DIGITALISING LOCAL GOVERNMENT PROCUREMENT UNITS: PANACEA FOR EFFECTIVE PUBLIC FINANCE MANAGEMENT

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ABSTRACT

The procurement units are the central organs that ensure due process of both capital and petty expenditures are adhered to, in order to ensure efficiency, economy, accountability and transparency. But among key issues that have beclouded the unit particularly at the local level is that its process is yet to be digitalized to meet best practice. Thus, this study seeks to explore the need for digitalizing local government procurement units of Adamawa State for effective public finance management. To document the study, qualitative method particularly, the survey method was used where data was collected through questionnaires and personal interview. A multi-stage sampling procedure was applied to select a sample of 126 respondents which cut across the entire ecosystem of procurement units and finance officers in Adamawa state. Descriptive and inferential (Logit regression) statistics were used to analysed the data. The study found that digitalization of the units can reduce corruption, embezzlement of public fund, increase competitiveness among bidders, effective quality service delivery and public resources accountability. The study recommend that staff training on digitalization is required, deployment of digital facilities in the entire local governments procurement units, digital transformation of the procurement processes and units is paramount for effective public financial management.

Keywords: *Digitalization, Procurement, Financial Management, Local Government, Adamawa State*

1. Introduction

In contemporary public sector governance, Public Financial Management (PFM) stands at the core of ensuring accountability, transparency, and efficiency in the use of public resources (Nweze et al., 2024). As governments across the globe is confronted with an increasing demand for improved service delivery amidst constrained budgets, the need for innovative solutions to strengthen financial management processes has become paramount. One of such innovation is the digitalisation of procurement units, which represents a strategic

shift towards leveraging technology to enhance the integrity and performance of public procurement systems (Mangai & Ayodele, 2025). Procurement, as a critical function of public financial operations, directly influences the quality of public services, budgetary discipline, and the achievement of development objectives. Traditionally, procurement processes in many public institutions have been plagued by inefficiencies, manual bottlenecks, lack of transparency, and susceptibility to corruption and mismanagement. These challenges often result in delays, cost overruns, and suboptimal allocation of public funds. Hence, digitalising procurement units through the adoption of e-procurement platforms, automated workflows, real-time data analytics, and integrated financial management information systems will offers a promising pathway to mitigate these issues (OECD, 2025; World Bank, 2018).

The digital transformation of procurement functions aligns with broader reforms in PFM aimed at enhancing fiscal discipline, value for money, and operational efficiency. Digital procurement tools facilitate better planning, competitive bidding, contract management, and supplier performance tracking, while also providing audit trails that support accountability. Meanwhile, digitalisation promotes open government by making procurement data accessible to citizens, thereby strengthening public trust in financial governance (OECD, 2024; World Bank, 2024).

Despite the acknowledged benefits, the transition to digital procurement is not without challenges. Issues such as technological infrastructure gaps, change resistance, capacity deficits, cybersecurity risks, and regulatory constraints can hinder effective implementation. Understanding how digitalising procurement units can contribute to effective public finance management, and identifying enablers and barriers to this transformation, is crucial for policy makers and practitioners seeking to modernise PFM systems.

In Nigeria, serious efforts have been made to reform the procurement system. The Budget Monitoring and Price Intelligence Unit (BMPIU)**,** popularly known as Due Process Office, was established in 2001 under the Presidency. Its mandate was to ensure that government contracts and procurements followed due process, adhered to best practices, and delivered value for money. Therefore, building on these reforms, the Public Procurement Act (PPA) was enacted in 2007, establishing the Bureau of Public Procurement (BPP) as the regulatory body to oversee and regulate public procurement in Nigeria. The PPA 2007 provided a comprehensive legal and institutional framework aimed at promoting transparency, competition, professionalism, and integrity in public procurement processes across the country (BPP, 2017; Devex, 2024; BPP, 2025).

Public finance management (PFM) is fundamental to ensuring that public resources are allocated efficiently, transparently, and accountably to achieve national development goals. Within this system,

procurement units play a critical role, as public procurement often accounts for a significant portion of government expenditure about 70% in some developing countries. However, in many jurisdictions, traditional procurement processes remain manual, paper-based, and fragmented. These outdated systems are frequently characterised by inefficiencies, lack of transparency, corruption risks, and poor value for money, undermining effective PFM (World Bank, 2020).

Digitalisation of procurement units has emerged as a promising solution to these challenges. By leveraging technology such as e-procurement platforms, integrated financial management systems, and data analytics, governments can improve procurement efficiency, reduce leakages, enhance competitiveness, and strengthen accountability. Despite the potential of digital procurement to transform PFM outcomes, many public institutions, especially in developing economies like Nigeria, have struggled with the implementation and scaling of digital procurement reforms due to infrastructural, regulatory, capacity, and institutional barriers (Uwizeyimana & Mzini, 2020).

In an effort to enhance public procurement processes and financial management Adamawa State established Adamawa State Bureau of Public Procurement (ADSBPP) through the Adamawa State Public Procurement law in 2013. By the year 2014, the State Board on Public Procurement was inaugurated to regulate procurement operations across ministries and agencies in the state. Moreover, to mitigate issues on Local Purchase Orders (LPOs)**,** verbal directives, and financial discretion by officials, leading to contractors abandoning projects post-advance payment, poor workmanship, kickbacks, inflated contracts, and lack of oversight and corrupt practices even at the Local Government Areas (LGAs) of the state, the procurement due process law was extended to all the twenty one (21) LGAs in the state (ADSBPP, 2016).

Despite the efforts made by the state to enable PFM in procurement processes, there is still a need to digitalized the procurement system for effective PFM. Even though there are empirical literature that examined procurement processes and PFM but limited on the extent to which digitalising procurement units directly contributes to the effectiveness of PFM, particularly at the local government levels where governance structures are weak, and resistance to change persists. This gap in knowledge makes it difficult for policymakers to design and implement digital procurement strategies that deliver measurable improvements in PFM outcomes. Therefore, this study seeks to examine the role of digitalising Adamawa state local government procurement units for effective public finance management.

This paper is structured into five sections, firstly, the introduction; second section is the literature review; third section covered methodology; fourth section is the result and discussion while the fifth section is the conclusion and recommendation.

2. Literature Review

2.1 Conceptual Issues

2.1.1 Public Procurement: The concept of public procurement has been defined by various scholars, institutions and financial bodies. According to Thai (2001) **"**Public procurement refers to the acquisition of goods, services, and works by government and public sector institutions using public funds. It encompasses the entire process of acquiring goods, services, and works, covering functions from identification of needs, preparation and award of contracts, to contract administration and final payment*."* While Arrowsmith (2010) defined *"*Public procurement as the process by which public authorities, such as government departments or local authorities, purchase work, goods or services from companies." Moreso, according to World Bank (2016) "Public procurement is the process by which governments and other publicly funded entities acquire goods, works, and services needed to implement projects." The OECD (2007) explained that "Public procurement refers to the purchase by governments and state-owned enterprises of goods, services and works. It represents a significant part of the economy and is an important function of government for ensuring the delivery of goods and services." Furthermore Hunja (2003) defined "Public procurement is the process through which public sector institutions obtain goods, works, and services required for the performance of their functions." Likewise, European Commission (2015) summarised "Public procurement as a process used by public authorities to buy works, goods or services from companies through contracts." In view of these various definitions, this study sees public procurement as a systematic act ranges from identification of needs, preparation and award of contracts, to contract administration and final payment of purchasing work, goods or services by public authorities and sectors from companies using public funds.

2.1.2 Public Financial Management (PFM)

The concept of PFM according to Allen, Hemming and Potter, (2013), refers to the set of laws, systems, processes, and institutions used by governments to mobilize revenue, allocate public funds, undertake public spending, account for funds, and audit results. It aims at ensuring that public resources are used efficiently, effectively, and transparently to achieve policy goals and development outcomes. Meanwhile, Cangiano, Curristine, and Lazare (2013) refers PFM to the set of laws, rules, systems, and processes used by governments to mobilize revenue, allocate funds, undertake spending, account for funds, and audit results." In addition, World Bank (2013) said Public financial management is concerned with how governments manage public resources through budgeting, expenditure, accounting, and auditing, in order to improve the delivery of public services." Furthermore, Lienert (2003) said "PFM includes all aspects

of resource mobilization and expenditure management in government, encompassing resource forecasting, budgeting, expenditure control, accounting, reporting, and auditing."

Moreover, Andrews (2010) explained "Public financial management refers to the system by which financial resources are planned, directed, and controlled to enable and influence the efficient and effective delivery of public service goals." Finally, OECD (2018) said "Public financial management covers the processes, procedures, and institutions through which public resources are planned, directed, and controlled to support fiscal discipline, strategic allocation of resources, and efficient service delivery." Therefore, capsolating these various contributions on the meaning of PFM, this study refers PFM as system by which financial resources are planned, directed, and controlled to enable fiscal discipline and efficient and effective delivery of public service goals.

2.2 Empirical Review

Digital procurement which is the use of information and communication technologies (ICTs) to manage public procurement processes has gained attraction globally for its potential to strengthen public financial management (PFM) through transparency, efficiency, and fiscal discipline. Many scholars and relevant authorities have empirically justified the fact that digital procurement has gone a long way in strengthen financial management in both public and private sectors which are examined as follows.

First and foremost, Omweri (2025) carried out a study titled "E-Government and Public Procurement: A Scoping Review of Technologies, Institutional Readiness, and Governance Challenges." The study used a scoping review methodology, analyzing 48 peer-reviewed articles and policy documents globally. The findings indicate that digital procurement technologies such as e-procurement platforms, AI, and blockchain significantly enhance transparency, accountability, and efficiency in procurement processes. These improvements strengthen governance outcomes and contribute to more effective management of public finances, although challenges such as infrastructural gaps and institutional resistance persist.

In another study by Osei-Dwomoh and Forkuo (2025) titled "Digital Transformation of Public Financial Management in Ghana and Developing Economies: A Systematic Review of Accountability, Transparency, and Efficiency." Using the PRISMA systematic review approach, the study synthesized empirical evidence from multiple countries. The findings revealed that digital tools (including e-procurement systems) enhance budget credibility, streamline procurement processes, and improve fiscal discipline through real-time monitoring and data integration. The study concludes that digital procurement is a key driver of improved PFM outcomes, particularly in developing economies.

Meanwhile, Musah, James, Asiedu-Ampomah, and Koomson (2025) conducted a study also titled "The Impact of Electronic Procurement on Public Sector Accountability in Ghana." The study used a quantitative approach, sampling 200 respondents from public institutions in Accra and applying descriptive statistics and regression analysis. The findings revealed that e-procurement systems—particularly e-tendering and e-supplier management—significantly enhance transparency and accountability in procurement processes, thereby strengthening fiscal discipline and improving public financial management systems.

In addition, Nchabeleng and Ncube (2025) conducted a study titled "An Investigation on the Factors Affecting the Adoption of E-Procurement Systems: A Focus on the Mpumalanga Provincial Treasury." The study employed a case study research design with survey data collected from public sector officials. The findings revealed that the adoption of digital procurement systems improves operational efficiency, reduces procurement irregularities, and enhances compliance with financial regulations, thereby promoting effective public financial management.

Furthermore, OECD (2025) in its report "Government at a Glance 2025" employed cross-country survey analysis across OECD and partner countries. The findings show that the integration of e-procurement systems with broader public financial management systems improves efficiency, reduces administrative burdens, enhances transparency, and minimizes errors through real-time data exchange. The study also found that digital procurement supports better budget alignment and strengthens accountability mechanisms in public finance systems.

Moreso, Egwim, Dike, and Nmecha (2024) conducted a study titled *"*Adapting the E-Procurement Process from the Private and Public Sector: A Comprehensive Overview" in Nigeria (Imo State). The study adopted a qualitative and descriptive approach, reviewing procurement practices across sectors. The findings revealed that digital procurement systems significantly improve efficiency, transparency, and cost-effectiveness by automating procurement processes, reducing delays, and enhancing supplier competition. The study further showed that e-procurement contributes to better financial control and accountability, which are critical components of effective public financial management.

Furthermore, Abubakar (2024) conducted a study titled "Impact of E-Procurement Implementation on Supply Chain Performance: A Case Study of Nigeria." The study adopted a desk research methodology

using secondary data from published sources. The findings revealed that e-procurement enhances supply chain efficiency, reduces procurement cycle time, and improves transparency and accountability in public sector transactions. The study further established that digital procurement systems strengthen financial control mechanisms, thereby contributing to improved public financial management outcomes.

So also Isango (2024) carried out a study titled "An Assessment of the Impact of E-Procurement Practices on Organizational Performance in Tanzania." The study was conducted at the National Housing Corporation using a descriptive research design, with data collected from 45 employees and analyzed using correlation and regression techniques. The findings indicated that e-procurement practices such as e-tendering and e-payment significantly improve efficiency, transparency, and cost-effectiveness, all of which are essential for effective public financial management.

In Nigeria, Olayemi and Aluko (2020) assessed how digital procurement influences budgetary control in federal institutions. Their study employed regression analysis and showed that digital procurement systems significantly improved the alignment of procurement with budget estimates and enhanced timely budget execution. Furthermore, a study by Asenso-Boakye and Asiedu (2019), they conducted an empirical study in Ghana to assess the impact of electronic procurement systems on budget execution efficiency. The study found that automated procurement processes led to shorter procurement cycles, cost savings, and improved financial reporting, thereby enhancing budget discipline and planning.

Moreso, Basheka and Tembo (2017) empirically investigated the relationship between e-procurement and corruption control in Uganda. Their results indicated a strong negative correlation between e-procurement adoption and incidences of procurement-related corruption, thereby contributing to better control over public funds. In the same vein, a study conducted in Kenya by Mutua and Kwasira (2016) examined the effect of e-procurement implementation on financial accountability in public institutions. Their findings showed that digitization reduced instances of fraud, enhanced documentation accuracy, and improved compliance with procurement laws—all crucial to sound PFM.

Another study by OECD (2016) using panel data from member countries evaluated the impact of procurement transparency tools (e.g., online tendering platforms) on public financial control. The results demonstrated that transparent procurement processes enhance budget credibility and minimize off-budget expenditures. Eadie et al. (2015) conducted a cross-country empirical analysis in Sub-Saharan Africa and

discovered that countries that adopted digital procurement platforms had better financial control mechanisms, including enhanced cash flow management and reduced contract variations.

Moreover, in Nigeria, Ameyaw et al. (2012) investigated procurement practices in public institutions and found a strong correlation between procurement integrity (such as adherence to bidding procedures) and financial performance metrics like cost savings and timely payments. Their research highlighted the importance of enforcement of procurement laws. In addition, Ngugi and Mugo (2012) evaluated the effect of electronic procurement systems on financial accountability in Kenyan government ministries. The empirical findings demonstrated that digital procurement improved audit trails and reduced irregular spending, helping to align spending with approved budgets.

Eyaa and Oluka (2011) on public procurement practices in Uganda found that the adoption of e-procurement positively influenced cost efficiency and reduced leakages in public expenditures. This study concluded that digitizing procurement contributes to effective PFM by reducing corruption and strengthening auditability. In a study conducted in Uganda, Basheka and Mugabira (2008) empirically evaluated the linkage between procurement planning and financial performance in public institutions, it revealed that poor procurement planning significantly leads to budget overruns and fiscal indiscipline.

So also Piga and Thai (2007) explored how procurement frameworks support fiscal discipline across OECD countries. Their findings, based on cross-country data, revealed that countries with centralized procurement systems tend to report lower fiscal deficits and better expenditure control. Moreover, In Kenya, Kipchilat (2006) conducted a study examining the impact of public procurement reforms on budget execution and found a significant improvement in procurement cycle times and financial accountability. The research emphasized the role of procurement oversight institutions in ensuring proper budget utilization. Lastly, Thai (2001) argued that a sound procurement system ensures proper use of public funds by enforcing compliance with budgetary regulations and transparency mechanisms.

In view of these empirical review showcasing that digital procurement systems are critical enablers of effective public financial management through enhancing transparency, reducing corruption, improving budget execution, and strengthening fiscal accountability. As more governments adopt digital tools, continued empirical evaluation remains vital for optimizing procurement strategies to support fiscal performance most especially at the local Government levels.

2.3 Conceptual Framework

The study has intricately conceptualized the digitalisation of the Local Government Procurement Units and Public Financial Management in the following order. Digitalisation of the Local Government Procurement Units which stands as the Independent Variable could be in form of making the units using E-procurement systems, automated tendering and bidding, digital contract management, use of real-time data analytics, and having integrated financial management systems. Having these will improve the procurement processes in terms of transparency, efficiency, accountability, public trust and competitiveness.

Meanwhile, it will invariably enhance the public finance management by getting the true value for money, efficiency in resource allocation, expenditure control, reduced corruption/leakages, and better service delivery. However, all these depend on institutional capacity of the organisation, availability of ICT infrastructure, staff digital skills and applicability of its legal framework. This has been diagrammatically presented in Figure 2.1

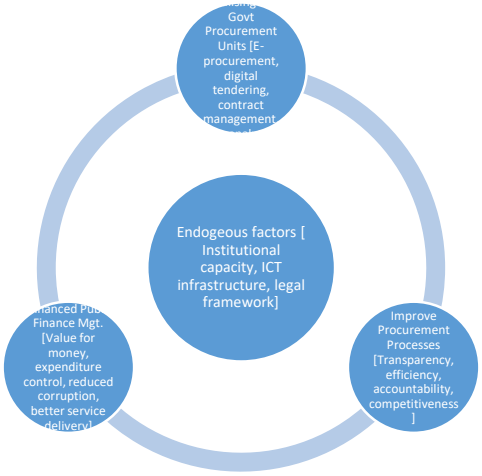

Figure 2.1: Public Procurement Digitalisation and Effective Public Finance Management Framework

3. Methodology

Both qualitative and quantitative research method were used in the course of this study. Multi-stage sampling was adopted comprising a purposive sampling and simple random sampling where by two (2) procurement officers, two (2) budget and finance officers and two (2) contractors were purposely selected

from each local government of Adamawa State, forming a total 126 respondents. Purposive sampling was adopted in this study because it allows the researcher to deliberately select respondents who possess relevant knowledge, experience, and involvement in the subject matter under investigation. Unlike probability sampling techniques, which focus on generalization, purposive sampling is appropriate when the study seeks in-depth and context-specific information from a targeted group. In the context of digitalised procurement for public financial management, procurement officers, finance officers, project managers, and key stakeholders are always involved in the processes. Hence, they have the requisite expertise and firsthand experience to provide meaningful and reliable data. Therefore, the study select them based on their roles and involvement for ensuring data collected is rich, relevant, and insightful. A well-structured questionnaire was used in soliciting information from the respondents. This questionnaire was administered with the help of kobo-collect. Descriptive and inferential (Logit regression) statistics were used in analysing the data.

3.1 Model Specification

Binary logistic regression model was employed to examine the effects of digital procurement on public financial management in the study area. The model was adopted from the works of Ahmed et al (2019) with little modifications. The logit regression model (logit model) can be applied to a wider series of research conditions than discriminate analysis. According to Wooldridge, (2009), logit is the natural logarithm of the odds (log odds) which indicates the probability of falling into one of two categories on some variable of interest. According to Harrell (2001), binary logit has only two categories in the response variable, that is, occurrence of an event B and non-occurrence of an event B. It shows how a set of predictor (explanatory) variables (X's) are related to a dichotomous response variable Y(ln (Pi/1 – Pi). The dichotomous response variable Y=1 denotes the occurrence of the event of interest while Y=0 denotes non-occurrence of the event. The dummy variables, also known as indicators and bound variables, characterize dichotomous responses. In this study, since only two options were available, namely "Digital Procurement improves PFM" or "Digital procurement doesn't improves PFM" a binary model was set up to define Y=1 for situation where the response in favour of digital procurement and Y=0, not in favour of digital procurement. Supposing that **X** is a vector of explanatory variables and **P** is the probability that Y=1, two probabilistic relationships as stated by Wooldridge (2009) can be considered as follows:

$$P(Y=1) = \frac{e^{Bx}}{1+e^{Bx}} \quad 3.1$$

$$P(Y=0) = 1 - \frac{e^{Bx}}{1+e^{Bx}} = \frac{1}{1+e^{Bx}} \quad 3.2$$

Both equations present the outcome of the logit transformation of the odds ratios which can alternatively be represented as:

$$\text{Logit } [\emptyset(x)] = \text{Log } [\frac{\emptyset(X)}{1-\emptyset(X)}] = \propto + \beta_1 x_1 + \ldots\ldots. \beta_k x_k \quad 3.3$$

Thus, allowing its estimation as a linear model for which the following definitions apply:

θ = logit transformation of the odds ratio; $\propto$ = the intercept term of the model; β = the regression coefficient or slope of the individual predictor (or explanatory) variables modeled and; Xi = the explanatory or predictor variables comprises of all the independent variables (Reduced Corruption, Reduced Embezzlement, Increases Competition, Increase Accountability, quality Service Delivery, Available ICT Infrastructures, Institutional Capability and Legal Framework).

The logit regression in this study can be specified as:

$$Yi = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \ldots.. \beta_n X_n + U_k \quad 3.4$$

4. Result and Discussion

This section covers the discussion on the socio-economics characteristics of the respondents as well as the Effects of Public Digital Procurement on Public Financial Management in local government areas of Adamawa State, Nigeria. Out of the 126 respondents established as the sample size, all the questionnaires were dully filled and successfully retrieved, thus having a response rate of 100 per cent which is adequate for the analysis.

4.2 Socio-Economic Characteristics of Respondents

Table 4.1: Respondents Qualifications and Positions

Details	Proc. Officers	Budget/Finance Officers	Contractors	Total
	Freq. (%)	Freq. (%)	Freq. (%)	Freq. (%)
Diploma/NCE	2(1.59)	11 (8.73)	5 (3.97)	18 (14.29)
HND/Degree	38 (30.16)	25 (19.84)	28 (22.22)	92 (73.02)
M.Sc/Ph.D	2 (1.59)	6 (4.76)	9 (7.14)	16 (12.70)
Total	**42 (33.33)**	**42 (33.33)**	**42 (33.33)**	**126 (100)**

Field Survey, 2025

Table 4.1 shows a cross tabulation of respondents' qualifications and positions (responsibilities) in the study area. The result depict that majority of the respondents are highly educated with above 30.16% procurement officers, 24.6% budget/finance officers and 29.36% contractors. This implies most of the

respondents understand their respective responsibilities and thus give chance of furnishing the study with relevant information.

4.3 Awareness and Utilization of Public Procurement

Table 4.2: Respondents Knowledge on Public Procurement

Details	None	Partly	Fully
	Freq. (%)	Freq. (%)	Freq. (%)
Proc. Officers	**0 (0.00)**	**9 (7.14)**	**33 (26.19)**
Budget/Finance Officers	**5 (3.97)**	**31 (24.60)**	**6 (4.76)**
Contractors	**0 (0.00)**	**6 (4.76)**	**36 (28.57)**
Total	**5 (3.97)**	**46 (36.5)**	**75 (59.52)**

Field Survey, 2025

Table 4.2 depict the respondents' knowledgeability on public procurement, 36.5% of the respondents were partly knowledgeable and 59.52% were fully knowledgeable. This implies the respondents have much insight about their responsibilities and procurement processes. Majority of both the contractors and the procurement officers are fully knowledgeable on the procurement processes.

Table 4.3: Respondents Participation in Public Procurement

Details	Once	Twice	Severally	Total
	Freq. (%)	Freq. (%)	Freq. (%)	Freq. (%)
Proc. Officers	4 (3.17)	5 (3.97)	33 (26.19)	42 (33.33)
Budget/Finance Officers	25 (19.84)	14 (11.11)	3 (2.38)	42 (33.33)
Contractors	8 (6.35)	11 (8.73)	23 (18.25)	42 (33.33)
Total	**37 (29.37)**	**30 (23.81)**	**23 (46.83)**	**126 (100)**

Field Survey, 2025

Table 4.3 also depicts respondents' rate of participation in public procurement. The result shows that majority of the procurement officers and contractors have participated severally in procurement processes. Only budget/finance officers have seldom participated. This could be as a result of not being directly assigned as part of their schedules. By this outcome, it further means that the respondents have practical knowledge of the procurement process. This can also be visualized in Figure 2.2

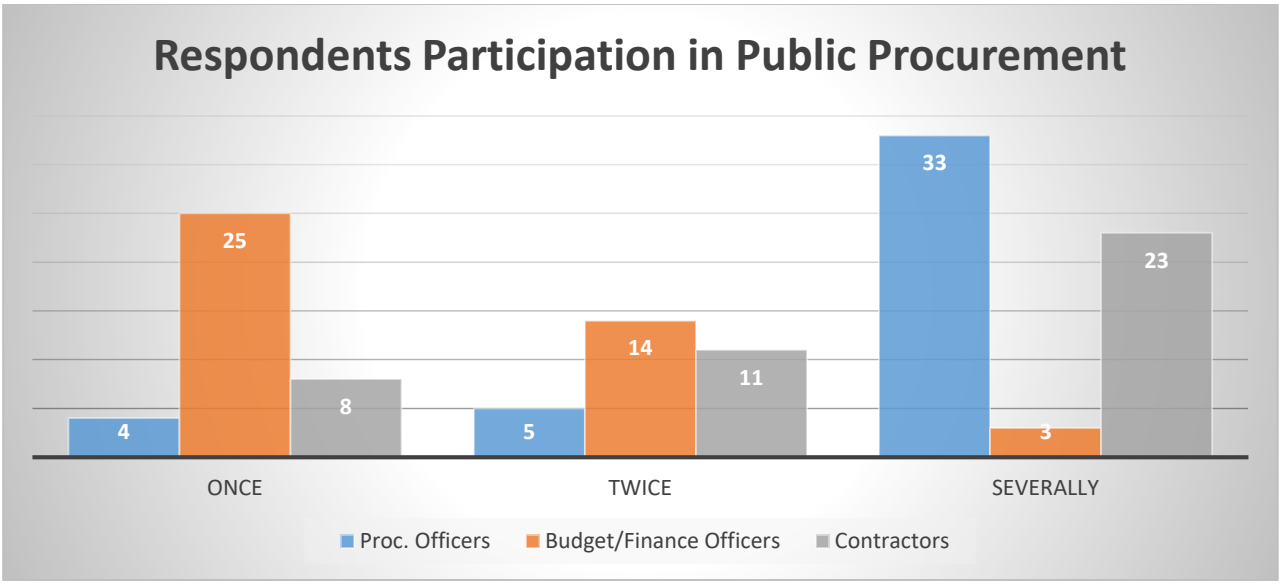

Figure 2.2 : Respondents Participation in Public Procurement
Source: Field Survey, 2025

Figure 2.2 depicts the result on Table 3, it shows the categorical participation of respondents in public procurement processes. Majority of the procurement officers participated in public procurement in their respective local government procurement units. However, budget/finance officers seldom involve in the procurement processes. Moreover, 18% of the contractors also reported they severally participated in public procurement activities. This implies that the respondent's response in this study will be relevant base on the previous knowledge on procurement activities and participation.

Table 4.4: Due Process in Public Procurement

Responses	Frequency (%)
Never	15 (11.90)
Occasionally	66 (52.38)
Often	39 (30.95)
Always	6 (4.76)
Total	**126 (100)**

Field Survey, 2025

Due process is hallmark of public procurement initiative, however, the result on table 4.4 shows that more than 50% of the respondents reported that it is occasionally adhered to and about 11% had not been adhering to the due process law in some of their public procurement activities. However, about 5% of the respondents reported that they are adhering to due process rule always. This implies that there is a need

of reinforcing due process rule in the local government areas of Adamawa state. The result on table 4.4 is also depicted on a bar-chart in figure 4.3.

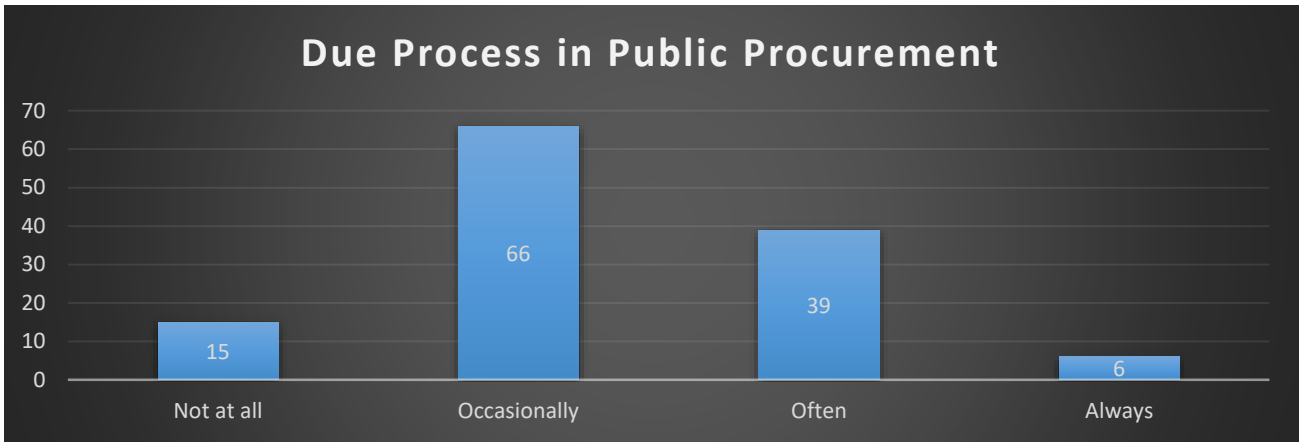

Figure 4.3 Due Process in Public Procurement

Field Survey, 2025.

Table 4.5: Respondents' Acquisition of Digital Skills and Participation in Digital Procurement Processes

	Acquisition of Digital Skills	Participation in Digital Procurement
Response	**Frequency (%)**	**Frequency (%)**
Never	32 (25.40)	83 (65.87)
Partially	71(56.35)	29 (23.02)
Completely	23 (18.25	14 (11.11)
Total	**126 (100.00)**	**126 (100.00)**

Field Survey, 2025

From Table 4.5, the result shows that more 25% and 65% never acquired digital skills nor participated in digital procurement process. Only 56.35% have partial skills on digital procurement and 23% also have partially participated in digital procurement. This implies that the respondents in the study area are lacking digital skills on procurement processes and requires a complete involvement of relevant bodies to participate in digital procurement.

Table 4.6: Operationalization and Availability of Digital Procurement Facilities

Details	Operationalization of Digital Procurement Frequency (%)	Availability of Digital Procurement Facilities Frequency (%)
Never	114 (90.48)	121 (96.03)
Partially	12 (9.52)	4 (3.17)
Completely	0 (0.00)	1 (0.79)
Total	**126 (100.00)**	**126 (100.00)**

Field Survey, 2025

The result shows more than 90% of the study area are not operating digital procurement likewise, the digital facilities are not available in the study area. Since more than 96% of the respondents reported that they don't have digital facilities in the place of their work, this could definitely be the reasons why operating a digital procurement is impossible.

4.4 Effects of Public Digital Procurement on Public Financial Management

Table 4.7: Logit Regression on Effects of Public Digital Procurement on Public Financial Management

Digital Procurement	Coefficient	Odds ratio	Std Error	Z-value	P- value
Constant	48.542	5.142	10.654	4.556	0.0387
Reduced Corruption (X_1)	4.563	2.547	3.471	1.315	0.0022
Reduced Embezzlement (X_2)	1.371	1.121	1.227	1.117	0.0321
Increases Competition (X_3)	2.836	3.152	3.932	0.721	0.0036
Increase Accountability (X_4)	0.093	1.782	0.897	0.104	0.0008
quality Service Delivery (X_6)	0.613	0.852	0.867	0.001	0.0000
Available ICT Infrastructures (X_7)	3.132	4.159	1.854	1.689	0.0462
Institutional Capability (X_8)	2.123	3.471	1.857	1.143	0.0309
Legal Framework (X_9)	4.189	2.342	3.912	1.071	0.0031
Prob > chi^2 = 0.000					
Log likelihood = - 67.26					
Pseudo R^2 = 0.762					
No. of Obs = 126					

Source: Author's Computation, 2025

From Table 4.7, reducing corruption is statistically significant at 5%, and there is a strong positive effect that reducing corruption increases odds of effective PFM by 2.547. Likewise, reducing embezzlement is statistically significant at 5% with moderate positive effect, and it increases the odds of effective PFM by 1.121. Moreover, increasing competition is positively and statistically significant at 5%. It also increases the odds of effective PFM by 3.152. Meanwhile, increased accountability is also statistically significant at 5% and a unit increase of accountability as a result of digitalizing procurement increases the odd of

effective PFM by 0.782. More so, one unit change in quality service delivery as a result of digitalizing procurement processes, will increase the odds of effective financial management by 0.852 and is statistically significant at 1%. In addition, availability of ICT Infrastructure is statistically and positively significant at 5%. Hence, a unit change of availability of ICT Infrastructure as a result of digitalization increase the odds of effective PFM by 4.159. Lastly, Institutional capability and legal framework are statistically and positively significant at 5%. A unit change in them as a result of digitalization will increase the odds of effective PFM by 3.471 and 2.342 respectively.

The regression examines how various aspects of public digital procurement influence public financial management (PFM), using a logistic regression model. The Prob > chi^2 = 0.000 means the overall model is statistically significant at 1% level, meanwhile, the independent variables jointly explain variations in the dependent variable. While, Pseudo R^2 = 0.762 indicates the model explains about 76.2% of the variation in PFM outcomes.

5. Conclusion and Recommendations

The result shows that majority of the procurement officers and contractors have participated in procurement processes multiple times. However, more than 50% of the respondents reported that they occasionally adhered to due process rule in their public procurement activities. Furthermore, the study area is lacking digital skills on procurement processes necessitating full involvement of concern bodies to participate in digital procurement.

Additionally, over 90% of the respondents in the study area are not operating digital procurement likewise, the digital facilities are not available in the study area. The study also found that reduced corruption, reduced embezzlement, increases competition, increase accountability, quality Service Delivery, available ICT Infrastructures, institutional capability, and legal Framework are statistically significant factors. Thus, implying that a unit change as a result of digital procurement increase the odd of PFM in the study area.

In conclusion, the study demonstrates that digitalization procurement units help reduce corruption, embezzlement of public fund, increase competitiveness among bidders, effective quality service delivery and public resources accountability. Based on the findings, the study recommends the following

i. Staff training on digitalization is required on monthly or quarterly basis as this will improve their digital skill and thus compete with peers across the globe
ii. Deployment of digital facilities in the entire local governments' procurement units,
iii. Digital transformation of the procurement processes and units is paramount for effective public financial management.

REFERENCES

Abubakar, A. (2024). Impact of e-procurement implementation on supply chain performance: A case study of Nigeria. *Global Journal of Purchasing and Procurement Management*, 3(1), 14–27.

Allen, R., Hemming, R., & Potter, B. H. (2013). *The international handbook of public financial management*. Palgrave Macmillan.

Ameyaw, C., Mensah, S., & Osei-Tutu, E. (2012). Public procurement in Ghana: The implementation challenges to the Public Procurement Law 2003 (Act 663). *International Journal of Construction Supply Chain Management*, 2(2), 55–65.

Andrews, M. (2010). Good government means different things in different countries. *Governance, 23*(1), 7–35. https://doi.org/10.1111/j.1468-0491.2009.01456.x

Arrowsmith, S. (2010). *The law of public and utilities procurement* (2nd ed.). Sweet & Maxwell.

Asenso-Boakye, S., & Asiedu, E. (2019). Electronic procurement and budget execution efficiency in Ghana's public sector. *Journal of Public Procurement and Contract Management*, 3(2), 21–38.

Asian Development Bank. (2021). *Reimagining digital procurement for the public sector: E-procurement transformation and capacity development*. https://www.adb.org/publications/reimagining-digital-procurement

Basheka, B. C., & Mugabira, M. I. (2008). Measuring professionalism variables and their implications to procurement outcomes in Uganda. *The Professional Journal of Procurement*, 1(1), 45–60.

Basheka, B. C., & Tembo, F. M. (2017). Public procurement reforms and e-governance in Uganda. *International Journal of Public Sector Management*, 30(4), 345–360. https://doi.org/10.1108/IJPSM-07-2016-0137

Cangiano, M., Curristine, T., & Lazare, M. (Eds.). (2013). Public financial management and its emerging architecture. *International Monetary Fund.*

Eadie, R., Perera, S., Heaney, G., & Carlisle, J. (2015). The impact of e-procurement on the effectiveness of public sector financial management in Sub-Saharan Africa. *Public Money & Management*, 35(3), 175–182. https://doi.org/10.1080/09540962.2015.1027492

Egwim, P. U. I., Dike, B. U., & Nmecha, M. I. (2024). Adapting the e-procurement process from the private and public sector: A comprehensive overview. *Alvan Journal of Social Sciences.*

European Commission. (2015). Public procurement: A study on administrative capacity in the EU. *Publications Office of the European Union*. https://op.europa.eu/en/publication-detail/-/publication/

Eyaa, S., & Oluka, P. N. (2011). Explaining non-compliance in public procurement in Uganda. *International Journal of Business and Social Science*, 2(11), 35–44.

Hunja, R. R. (2003). *Obstacles to public procurement reform in developing countries*. In S. Arrowsmith & M. Trybus (Eds.), Public procurement: The continuing revolution (pp. 13–22). *Kluwer Law International.*

Isango, E. (2024). An assessment of the impact of e-procurement practices on organizational performance in Tanzania. *NG Journal of Social Development*, 14(2), 237–241.

Kipchilat, G. (2006). An evaluation of the impact of the public procurement regulations on procurement in Kenyan public universities (Unpublished master's thesis). Egerton University, Njoro, Kenya.

Lienert, I. (2003). A comparison between two public expenditure management systems in Africa. *International Monetary Fund.* https://doi.org/10.5089/9781451858751.001

Musah, A., James, A. P., Asiedu-Ampomah, M., & Koomson, F. (2025). The impact of electronic procurement on public sector accountability in Ghana. *Journal of Governance and Accountability Studies*, 5(1), 63–77.

Mutua, C. N., & Kwasira, J. (2016). Influence of e-procurement on financial performance of state corporations in Kenya. *International Journal of Economics, Commerce and Management*, 4(5), 476–493.

Nchabeleng, L. S., & Ncube, E. D. (2025). An investigation on the factors affecting the adoption of e-procurement systems: A focus on the Mpumalanga Provincial Treasury. *Journal of Transport and Supply Chain Management*, 19, a1199.

Ngugi, J. K., & Mugo, H. W. (2012). Internal factors affecting procurement process of supplies in the public sector: A survey of Kenya government ministries. *Journal of Public Procurement and Contract Management*, 2(3), 67–84.

Olayemi, T. A., & Aluko, M. A. (2020). E-procurement and budgetary control in Nigeria's public institutions. *Nigerian Journal of Management Sciences*, 8(1), 104–116.

Omweri, F. S. (2025). E-government and public procurement: A scoping review of technologies, institutional readiness, and governance challenges. *Asian Journal of Economics, Business and Accounting*, 25(12), 530–556.

Organisation for Economic Co-operation and Development (OECD). (2016). *Preventing corruption in public procurement*. OECD Publishing. https://doi.org/10.1787/9789264265800-en

Organisation for Economic Co-operation and Development (OECD). (2018). *Domestic revenue mobilisation: A new database on tax levels and structures in Africa*. OECD Publishing. https://doi.org/10.1787/9789264308187-en

Organisation for Economic Co-operation and Development (OECD). (2018). *Budgeting and public expenditures in OECD countries 2018*. OECD Publishing. https://doi.org/10.1787/budget-18-en

Organisation for Economic Co-operation and Development (OECD). (2015). *OECD principles for integrity in public procurement*. OECD Publishing. https://doi.org/10.1787/9789264201389-en

Organisation for Economic Co-operation and Development (OECD). (2007). *Integrity in public procurement: Good practice from A to Z*. OECD Publishing. https://doi.org/10.1787/9789264027514-en

Organisation for Economic Co-operation and Development- OECD. (2025). *Government at a glance 2025*. OECD Publishing.

Organisation for Economic Co-operation and Development. (2016). *Preventing corruption in public procurement*. OECD Publishing. https://doi.org/10.1787/9789264265800-en

Osei-Dwomoh, E., & Forkuo, G. O. (2025). *D*igital transformation of public financial management in Ghana and developing economies: *A systematic review of accountability, transparency, and efficiency*. SSRN.

Piga, G., & Thai, K. V. (2007). *Advancing public procurement: Practices, innovation and knowledge-sharing*. PrAcademics Press.

Thai, K. V. (2001). Public procurement re-examined. *Journal of Public Procurement, 1*(1), 9–50. https://doi.org/10.1108/JOPP-01-01-2001-B002

Uwizeyimana, D. E., & Mzini, L. B. (2020). E-procurement implementation challenges in developing countries: A literature review. *Journal of Contemporary Management, 17*(1), 189–215. https://doi.org/10.35683/jcm20028.50

World Bank. (2013). Public financial management reforms in post-conflict countries: *Synthesis report*. World Bank. https://openknowledge.worldbank.org/handle/10986/13142

World Bank. (2016). Benchmarking public procurement 2016: *Assessing public procurement regulatory systems in 77 economies*. World Bank. https://openknowledge.worldbank.org/handle/10986/23825

World Bank. (2020). Benchmarking public procurement 2020: *Assessing public procurement regulatory systems in 180 economies*. World Bank Group. https://openknowledge.worldbank.org/handle/10986/33598