

Original Research Paper

Evaluating Public Procurement's Challenges in Nigeria's Construction Industry

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Abstract: The article explores the challenges faced by public project management in Nigeria, focusing on the procurement process and its potential improvements. The research used a survey and descriptive design, collecting data from 125 procurement offices and federal Ministry of Works professionals. The study found that poor risk management, dark purchasing, corruption, and lack of transparency were the top issues, with a mean score of 4.96. The study also found that the procurement process and industry, economy, and project quality had a joint influence on the dependent variables. The study rejected the null hypothesis, stating that the procurement process significantly impacts the industry, economy, and project quality in Nigeria. The research recommends implementing measures to improve the procurement process and punishing offenders to reduce fraud. The study concludes that the procurement process in Nigeria significantly impacts the industry, economy, and project quality.

Keywords: Construction, Project Management, Project Quality, Public Procurement.



1. Introduction

Public procurement professionals have faced and will continue to encounter numerous difficulties in developed and developing nations. Public procurement professionals in each nation face unique obstacles, as well as challenges that are similar to those faced by their international colleagues but to a different degree. Each nation has its own unique economic, social, cultural, and political context. Despite being one of the sectors with the quickest growth since its inception, project management still faces difficulties [1]. The Author in [2] provides evidence in favor of the aforementioned claim by emphasizing how businesses' ability to undertake strategic initiatives, spur change, and produce innovation is significantly threatened by the lack of competent talents and resources in project management. According to [3], a project manager needs to understand the structure and culture of the organization the project is a part of in order to manage it effectively.

According to [4], successful project execution is useless without a reliable set of procurement procedures. According to [3], a project manager needs to understand the structure and culture of the organization the project is a part of in order to manage it effectively. The scholar in [5] concur, citing procurement as a crucial step in project execution to guarantee that project deliverables and objectives will match stakeholder expectations; this cannot be done without strategic procurement methods.

Nigeria is a developing country; according to [6], the government is still working to complete the fundamental infrastructure requirements. Since the country is aiming to be among the top economies in the world by 2030 [7], having an effective, transparent, and fraud-free public procurement strategy developed based on a well-structured legal framework could be a catalyst for achieving such a mission. According to [8], a country's economic development is inversely correlated with the level of physical infrastructure that is available. Infrastructures, which mostly consist of physical buildings and facilities, are regarded to be essential building blocks for boosting economic growth and a country's prosperity.

Due to widespread fraudulent public procurement practices and conflicts of interest, public procurement reforms are required in Nigeria. This is the only reason for reforming public procurement processes in the majority of countries that have undergone the public procurement transformation process [9]. By eliminating the high level of bad governance, irregularities in public procurement, fraud, and similar corrupt practices throughout the public sector generally, the goal is to improve the country's economic standing [7][10][11]. The PPA 2007's requirements and the procurement rules published under the Act are in reality rigorous enough to clean up the high level of anomalies among procurement stakeholders, particularly in the procurement of building projects.

Governments can save money over time by using public procurement to negotiate better prices on goods and services. By giving every company a chance to compete in the market, public procurement may also be utilized to advance equity and fairness. Supply risk, sadly, is consistently a significant obstacle in the procurement process. The most typical types of risks include market risks, potential frauds, cost, quality, and delivery hazards. Procurement managers also stay up all night worrying about compliance concerns like anti-corruption, policy adherence, and other issues. This paper examines project management issues with public procurement by identifying major challenges in Nigeria's procurement process; assessing the Impact of procurement challenges on the industry and determining the mitigation measures to procurement challenges. The work established hypotheses to guide the research. Meanwhile, the outcome of this work would be of significance to the government, public, procurement managers and other stakeholders towards efficient implementation of procurement policies and management.

2. Literature Review

2.1. Public Procurement

Public procurement describes the acquisition of products, services, and works by governments and state-owned businesses. In public procurement, private businesses are purchased by public authorities for the purpose of providing goods, services, or labor (such as construction). Public procurement, often known as government contracts, includes activities like purchasing computers for a police station, supplying residents with gas, electricity, and water, as well as constructing a hospital or a road. According to the [12], public procurement is the act of public authorities or civil service organizations making purchases with public funds.

The definition of the term "public procurement"—"public" refers to the government and "procurement" refers to "buying" or "purchasing"—speaks for itself. Therefore, public procurement may be defined as a system or process by which public organizations acquire or buy goods or services, or occasionally a combination of both [13].

Additionally, it accounts for and evaluates the proportion of needed goods and services in relation to the entire demand. It is also described by academics as an activity that involves evaluating, purchasing, and receiving goods and services. When this activity is carried out by public organizations, in their name, or with their financial support, it is referred to as public [14]. Within private businesses, the supply function is in charge of overseeing the prompt delivery of goods and services using a particular supply chain procedure that is both practical and affordable.

Government agencies and state-owned businesses purchase a vast range of goods and services from the private sector, including anything from the essential components of computers to the development and maintenance of roads and buildings. One of the most important government economic activities, public procurement accounts for a sizeable portion of GDP, which contributes to massive financial drifts that account for roughly 10-15% of GDP globally [15].

The OECD 2007 recognized it as one of the public activities that is most vulnerable to corruption. Being a significant point of contact between public and private entities, it offers both players several opportunities to divert government funding for their purposes [16]. Their spending to deliver services and purchases from private businesses accounts for about 40–50% of the various economies across the world. While other growing economies are anticipated to spend up to 80% of their economies, Singapore spends only 18% of its GDP.

Even though public procurement is crucial, it has received less attention and research to date than private business procurement, while sharing the same meaning and concepts in the context of scientific phenomena [17]. Despite the fact that both categories must buy goods and services, they differ from one another despite having comparable laws and regulations [18]. The relationship between public and private procurement is regarded as the primary distinction between the two [13]. In order to satisfy the obligations of government toward society, public procurement also carries out the responsibility of achieving social, ecological, and supplemental benefits in their procurement [17].

Procurement process challenges

The statement "...many of the problems encountered in public procurement in Nigeria relate to the implementation of the system rather than the system itself" is true, according to the results of the [19]. Scope of work is a crucial part of every project planning and its deficiency would automatically affect the direction and efficient progress. Also, involving the stakeholders can reposition the proper scope, and reduce favouritism, mispriorities, fraud, and corruption while improving service delivery in the public sector [20].

Furthermore, [21] identified some primary issues cumulating challenges to the procurement process as Planning and Budget Estimation; Implementation of the Strategy; Value for Money, Review of the procurement process and committee appointment. Cost, planning and relevant strategies were also identified by [22] when he asserted that organizations are having trouble obtaining the proper quality, quantity, and cost-effectiveness, which has an impact on the organization's value for money. The procurement process is still a battle to reduce cost investment. To cap it up, the challenges can be grouped into two forms; internal and external factors.

2.2. Internal Factors

Five components make up the model that [13] created in order to illustrate the scope of public procurement: policy-making and management; authorizations and appropriations; procurement regulations; procurement function in operations (processes, methods, organizational structure, and procurement workforce; and feedback. The kinds of products, services, and capital assets needed for an agency's purposes; The professionalism or caliber of the workforce in charge of procurement; The number of staff members (e.g., the proportion of procurement practitioners to contract actions) and the available funds and Organizational structure of the procurement process are internal elements that have a direct impact on the procurement process.

2.3. External Factors

The market, the legal environment, the political environment, the organizational environment, the socioeconomic environment, and other environmental elements have all presented obstacles to public

procurement practitioners throughout history. Accordingly, "public procurement practitioners must carefully assess the total cost implications and compare them to domestic costs before embarking on a foreign purchasing program" (National Institute of Governmental Purchasing, Inc., 1999). When faced with the difficult decision of choosing domestic versus foreign enterprises, public procurement practitioners are conflicted between free trade agreements and their countries' economic development/stabilization strategies.

Scenario of Public Procurement Reforms in Nigeria

Public procurement reforms involved the development and implementation of procurement legal framework and procedural regulations, the procurement process, systems and methods, as well as reforming the organizational structure and stakeholder's responsibilities [23]. The moves towards establishing public procurement regulations started in the twentieth century, and it became merely a global revolution in the public procurement sector [24]. Public procurement reforms take place virtually in almost every part of the globe covering developed and developing countries, although the extent of the reforms varies from one country to another depending on the situation that warrants its execution. The scholar in [25], also stated that the intention, willingness, adoption, attitudes, and promotion of public procurement reform initiatives exclusively rely on the local context, political system and condition of a respective country. Overcoming various procurement irregularities which embedded public procurement contracts in Nigeria was the target of the reforms [26]. Therefore in an attempt to comply with the World Bank recommendations, in June 2007 the country followed in the footsteps of other developing nations and passed legislation known as the Public Procurement Act (PPA 2007) to ensure economy, efficiency, fairness, reliability, transparency, accountability and ethical Standards in the procurement process of the public sector From the construction industry's perspective the initiative was targeted at achieving sustainable built environment by means of introducing best ethical public procurement practices, providing equal opportunity and competitive ground to bidders ensuring adequate planning and budgeting for construction project development in order to achieve value for money [27].

The PPA 2007 requires the establishment of the Bureau for Public Procurement (BPP) and the National Council on Public Procurement (NCPP) as administrative units for ensuring the implementation of the new procurement law. This is also to pave the ground for developing a legal framework and professional capacity for effective monitoring and thorough checks of all the aspects of public procurement practices within the country [27]. In addition to harmonizing existing government policies and practices regulation, the BPP has since been established while the NCPP is yet to be constituted, the two separate bodies are considered as public procurement regulatory bodies shouldered with the responsibility to issue guidelines for the conduct of public procurement in Nigeria. The failure to establish NCPP is seen by many researchers as the genesis of non-implementation of the new procurement guidelines in Nigeria since Federal capital projects have been awarded by the Federal executive council members comprising ministers and top government officials hence putting their interest at the forefront [26]. Should the NCPP be established and allowed to carry out its responsibilities with sanity as provided by PPA 2007, the influences of the Federal Executive (FEC) Council will not have any impact on project execution. To be noted that the Federal Executive Council (NEC) was established by the provisions of the Constitution of the Federal Republic of Nigeria (1999), as amended, Third Schedule, Part I, Section 153: Subsection (18 & 19). The NEC, as one of the Federal Executive bodies, has the mandate to advise the President concerning the economic affairs of the Federation, and in particular on measures necessary for the coordination of the economic planning and programmes of the various Governments of the Federation.

2.4. Construction Procurement

The scholar in [28], argue that procurement is a key factor in attaining client satisfaction and project success. The authors in [29][30] defined the International Conference of Socio-economic Researchers ICSR 2016 SERBIA Conference Proceedings Page 207 procurement as "an organizational system that assigns specific responsibilities and authorities to people and organizations, and specify how different elements of a construction project would relate". There are various construction procurement methods which hail from the need to develop strategies that will meet the client's needs in different circumstances [31].

This requirement varies from the level of client's involvement, management of risks, funding arrangements, payment regimes, type of contracts to be used, the contractor's financial commitment

and who are the Clients [30]. The procurement methods according to the literature are: Traditional, Design and Build, Build -Operate -Transfer, Management Contracting, Construction Management, Labor Only, Direct Labor, Partnering, Public-Private Partnerships, Strategic Alliances, Private Finance Initiatives, Collaborative Agreements, Concessions etc [32][33][34][35]. Research has shown that the Nigerian Construction Industry adopts all the various procurement methods in one form or another [36][37][38][39]. Even though the most prominent is the traditional method adopts the separation of the design and construction functions in project procurement.

2.5. Supply Chain Management Theory

The theory of supply chain management (SCM) served as the study's foundation. The thesis emphasizes how crucial and necessary procurement specialists are as globalization changes the nature of international purchasing. SCM is described by [40] as supply chain methods that demand comprehensive systems perspectives of the chain's linkages and collaborate effectively to produce customer satisfaction. Considering the impact of services other than procurement on business processes across many organizations, supply chain management has a broad reach [41].

Customers and other stakeholders gain value through the integration of critical business processes from the end user up to the original suppliers who provided the product(s), service(s), and essential information [42]. Therefore, costs must be reduced throughout the chain by eliminating wasteful spending and putting an emphasis on enhancing value [43][44]. SCM can be used by procurement experts to solve issues with distribution network designs, distribution strategies, information trade-offs, logistical operations, and cash flow transactions or payments [45].

Implementing supply chain activities is a component of SCM, as is managing and coordinating order sourcing and processing, as well as moving resources, data, and money around the supply chain [46][40]. According to [47], the goal of SCM is to increase supply chain partners' levels of trust and collaboration. Organizations are finding it more and more vital to rely on valued supply networks in order to compete in a global and networked economy as a result of globalization, the expansion of multinational corporations around the world, and the growing necessity for business alliances.

As a result, there is a need for skilled procurement experts who are technically proficient and have all the necessary abilities for international purchases [48]. This emphasizes the importance of procurement specialists as critical players in the supply chain; as a consequence, small and medium-sized enterprises (SMEs), businesses with a strong potential for growth, and public companies must modernize their processes to support efficient procurement.

3. Methodology

The research design employed in this research was purely survey and descriptive in nature. The use of the survey research method makes the data generated directly from respondents to be more distinct and finite. A questionnaire was used to collect information about the respondents' profile while a combination of questionnaire and oral interview were used to obtain information on the subject matter. All the data generated were subjected to descriptive statistical analysis and inferential analysis.

4. Finding and Discussion

Data obtained through the questionnaire were analyzed. The data from the respondents was examined and ranked in accordance with the strength of the effects.

Table 1 shows the rank of 10 challenges facing financial management and working capital in project execution. Poor risk management ranked 1st with a mean score of 4.96, dark purchasing, corruption and lack of transparency ranked 2nd 3rd and 4th respectively with RII of 4.89, 4.75, 4.67 respectively.

where,

- VI = Very Important
- LI = Less Important
- \bar{X} = Mean
- $\sum FX$ = Sum of all the mean
- WF = Weighted Frequency of the response
- F = Frequency of the response

Table 1. Major Challenges in the Nigerian Procurement Process

S/N	Major Challenges in the Nigerian Procurement Process	W	VI-----LI					ΣFX	\bar{X}	RANK
			5	4	3	2	1			
1	Poor risk management and mitigation	F	162	6	-	-	-	168	4.96	1 ST
		WF	810	24	0	0	0	834		
2	Dark purchasing	F	150	18	-	-	-	168	4.89	2 nd
		WF	750	72	0	0	0	822		
3	Corruption	F	132	30	6	-	-	168	4.75	3 rd
		WF	660	120	18	0	0	798		
4	Lack of transparency	F	126	30	12	-	-	168	4.67	4 th
		WF	630	120	36	0	0	786		
5	Poor internal communication	F	120	30	12	6	-	168	4.57	5 th
		WF	600	120	36	12	0	768		
6	Influencing project award	F	114	24	18	12	-	168	4.42	6 th
		WF	570	96	54	24	0	744		
7	Failure to adopt technology	F	120	6	24	18	-	168	4.35	7 th
		WF	600	24	72	36	0	732		
8	Poor documentation	F	114	6	18	24	6	168	4.17	8 th
		WF	570	24	54	48	6	117		
9	Inaccurate data	F	102	12	12	24	18	168	3.92	9 th
		WF	510	48	36	48	18	660		
10	Involvement of quacks	F	102	6	6	30	24	168	3.78	10 th
		WF	510	24	18	60	24	636		
Grand Mean								4.45		

Source: Researcher's field survey, 2023

Table 2. The Impact of Procurement Challenges on The Industry, Economy and Quality of Projects in Nigeria Using Regression Techniques

Variable	Coefficient	Std. Error	t-Statistic	Prob.
PC	1.653414	1.404414	1.248183	0.2219
INDUSTRY	9.452312	7.581012	2.247616	0.0222
ECONOMY	5.257610	6.893709	3.270861	0.0028
PROJECT QUALITY	4.230011	2.023312	2.209519	0.0355
R-squared	0.758946	Mean dependent var		4.51E+13
Adjusted R-squared	0.647003	S.D. dependent var		2.33E+14
S.E. of regression	1.88E+14	Akaike info criterion		68.74923
Sum squared resid	1.03E+30	Schwarz criterion		69.05713
Log-likelihood	-1230.486	Hannan-Quinn criter.		68.85670
F-statistic	4.099840	Durbin-Watson stat		1.455343
Prob. (F-statistic)	0.004245			

where,

- Dependent Variable : PC
- Method : Least Squares
- Date : 09/25/23
- Time : 19:50
- Sample (adjusted) : 2023
- Included observations : 6 after adjustments

The signs of some of the variable coefficients from the estimated model are totally in line with a priori expectations. The procurement process has a positive relationship and impact on industry, economy and quality of projects in Nigeria. This implies that a unit increase in good procurement processes will lead to an increase in industry effectiveness, economy and quality of projects in Nigeria.

The estimated coefficient for the industry is 9.452312, this implies that if we hold all other variables affecting the procurement process constant, a unit increase in the good procurement process will lead to a 9.452312 increase in the industry on average in terms of efficiency and output. Likewise, the estimated coefficient of the economy is 5.257610 which implies that a unit increase in the good procurement process will lead to a 5.257610 increase in the economy on average in terms of revenue. More so, from the result, the estimated coefficient for quality projects is 4.230011 which implies that a unit increase in good procurement process will lead to a 4.230011 increase in delivery of projects on average in terms of quality.

The coefficient of determination R^2 from the regression result, the R^2 is given as 0.758946 this implies that 75.8946% of the industry, economy and quality of projects in Nigeria is being explained by the application of good procurement process which also positively affects output, revenue generation and good quality of projects on the average.

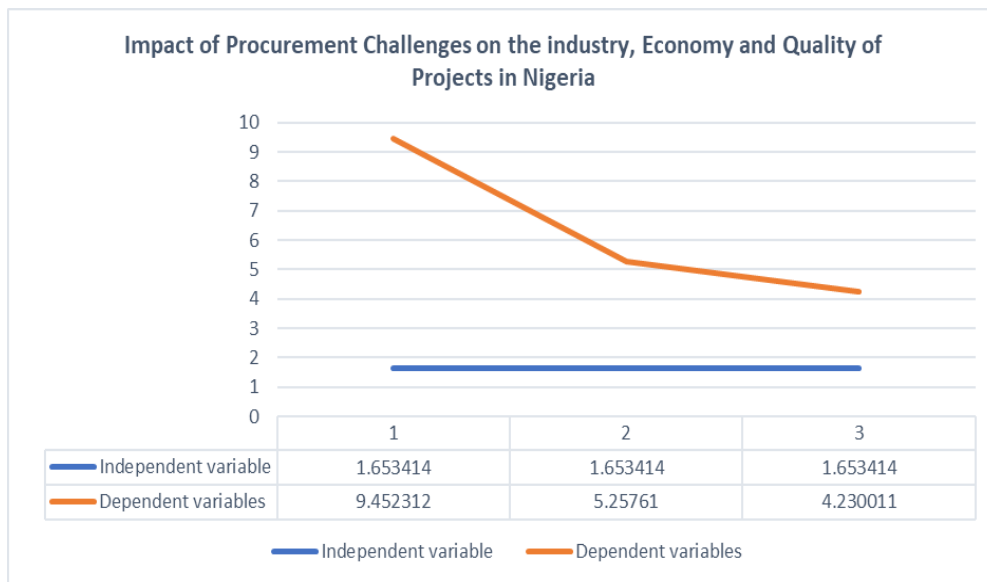


Figure 1. Graph of the impact of procurement challenges on the industry (1), Economy (2) and quality of projects (3) in Nigeria

Table 3. Variables Entered/Removed ^a

Model	Variables Entered	Variables Removed	Method
1	Industry, economy and project quality	.	Enter

- a. *Dependent Variable: industry, economy and project quality*
- b. *Independent variable: procurement process*

Table 4. ANOVA of Regression

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	9531605018535428.000	3	3177201672845142.500	5.009	.048 ^b
1 Residual	68866718639379056.000	8	8608339829922382.000		
Total	78398323657914480.000	11			

a. Dependent Variable: industry, economy and project quality

b. Independent variable: procurement process

The result of the study indicates that the independent variables procurement process have a joint influence on the dependent variable (industry, economy and project quality) as the probability value (0.048) is seen to be less than 0.05 level of significance. This implies that all the challenges on the independent variables are significant variables to determine the effect on the industry, economy and project quality in Nigeria.

Table 5. Measures to Improve Procurement Process in Nigeria

S/N	Measures To Improve Procurement Process in Nigeria	Number Of Acceptance by Respondents	Percentage (%)	Remark
1	Invest in digital adoption platform	166	98.8	Accepted
2	Improve on infrastructure	160	95	Accepted
3	Define strategic procurement policies	159	94.6	Accepted
4	Improved communication with team members	165	98	Accepted
5	Manage inventory	157	93	Accepted
6	Standardise processes	161	95.8	Accepted
7	Improve staff training	155	92	Accepted
8	Improve data management	164	97.6	Accepted
9	Accessibility of the process by all to improve transparency	159	94.6	Accepted
10	Proper supervision and checks to avoid corruption	162	96	Accepted
TOTAL		168	100	

Source: Field survey 2023

From Table 5, all the measures listed for improving the procurement process in Nigeria were accepted. All the measures have a percentage of above average and also more than 90% which reveals the high level of acceptance for all the measures.

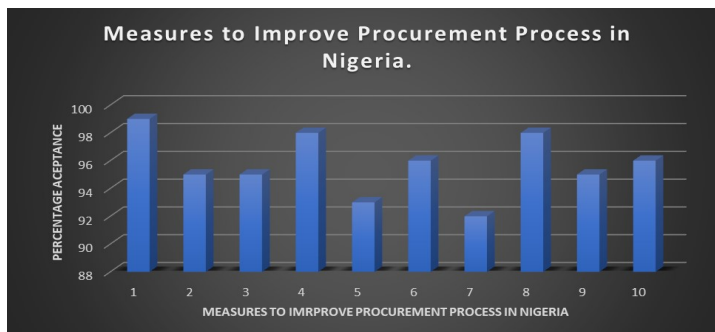


Figure 2. Graph showing Measures to Improve the Procurement Process in Nigeria

Hypotheses

Ho: There is no significant impact of the procurement process on the industry, economy and project quality in Nigeria.

Table 6. One-Sample Test

Null Hypothesis	T	Df	Sig. (2-tailed)	Mean Difference	Test Value = 0	
					95% Confidence Interval of the Difference	
					Lower	Upper
There is no significant impact of the procurement process on the industry, economy and project quality in Nigeria.	0.037	9	.09	1543.02000	12007.2096	15228.1304

Source: SPSS Computation 2023

From the test of hypothesis above using one sample test t-statistics, based on the decision rule, accept null hypothesis if the value of the t-statistics is greater than 0.05, from the result; the value of the t-statistics (0.037) is less than 0.05 hence we reject the null hypothesis and conclude that there is significant impact of procurement process on the industry, economy and project quality in Nigeria.

5. Conclusion

The Nigerian construction industry faces challenges in public procurement, including poor quality, fraudulent behavior, and high costs. To improve the procurement process, the study recommends investing in digital platforms, improving infrastructure, defining strategic procurement policies, managing inventory, standardizing processes, staff training, data management, and accessibility. Proper supervision and checks are also recommended to avoid corruption. An effective, transparent, and fraud-free public procurement strategy could help Nigeria become one of the top economies by 2030. The paper examines project management issues with public procurement in Nigeria, identifying major challenges and determining mitigation measures.

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