Addressing the competency gap will directly reduce the effort expectancy barrier identified in UTAUT.

Third, robust legal and institutional reform is imperative. State-level procurement legislation must be updated to explicitly mandate e-procurement adoption, establish enforcement mechanisms, and impose sanctions for non-compliance. The Bureau of Public Procurement (BPP) should strengthen its oversight role at the sub-national level, conduct mandatory compliance audits, and promote harmonized regulatory frameworks across Niger Delta states.

Fourth, a phased implementation strategy beginning with pilot MDAs and scaling progressively accompanied by regular monitoring and evaluation mechanisms, will enable evidence-based adaptation and reduce implementation risk.

5.3. Contributions to Knowledge

This study makes four original contributions to the field. It provides rigorous empirical evidence on e-procurement benefits and challenges at the sub-national level in Nigeria, focusing on an underrepresented region. It integrates TAM, UTAUT, and Institutional Theory into a multi-theoretical framework for understanding technology-driven procurement reform in developing economies. It identifies infrastructure and human capacity as critical determinants of e-procurement success, with practical implications for policymakers and reform stakeholders. Finally, it offers a policy-relevant roadmap for state governments and MDAs seeking to transition from traditional to sustainable digital procurement platforms.

Conflict of Interest

The authors declare that no conflict of interest exist in this manuscript.

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