Examining Factors Hindering Value for Money in Public Infrastructure Procurement in Owerri, Imo State, Nigeria

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ABSTRACT

This study examines the factors hindering value for money (VfM) in public infrastructure procurement, using Owerri, Imo State, Nigeria, as a case study. Through a systematic literature review and pilot survey, 18 factors hindering value for money in public infrastructure procurement in Owerri, Imo State, Nigeria, were articulated. The purposive and snowball sampling technique was employed to administer an open-ended questionnaire to the relevant professionals/stakeholders. A quantitative method of analysis was adopted to examine the identified factors. Through factor analysis, the prevalent hindering factors were established. Organizational and policy constraints, funding and external influence, technical and accountability factors, economic and internal deficiencies, human-induced factors, and attitudinal and documentation lapses were identified as the components hindering value for money in Owerri. The adoption of relevant reforms of the Public Procurement Act 2007 and the principles of value for money in public procurement are crucial and instrumental in overcoming the hindrances to ensuring value for money. The study recommends practical steps such as insulating procurement systems from political interference, simplifying VfM tools for local professionals, embedding risk-aware budgeting, and enforcing ethical standards. These findings contribute to the growing conversation on how to strengthen procurement frameworks in Nigeria and similar settings, especially in subnational regions. Ultimately, the study calls for reforms that are not just technically sound but grounded in the realities of local governance and practice.

Keywords: value for money, hindrance, public infrastructure, procurement, Nigeria

1.0 INTRODUCTION

Modern infrastructure is responsible for a nation's economic growth. The existence of urban infrastructure has the potential to serve as an indicator of its economic capacity, foster non-economic objectives, as well as enhance the welfare of the populace (Fosu et al., 2022). Irrespective of abundant economic potential, infrastructural deficiencies are experienced in many climes, and Nigeria is not excluded. Executing infrastructure projects of high standards has been characterized by perceived poor outputs of construction deliverables. The issue of project costs exceeding budgets, undue political interests, lack of project supervision, and delays in final payments of contractors and suppliers have characterized project delivery in Nigeria (Ikechukwu et al., 2021).

The very essence of public projects necessitates accountability. According to (David & Carolyn, 2018), accountability will occur if the government funds projects using taxpayers' money or state funds, as the public is interested in acquiring statistics that will allow them to assess the government's operations and financial expenditures. To guarantee value for money (VfM) in public projects, clients and beneficiaries of these projects have employed several initiatives. In the past twenty years or so, several African nations, including Nigeria, enacted reforms of public infrastructure procurement, intending to enhance their public procurement systems to attain optimum value for money (Olusegun et al. 2024).

Considering the paucity of funds available to the government, infrastructure procurement must be practiced such that it guarantees public confidence. Achieving VfM in public projects is a challenge in Owerri, particularly in the public sector. This is based on an increased number of project failures and relatively poor performance of public infrastructure projects, often occasioned by the change in government, policies, and political interest (Egwunatum et al, 2021).

According to Mohd-Rahim et al. (2018), every phase of the project must be executed to attain value, which necessitates the involvement of multiple stakeholders and project participants. The capacity of construction professionals to ascertain whether they are providing optimal services to their clients is predominantly contingent upon their ability to accomplish VfM (Ayettey & Danso, 2018). Karanja (2021) posits that VfM is derived if a task is devoid of fault upon finalization, delivered punctually, delivered within the allocated budget, purposefully appropriate, incurred with minimal construction expenses, aesthetically pleasing, supported by substantial warranties, possesses a satisfactory lifespan of repairs, incurs low maintenance costs, minimizes disruption to the general public, and prioritizes safety. It is against this background that this study examines the factors hindering Value for Money in Public Infrastructure Procurement in Owerri, Imo State, Nigeria.

2.0 LITERATURE REVIEW

2.1 Value for money concept

In various daily scenarios, VfM is applied (Barton et al., 2019). It forms the constituent part of economic evaluations and decisions. There have been numerous appeals for the allocation of resources toward the advancement of societal change (Odusote et al., 2022) to obtain and exhibit value for money. The word VfM has been defined by several authors in various ways. To achieve maximum benefit while utilizing resources, however, is one of the essential definitions of VfM. The concept of "maximizing the benefit from available resources" is employed, according to (Štrangfeldová & Štefanišinová, 2020), to denote the imperative nature of clarity in the utilization of public expenditures.

2.2 Value for Money in Public Infrastructure Procurement: Global Perspective

One of the most important criteria for which procuring bodies can justify their purchase decisions in public-sector procurement is VfM. This viewpoint was also expressed by Karanja (2021), who provided a comprehensive definition of value for money by equating it with the economy, efficacy, and efficiency of the labor performed, in addition to the quality of the service. The idea of VfM has gained a lot of traction in Europe, especially when it comes to Public-Private Partnerships (PPPs). In this sense, the UK has been

a trailblazer (Zhao et al., 2023). The UK's approach to VfM in infrastructure procurement has had a considerable impact on practices throughout Europe (Zhao et al., 2021).

The authors point out that several European nations have embraced the UK's emphasis on quantitative assessment instruments, like the Public Sector Comparator. However, Carbonara et al. (2014) point out that different European nations have diverse interpretations and applications of VfM. For example, pointing out that nations such as Germany and France lay more emphasis on qualitative characteristics and long-term societal advantages, whilst the UK and the Netherlands tend to focus more on the financial components of VfM. For this reason, nations are more eager to obtain VfM when it comes to the purchase of goods, services, and construction projects (Senzu & Nndebugri, 2017).

While some view VfM as the most important procurement principle (Manta et al., 2022), Panga (2021) referred to it as the "heart" of procurement or the center of procurement in the strategic management of public finances.   There are differences in how VfM is seen and applied in developing and emerging economies. In their 2016 study, Patil and Laishram examine the Indian setting and observe that although policy documents are beginning to acknowledge VfM concepts, institutional capacity limitations and a procurement culture that has historically been cost-centric make practical implementation difficult. Africa's adoption of VfM concepts differs greatly from nation to nation. In his analysis of the use of VfM evaluation in Nigeria's infrastructure projects, Arimoro (2020) points out that although policy documents acknowledge the idea, institutional capacity issues and political meddling hinder its real-world implementation. According to Dimitri (2013), there is an increasing understanding of the necessity of incorporating social and environmental elements into VfM assessments in addition to standard financial indicators. Although the significance of the VfM principles is widely acknowledged, there are considerable regional and national differences in how these principles are interpreted and used.

2.3 Why value for money in public infrastructure procurement in Owerri?

Owerri, one of Nigeria's fastest-growing cities, is expected to have over 2.8 million people by 2027. An exceptional case study for public infrastructure procurement may be found in Owerri, the capital city of Imo State, Nigeria.

VfM is a major difficulty for Owerri's public infrastructure projects, as is the case for many other fast-growing urban centers in Nigeria. However, rapid development of the city, scarce resources, and intricate sociopolitical factors make it difficult to implement efficient procurement procedures (Rex Ugulu, interview with the author, June 17, 2024). Owerri's institutional frameworks and lower economic base frequently cause problems for the city's public procurement procedures when compared to major Nigerian cities like Lagos or Abuja.

For example, Lagos and Abuja benefit from more robust institutional frameworks and procurement innovations such as e-procurement systems (Olatunde, 2024). The procurement procedures in Lagos and Abuja have been the subject of much research (Augustine et al., 2024), but the dynamics of procurement in minor cities such as Owerri are not well covered in the literature. Additionally, Ike (2018) found several variables that particularly affected the performance of procurement in public projects in Imo State, which has its capital city of Owerri. Nevertheless, the VfM component was not the main focus of their study, which leaves a significant knowledge vacuum regarding how these elements affect the achievement of VfM in public infrastructure procurement. The disparity is especially noteworthy considering the swift urbanization and infrastructure development obstacles encountered by developing cities such as Owerri, as mentioned by (Egwunatum et al., 2021). In contrast, Owerri still employs traditional procurement practices, making it more susceptible to irregularities (Yu et al., 2013) and political influence. These differences underscore the contextual limitations Owerrri faces in attaining value for money.

With the gaps in literature, this study fulfills a need to identify the factors hindering VfM in public infrastructure procurement in Owerri. Not only will these findings add to the scholarly conversation, but they will also influence practice and policy in Owerri and other similar cities, with the potential to result in more successful and productive public procurement procedures.

2.4 Factors hindering the VfM in Public Infrastructure Procurement

In Imo State, procurement laws exist, but the implementation framework is fragile, which has given rise to kickbacks and sharp practices. According to the Brookings report (Williams et al., 2023), for several decades, Nigeria, Africa's economic giant, has struggled with corruption, especially with public procurement at the federal, state, and municipal/local levels of government. In 2022, Nigeria obtained 24 out of a possible 100 points in Transparency International's Corruption Perceptions Index (CPI). This aligns with the findings of Olusegun (2024), who reported that the nation's procurement process is still characterized by irregularities, as evident from the many cases of infractions of the procurement guidelines in some government quarters.

Another factor is the lack of transparency in procurement processes. Nemec et al. (2023) argue that opaque procurement procedures create opportunities for collusion among bidders, further undermining VfM. A thorough analysis of existing literature reveals several potential factors that shed light on the failure of projects to achieve VfM.

For instance, (Barr & Christie, 2015) noted a scarcity of procedure in terms of methodology when aiming to attain VfM, (Jackson, 2012) posited a dearth of relevant data in the evaluation of VfM, and (Wu et al., 2008) submitted that governments are faced with some level of difficulties when embarking on projects without commensurate funding provisions. (Dza et al., 2013) further emphasized the poor utilization of VfM in public contracts.

Insufficient procurement strategies, contracts susceptible to delays, mishandling of financial resources by involved entities, manipulation of VfM evaluation outcomes to retroactively validate previously predetermined projects, and a scarcity of incentives in governmental agreements also emerge as significant concerns.

Issues of poor project scope and inadequate feasibility studies often lead to suboptimal outcomes in public infrastructure projects. A study by Unegbu et al. (2023) on the performance of construction projects in Nigeria identified, among others, poor project planning and scheduling as being responsible for poor project performance. This lack of planning often results in project overruns and diminished value. Furthermore, Abdullahi et al. (2022) found that there was often a misalignment between infrastructure projects and broader development goals, leading to inefficient resource allocation and reduced VfM (see Table 1).

Table 1. Summary of identified factors hindering value for money in public infrastructure procurement.

Symbol	Factors hindering the VfM	Source(s)
D1	Inadequate engagement of stakeholders	(Rathenam & Dabup, 2017)
D2	Scarcity of incentives in government agreements	(Hughes et al., 2007)
D3	manipulation of VfM evaluation outcomes to retroactively validate previously predetermined projects	(Europe PPP Expertise Centre, 2015)
D4	Mishandling of financial resources by involved entities	(Zou, 2006), (Yap et al., 2010), (Osei-Tutu et al., 2010)
D5	Effect of Macroeconomic Variables	(Oladipo & Oni, 2012), (Oduro Asamoah et al., 2019), (Semenova & Vitkova, 2019)
D6	Insufficient procurement strategies	(Watermeyer, 2011), (World Bank, 2016)
D7	Embarking on projects without commensurate funding provisions	(Wu et al., 2008), (Banaman, 2016), (Ofori et al., 2017)
D8	The dearth of relevant data in the evaluation of VfM	(Jackson, 2012), (Helby-Petersen, 2019)

D9	Scarcity of VfM methodology	(Dallas, 2008), (Ma & Tam, 2013), (Barr & Christie, 2015), (Olatunji et al., 2017)
D10	Poor utilization of VfM in public contracts	(Dza et al., 2013), (Nsiah-Asare & Prempeh, 2016)
D11	Unclear client priorities and objectives	(Venkataraman & Pinto, 2008), (Olawumi et al., 2016), (Olatunji et al., 2017)
D12	Poor knowledge of some VfM tools	(Ahmed et al., 2014), (Olawumi et al., 2016), (Olatunji et al., 2017)
D13	Technicalities of VfM management tools	(Aapaoja, 2014), (Olatunji et al., 2017), (Obimah, 2018)
D14	Political interest	(Damoah, 2015), (Asante, 2017), (Simaya & Maro, 2018)
D15	Incomplete or abandoned projects	(Damoah, 2015), (Williams, 2017), (Simaya & Maro, 2018)
D16	Unethical behavior of some project participants	(Agyeman, 2014), (Simaya & Maro, 2018), (Shah & Alotaibi, 2018)
D17	Poor contract administration	(Kime, 2014), (Jatarona et al., 2016), (Akrofi Osabutey, 2016), (Simaya & Maro, 2018)
D18	Incomplete tender documents	(Brook, 2004), (Laryea, 2011), (Boateng, 2014), (Simaya & Maro, 2018)

2.4.1 Conceptual Synthesis of Hindering Factors

Several studies have explored barriers to achieving value for money (VfM) in public infrastructure procurement, but findings are often dispersed and descriptive. To enhance coherence and align the literature with this study's empirical focus, the identified hindering factors are grouped into six conceptual categories:

2.4.1.1 Organizational and Policy Constraints

These refer to issues within institutional structures and regulations, such as weak procurement planning, lack of enforcement of procurement laws, and inadequate internal control systems (Dickson et al. 2020)

2.4.1.2 Funding and Political Influence

This includes delayed payments, poorly structured funding mechanisms, and political interference in project selection and contractor appointments (Sikhupelo & Amoah, 2024; Masoud, 2023)

2.4.1.3 Technical and Managerial Challenges

These are operational weaknesses such as a lack of skilled procurement professionals, complex VfM tools, poor stakeholder engagement, and weak monitoring systems (Matebese-Notshulwana, 2021; Igwe et al., 2024)

2.4.1.4 Economic and Internal Deficiencies

These stem from unstable macroeconomic conditions and internal inefficiencies, including inflation, exchange rate fluctuations, and poor contract execution strategies (Jolly, 2022; Ejedegba, 2022)

2.4.1.5 Human-Induced Factors

These are behavioral issues such as unethical practices, manipulation of evaluation processes, and unclear client priorities (Tzini & Jain, 2018)

2.4.1.6 Contract Administration Challenges

These involve procedural and documentation failures, such as incomplete tender documents, absence of reliable data, and disputes arising from vague contract clauses (Chan et al., 2021; Koc & Gurgun, 2021).

3.0 RESEARCH METHODOLOGY

For this research, the quantitative method of analysis was adopted, with a systematic literature review. Before the full-scale data collection, a pilot survey (with 10 experienced professionals, including project managers, quantity surveyors, and procurement officers) was conducted to verify the completeness, relevance, and clarity of the questionnaire items obtained from the literature study. The open-ended responses were analyzed through thematic content analysis. First, responses were reviewed line-by-line to identify recurring ideas or concerns, which were then grouped under the 18 predefined VfM hindrance variables. A coding framework was developed to align qualitative entries with these variables, and frequency scores were generated based on how often each theme appeared across responses. This coding process allowed the qualitative data to be quantified and structured for use in the exploratory factor analysis. The coding and quantification were manually verified by two independent reviewers to enhance reliability.

The pilot also helped to confirm the content validity of the identified 18 factors to make sure they have practical value in the local context. Based on the results and advice from experts, the final instrument was refined before being used in the primary data collection phase. This pilot stage served as a filter to ensure that only contextually and statistically relevant variables were included in the final analysis.

The purposive sampling technique was selected to ensure that only professionals with direct experience in public infrastructure procurement were included. Snowball sampling complemented this by leveraging professional networks to reach additional qualified respondents. This approach was necessary given the specialized nature of the target population, which is not evenly distributed or publicly listed, making random sampling impractical. Choosing an informant consciously based on the qualities they possess is known as purposeful sampling. Falconer (1971), it is imperative to establish specific criteria that delineate a good informant from a bad informant. As a result, the following criteria were used in the study:

i)   The respondents should possess adequate knowledge and exposure to the area of study.
ii) Have been involved in public procurement duties for infrastructure development.
iii) Possess a minimum of 3 years of industry experience.

Based on these criteria, 16 respondents were originally identified for this study. To overcome the challenge of ascertaining the totality of respondents, snowball sampling was adopted. As a result, recommendations were made until all recommendations were exhausted, signaling saturation. In total, 98 questionnaires were issued, of which 63 were returned, representing a 64.29% response rate. Although the sample size of 63 is modest, it falls within acceptable ranges for exploratory factor analysis, especially in studies involving expert populations (Comrey & Lee, 1992). Given the specificity of the target group and the richness of the data collected, the sample is deemed sufficient to support valid initial findings and generate insights for further research. As per Table 2, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy is 0.589 (see Table 2), which falls within the minimum acceptable range for factor analysis in exploratory research settings (Kaiser, 1974). Although marginal, this value is often considered sufficient in studies involving social or behavioral constructs where perfectly structured datasets are rare. In addition, Bartlett's Test of Sphericity was highly significant ($p < 0.001$), supporting the suitability of the data for factor analysis.

Table 2. KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.589
Bartlett's Test of Sphericity	Approx. Chi-Square	461.088
	df.	153
	Sig.	.000

3.1 Respondents' background composition

Data gathered in Table 3 shows that 23.81% of respondents are project managers, 19.04% are engineers, 31.75% are Quantity surveyors, and 11.11% are builders. Based on the type of organization of respondents, 53.96% are from contracting firms and 46.04% are from consulting firms. 7.94% of respondents' organizations operate in installation and maintenance, 34.92% are in construction, 41.27% are in procurement, and 15.87% are in supply. From their years of experience, 44.45% have worked 3-5 years, 33.33% have worked 6-10 years, and 11.11% have worked 11-15 years and 16 years and above, respectively. The professional membership standing shows that 19.04% are probationer members, 55.56% are corporate members, and 24.50% are fellows. The findings in this portion show that the respondents met the professional and academic criteria set.

Table 3. Background data of respondents

Group	Category	Frequency	Percent
Profession of respondents	Project managers	15	23.81
	Engineers	12	19.04
	Quantity Surveyor	20	31.75
	Architect	7	11.11
	Builders	9	14.29
	TOTAL	63	100.00
Type of organization	Contracting firm	34	53.96
	Consulting firm	29	46.04
	TOTAL	63	100.00
The sector organization operates in	Installation and maintenance	5	7.94
	Construction	22	34.92
	Procurement	26	41.27
	Supply	10	15.87
	TOTAL	63	100.00
Years of experience	3-5 years	28	44.45
	6-10 years	21	33.33
	11-15 years	7	11.11
	16 years and above	7	11.11
	TOTAL	63	100.00
Professional membership standing	Probationer status	12	19.04
	Corporate member status	35	55.56
	Fellow status	16	25.40
	TOTAL	63	100.00

4.0 DATA ANALYSIS, PRESENTATION, AND INTERPRETATION

The data obtained were examined using frequencies, percentages, Mean Scores, and Standard deviation. Background data of respondents were synthesized using frequencies and percentages (see Table 4). The data was further subjected to quantitative analysis using the Statistical Package for Social Sciences (SPSS version 20). SPSS was used for analyzing the research findings and determining their relationship among variables. The mean score analyses were used to rank the respondents' ratings of variables. With a hypothesized mean score of 3.0, the variables obtained were greater than 3.0 and thus deemed significant for this research following a one-sample t-test analysis at a 95% certainty level (Kissi et al., 2019).

Table 4. Mean analysis of factors hindering value for money

Symbol	Variable	Mean	Std. Deviation	Analysis N
D1	Inadequate engagement of stakeholders	3.98	0.609	63
D2	Scarcity of incentives in government agreements	3.98	0.492	63
D3	manipulation of VfM evaluation outcomes to retroactively validate previously predetermined projects	3.95	0.633	63
D4	Mishandling of financial resources by involved entities	4.00	0.568	63
D5	Effect of Macroeconomic Variables	3.94	0.564	63
D6	Insufficient procurement strategies	4.06	0.535	63
D7	Embarking on projects without commensurate funding provisions	3.94	0.535	63
D8	The dearth of relevant data in the evaluation of VfM	3.98	0.582	63
D9	Scarcity of VfM methodology	4.00	0.311	63
D10	Poor utilization of VfM in public contracts	3.98	0.684	63
D11	Unclear client priorities and objectives	4.02	0.582	63
D12	Poor knowledge of some VfM tools	3.95	0.682	63
D13	Technicalities of VfM management tools	4.05	0.580	63
D14	Political interest	4.11	0.444	63
D15	Incomplete or abandoned projects	3.94	0.471	63
D16	Unethical behavior of some project participants	4.05	0.490	63
D17	Poor contract administration	3.86	0.669	63
D18	Incomplete tender documents	4.00	0.402	63

4.1 Preliminary consideration

The size of a sample informs the dependability of factor analysis. The lowest consideration is 10 according to Decoster, 1998). The KMO test is fit for weighing the reliability of variables being studied irrespective of sample size. With a value spread of 0 and 1, a variable close to 1 shows the proficiency of the sample (Kaiser, 1974). Having a sample size of 63, a KMO value of 0.589, the research procedure of Osei-Kyei et al. (2014), who utilized a smaller sample size, was followed. These scholars obtained a moderately lesser response but fulfilled all the necessary statistical analysis; as such, it's deemed proficient (Table 2). With a null hypothesis from Bartlett's test, the main correlation is seen as an identity matrix. Having a p-value higher than 0.05 signifies the occurrence of a definite level of association among the variables. With a $p < 0.001$ value, Bartlett's test is affirmed significant and suitable for factor analysis. Ahadzie (2007) stated that to ascertain how closely variables connect, such variables are subjected to commonality. If variables possess extraction figures more than 0.5, such a variable is adequate for the factor.

To identify the underlying dimensions influencing value for money (VfM) in public infrastructure procurement, exploratory factor analysis (EFA) was employed. This method is suitable when the objective is to group related variables into interpretable components, especially in cases where theoretical constructs are broad and multifactorial. The dataset comprised 18 variables derived from both literature and field data.

Before extraction, the suitability of the data for factor analysis was assessed using the Kaiser-Meyer-Olkin (KMO) test and Bartlett's Test of Sphericity. The KMO value was 0.589, indicating moderate sampling adequacy, while Bartlett's Test was significant ($p < 0.001$), confirming that the variables were sufficiently correlated to justify factor analysis.

As shown in Table 5, factor extraction was conducted using Principal Component Analysis (PCA), which reduces dimensionality by identifying the smallest number of components that account for most of the variance in the data. To enhance interpretability, Varimax rotation was applied, which simplifies factor loadings by maximizing the variance of squared loadings across components. The number of components retained was determined based on the eigenvalue criterion (>1) and the total variance explained. Items with factor loadings of 0.5 and above were considered significant for interpretation. This methodological approach ensures that the resulting components reflect meaningful groupings relevant to the study context and research objectives.

Table 5. Total variance explored

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.625	25.697	25.697	4.625	25.697	25.697	2.712	15.065	15.065
2	1.980	11.000	36.697	1.980	11.000	36.697	2.297	12.762	27.827
3	1.860	10.336	47.033	1.860	10.336	47.033	1.963	10.907	38.734
4	1.336	7.424	54.456	1.336	7.424	54.456	1.873	10.407	49.141
5	1.293	7.181	61.638	1.293	7.181	61.638	1.836	10.201	59.342
6	1.070	5.943	67.580	1.070	5.943	67.580	1.483	8.239	67.580
7	.953	5.295	72.875						
8	.852	4.731	77.606						
9	.797	4.430	82.037						
10	.704	3.913	85.950						
11	.678	3.765	89.715						
12	.543	3.017	92.731						
13	.408	2.268	94.999						
14	.292	1.622	96.622						
15	.246	1.366	97.988						
16	.169	.937	98.925						
17	.116	.647	99.572						
18	.077	.428	100.000						

Extraction Method: Principal Component Analysis.

From Table 6, the rotated component matrix expresses the variables against each component. The respective components signify the variables of similar characteristics. This explains that variables are interrelated if they belong to a certain component. Based on Table VI, the six components equal 67% of the entire variance. The entire variance shown by the respective extracted component is as follows: the first major component (Component 1) represented 15.065% of the total variance, the second major component (Component 2) represented 12.762%, Component Three represented 10.907%, while component 4, 5 and 6 represented 10.407%, 10.201%, and 8.239% respectively, of the total variance (Table 5). For a data set to justify the cumulative proportion of variance modalities, summed components should justify at most 50% of the total variation. Given this, 67.58% of the total extracted components were derived.

Table 6. Rotated Component Matrix

Variable/Factors	Factor loading					
	1	2	3	4	5	6
Organizational and policy constraints						
D6	.824					
D12	.725					
D2	.723					
D15	.702					
Funding and external influence						
D14		.794				
D10		.681				
D7		.624				
Technical and managerial factors						
D13			.784			
D4			.783			
D9			.615			
D1			.714			
Economic and internal deficiencies						
D5				.687		
D17				.626		
Human-induced factors						
D3					.791	
D11					.790	
Contract administration constraints						
D16						.747
D18						.763
D8						.618

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 7 iterations.

4.2 Discussion and interpretation of findings

The results identified six major factors hindering VfM in Owerri: organizational and policy constraints, funding and external influences, technical and managerial challenges, economic and internal deficiencies, human-induced factors, and contract administration constraints. Rather than merely confirming existing literature, this section critically explores where the findings align, diverge, or extend previous work.

4.2.1 Component One: Organizational and policy constraints

This component includes insufficient procurement strategies, poor knowledge of some VfM tools, scarcity of incentives in government agreements, and incomplete/abandoned projects. Insufficient procurement strategies depict the absence of procurement planning, regulatory compliance, and monitoring. According to Basheka (2008), procurement planning is a necessary activity for every establishment, both for developing and developed nations. It entails all activities necessary for the purchase of products and services (Changalima et al, 2021). Regulatory compliance ensures efficient service delivery and improved procurement performance (Mwelu et al. 2018).

According to Olatunji et al. (2017), most professionals lack the knowledge of VfM tools to assist clients in obtaining projects of optimum value. This has created gaps as clients do not request its usage. Similarly, incentives in public contracts are a motivating metric that stimulates commitment among the client and contractor, which in turn helps to moderate production costs, improve performance, and the achievement of project goals (Kwasu & Laryea, 2013). For a project to be seen as incomplete or abandoned, its

completion date would not be an insight (Yap et al., 2010). These deficiencies lead to economic waste of resources. This aligns with findings by Ikechukwu et al. (2023), who identified poor procurement planning as a significant factor in project failures in Imo State.

4.2.2 Component Two: Funding and external influence

This factor captures the impact of political interest, poor utilization of VfM tools, and inadequate funding for procurement outcomes. The influence of politicians affects the procurement process by way of engaging and disengaging specialists, promoting supporters of political affiliations to juicy positions, as well as guaranteeing associated companies of continuous benefits in the procurement process (Knack et al. 2019). Political interest significantly impacts procurement processes in Owerri. This corroborates the findings of Akwei et al. (2020), who observed strong political interference in procurement decisions in developing economies. The public procurement process is frequently mismanaged in Nigeria and eventually hinders VfM from being derived from the purchase of products (Sarawa & Ma'sud, 2020).

This is evident in many projects in Owerri, reflecting a broader trend identified by (Lui et al., 2014) in their review of the Theory and Practice of Performance Measurement. Citing the UNCITRAL Model Law on public procurement (2011) to promote VfM and prevent abuses in the procurement process, the model law on public procurement outlines procedures and principles (United Nations, 2011). In Nigeria, market-based finance, borrowing, and direct budget investments from fiscal resources account for the majority of infrastructure funding (Ogunlana et al., 2016). It is therefore imperative to ensure adequate funding arrangements before the award of public contracts.

4.2.3 Component Three: Technical and accountability factors

Component three comprises technicalities of VfM management tools, mishandling of financial resources by involved entities, scarcity of VfM methodology, and inadequate engagement of stakeholders. The lack of official instructions for the efficient use of many of these technologies was regarded as a hurdle (Kipo-Sunyehzi et al., 2024). This suggested that some stakeholders or organizations had internal guidelines for using VfM tools and wouldn't want to share them with others.

In the aspect of finance, the mishandling of financial resources is a major challenge in the public sector as involved entities divert public funds for personal use without fear of negative judgment and accountability (Ibanichukwu & Onuoha 2017). This was further supported by Olusegun and Solomon (2024), noting that the mishandling of financial resources is a persistent issue in the war against corruption in Nigeria's public procurement systems. Going further, Dza et al. (2013) submitted that the lack of knowledge, legislative restrictions, and problems with political support are the reasons why VfM is neglected in government projects.

Barr and Christie (2015) highlight the potential of VfM frameworks but point out that they narrowly prioritize getting the best deal at the expense of quality. For example, public infrastructure may benefit one stakeholder group while negatively affecting another (Olander & Landin, 2005). Given some expressed concerns about the chosen project team's cognitive abilities, identifying stakeholders' influence and stakes should be a collaborative process, including all parties involved in the project, rather than the project team members mapping out and analyzing the information alone.

4.2.4 Component Four: Economic and Internal Deficiencies

The effects of macroeconomic variables and poor contract administration characterize component four. Due to Nigeria's reliance on imports, pressure on forex demand would unavoidably lead to the emergence of an alternative market and fluctuating exchange rates (Akinpelumi, 2015). Macroeconomic variables have a pronounced effect on procurement in Owerri. Jabaru et al. (2021) identified similar challenges in their study of the effect of selected macroeconomic variables on the Nigerian economy, noting the significant impact of economic instability.

Given monetary and financial policies, the convergence of the money supply with different macroeconomic variables has drawn more attention recently because economists and finance scholars have differing opinions about the influence of monetary supply on different economic indicators (Owolabi & Adegbite, 2014). The instability of these rate variables has a downward effect on public procurement.

Due to the involvement of various professionals at different levels of a project, there is a need for proper contract administration. Poor contract administration is evident in the frequent disputes between the state government and contractors, a problem also highlighted by Kafula et al. (2023) in their evaluation of contract management as a tool for successful project performance. In addition, misunderstandings among project participants hamper project deliverables (Lu et al., 2015). In cases of complex projects, adequate technical, financial, and contractual arrangements should be put in place.

4.2.5 Component Five: Human-induced factors

The manipulation of VfM evaluation outcomes to retroactively validate previously predetermined projects and unclear client priorities and objectives comprises component five. The findings of Momodu et al. (2024) reveal manipulation of VfM evaluation outcome on the cost and time performance of construction projects in Tertiary Institutions in Edo State. It further revealed a significant relationship between unethical practices and project performance.

The manipulation of VfM evaluation outcomes is a concerning trend in Owerri. Over time, project valuation reports are tampered with to conceal stakeholders' deficiencies in meeting the project objectives. Clients should recognize and implement efficient procedures that support high performance during their engagement in the construction process. Chigangacha et al. (2023) in their study of Client Roles in influencing project delivery outcomes, observed how unclear client priorities have led to shifts in project scope and objectives. Given these, client involvement is paramount as having a clear objective helps the stakeholders deliver projects of the best value.

4.2.6 Component Six: Attitudinal and Documentation Lapses

This section comprises unethical behavior of some project participants, incomplete tender documents, and the dearth of relevant data in the evaluation of VfM. To achieve VfM in the project, project participants must behave in a manner that creates and sustains team bonding. This corroborates the findings of Abdulazeez et al. (2021), who affirm that unethical practices can take place at every phase of a construction from planning to project execution and its service life. Such practices need to be identified and mitigated as they can affect the delivery and usage of the project.

This is ideal for creating work balance for effectiveness and efficiency in project delivery. Government projects frequently involve unethical practices like awarding contracts to close friends and family members and having conflicts of interest. Some of these awardees are incapable of carrying out the project's latent shortcomings, which can lead to an incomplete project or subpar final product (Simaya & Maro, 2018). On the other hand, incomplete tender documents have led to disputes and project delays, a problem also highlighted by (Bohari et al., 2021) in their study of the key criteria in deciding to tender for construction projects. For all parties to a contract, accepting incomplete tender documents poses a great risk to project performance and success, there is a need for well-drafted bidding documents as they help promote efficiency and prompt delivery of projects. In conclusion, the dearth of relevant data leads to project delays, cost overruns, and subsequent project abandonment.

4.2.7 Interconnection of factors

While each component independently affects value for money in public infrastructure procurement, their influence is often interdependent and mutually reinforcing. For example, political interference (Funding and External Influence) can directly compromise contract administration by allowing unqualified contractors to bypass due process, leading to poor documentation or incomplete tenders. Similarly, organizational and policy weaknesses often create loopholes that make human-induced issues like unethical practices more prevalent.

Technical and managerial shortcomings are frequently aggravated by economic volatility, especially when procurement staff are unable to adapt quickly to cost fluctuations, leading to project delays or contract variations. These dynamics demonstrate that achieving VfM is not simply a matter of addressing one issue at a time but requires an integrated approach where reforms in one area (e.g., contract enforcement) are supported by improvements in others (e.g., professional training, ethical standards).

This interconnection further emphasizes the need for comprehensive procurement reform that aligns policy, practice, and oversight in a coordinated and locally responsive manner.

5.0 CONCLUSION AND RECOMMENDATIONS

To improve public infrastructure procurement in Owerri, reforms must go beyond policy documents. This study calls for practical steps: protect procurement from politics, simplify VfM tools, plan around economic realities, and embed ethics and accountability into practice. When tailored to local challenges, these changes can help ensure that public projects genuinely serve the people they're meant for. The study recommends careful consideration of contract agreements, as they have the potential to significantly improve efficiency in contract execution. When properly implemented, these measures could enhance public trust, potentially encouraging increased tax compliance as citizens witness tangible evidence of accountability and effective use of budgetary allocations. While this study provides valuable insights, it also has limitations. Future research should consider a comprehensive comparative analysis of VfM challenges across different developing countries.

Based on the interrelated nature of the hindering factors identified, several strategies can be adopted to strengthen procurement practice in the city: Establish a Local Procurement Monitoring Body, Digitize Procurement Processes, Train and Certify Local Procurement Officers, Develop Risk-Responsive Procurement Plans, Strengthen Stakeholder Engagement. Projects should include structured community consultation phases to capture end-user needs, reduce misalignment, and foster accountability. This helps ensure that public projects deliver outcomes that reflect actual priorities.

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