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PROCUREMENT PLANNING AND CONTROL IN PUBLIC MASS HOUSING: EMPIRICAL BENCHMARKS FROM FEDERAL HOUSING AUTHORITY MASS HOUSING IN FCT

By

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Abstract

Public mass housing projects in developing economies frequently experience cost overruns, schedule delays, and administrative inefficiencies. Procurement management, comprising procurement planning and procurement control, serves as a primary administrative framework for resource allocation and cost control. This study evaluates the procurement planning and control mechanisms adopted in Federal Housing Authority (FHA) mass housing projects in Bwari, Abuja, addressing Objective One of the research program. Guided by Agency Theory, Transaction Cost Theory, and Project Management Theory, the inquiry employed a quantitative survey design. Data were gathered from 124 built environment professionals (project managers, quantity surveyors, architects, engineers, procurement officers, and contractors) using a validated Likert-scale instrument. Relative Importance Index (RII) and mean score analyses indicate that while respondents strongly recognize strategic outcomes like delay reduction (RII = 0.871) and transparency improvement (RII= 0.855), essential pre-contract practices perform poorly. Specifically, preparing procurement plans prior to project commencement (RII=0.695) and integrating procurement schedules into project timelines (RII=0.697) ranked lowest. Regarding procurement control, early deviation identification (RII = 0.855) and approval delays (RII=0.855) were identified as primary control factors, whereas regular operational audits (RII=0.687) and periodic performance evaluations (RII=0.715) were underutilized. The study demonstrates that financial overruns in public mass housing stem from a gap between strategic planning awareness and routine control enforcement. Policy recommendations include mandatory pre-commencement plan integration, digitized approval workflows, and institutionalized quarterly audits.

Keywords: Construction Procurement; Procurement Planning; **Procurement Control**; **Mass Housing Delivery**; **Federal Housing Authority**; **Cost Overrun**

1.0 Introduction

The construction industry contributes significantly to socio-economic development through infrastructure expansion, employment generation, and national economic growth in developing countries (Adebowale et al., 2023). In rapidly urbanizing West African nations, particularly Nigeria, municipal housing deficits remain substantial, requiring public mass housing programs to address urban demand (Abubakar & Doan, 2022; Wikipedia Contributors, 2026). As the lead public housing agency in Nigeria, the Federal Housing Authority (FHA) has executed several residential projects within the Federal Capital Territory, notably in the Bwari Area Council (Abubakar & Doan, 2022). However, like many public construction endeavors in developing nations, FHA projects encounter financial instability, project delays, and scope adjustments (Aibinu & Odeyinka, 2023; Love et al., 2022).

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Procurement management provides the administrative structure for project execution, governing how works, goods, and services are acquired, scheduled, and monitored (Eze et al., 2024; Wikipedia Contributors, 2025). Within this structure, procurement planning represents the pre-contract stage, involving needs identification, material quantification, packaging, cost estimation, and procurement method selection (Adeyemi & Olanrewaju, 2021; Ofori-Kuragu et al., 2022). Procurement control represents the post-contract stage, focusing on contract compliance, variation monitoring, material inspection, and financial auditing (Ogunde et al., 2022; Okonkwo et al., 2022).

This study is grounded in Agency Theory, Transaction Cost Theory, and Project Management Theory. Agency Theory addresses information asymmetry and moral hazard between public agencies (principals) and contractors (agents), where weak control mechanisms increase contract administration overheads and financial leakages (Ogunde et al., 2022; Okonkwo et al., 2022). Transaction Cost Theory explains how inadequate planning increases post-contract renegotiations, dispute settlement costs, and schedule disruptions (Fellows & Liu, 2021; Ogbu et al., 2022). Project Management Theory indicates that overall performance depends on continuous monitoring across all project phases (Iroha et al., 2024; Kadiri et al., 2024). Although existing literature often treats procurement as a general aspect of project administration (Adebowale et al., 2023; Obianyo et al., 2022), empirical studies examining specific procurement planning and control mechanisms in growth zones like Bwari are limited. This article addresses Objective One of the research project by evaluating the procurement planning and control mechanisms adopted in FHA mass housing projects in Bwari, Abuja.

2.0 Methodology

A quantitative survey research design was used to examine procurement practices among active construction professionals. Quantitative survey methods enable standardized measurement, Relative Importance Index (RII) ranking, and statistical analysis in construction management research (Fellows & Liu, 2021). The spatial focus was Bwari Area Council, located 28 kilometers north of central Abuja, which serves as a major urban expansion area for public housing schemes (Abubakar & Doan, 2022). Local site conditions, including lateritic soils and wet-dry seasonal weather patterns, require pre-contract logistical scheduling and material management (Amadi & Higham, 2024; Oladapo & Jagboro, 2022).

The target population comprised 180 construction professionals involved in FHA projects in Bwari, including project managers (22), quantity surveyors (31), procurement officers (45), contractors/site engineers (29), and built environment consultants (53). Using Yamane's (1967) sample size formula at a 95% confidence level (e = 0.05), a sample size of 124 respondents was calculated. Purposive stratified sampling was applied to select respondents with direct experience in FHA procurement administration. Primary data were collected using a structured 5-point Likert questionnaire (1= Strongly Disagree/Very Low to 5 = Strongly Agree/Very High) covering 20 procurement planning practices and 20 procurement control mechanisms. Content validity was confirmed by an expert panel of senior quantity surveyors and academics. Reliability was verified using Cronbach's Alpha, with coefficients exceeding 0.70 for both planning and control constructs (Fellows & Liu, 2021).

Data were analyzed using SPSS Version 28.0. Demographic profiles were analyzed using percentages, and item responses were ranked using the Relative Importance Index (RII): {RII} = {5n_5 + 4n_4 + 3n_3 + 2n_2 + 1n_1, where N = 124. RII values

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range between 0 and 1, with higher values reflecting greater adoption and perceived impact (Akintoye & Main, 2022; Babatunde et al., 2022).

3.0 Results and Findings

A 100% response rate (n=124) was obtained. The respondent profile reflected considerable professional experience and qualification: 50.0% possessed 11–15 years of industry experience, and 35.5% had over 16 years (Ademola & Ojo, 2023). Postgraduate degrees were held by 58.1% of respondents (M.Sc/M.Tech or PGD), and 85.5% were registered with professional bodies including the Nigerian Institute of Architects (35.5%), Nigerian Society of Engineers (21.0%), Nigerian Institute of Building (7.3%), and Project Management Institute (7.3%). Additionally, 56.5% had managed three or more FHA housing projects, supporting data reliability.

Table 1 presents the RII rankings and mean scores for the 20 procurement planning mechanisms evaluated.

Table 1: Relative Importance Index (RII) Ranking of Procurement Planning Mechanisms (n = 124**)**

S/N	Procurement Planning Mechanism Item Statement	Mean	RII	Rank
1	Procurement planning minimizes project delays	4.35	0.871	1st
2	Procurement planning improves transparency in project execution	4.27	0.855	2nd
3	Procurement planning helps reduce variation orders	4.14	0.827	3rd
4	Material requirements are accurately identified during planning	4.06	0.813	4th
5	Procurement methods adopted influence project cost performance	4.01	0.802	5th
6	Procurement planning enhances efficient resource allocation	4.00	0.800	6th
7	Inadequate forecasting of material prices affects project cost	3.99	0.798	7th
8	Procurement planning improves contractor performance	3.99	0.798	7th
9	Poor procurement scheduling contributes significantly to cost overrun	3.91	0.782	9th
10	Cost estimates prepared during procurement planning are realistic	3.85	0.771	10th
11	Procurement planning reduces unnecessary material wastage	3.84	0.768	11th
12	Procurement planning contributes to timely material delivery	3.77	0.755	12th
13	Stakeholders are adequately involved during procurement planning	3.72	0.744	13th
14	Market surveys are conducted before procurement decisions are made	3.70	0.740	14th
15	Poor procurement planning is a major cause of cost overrun in FHA projects	3.70	0.740	14th
16	Delays in procurement planning contribute to cost escalation	3.65	0.729	16th
17	There is effective coordination between procurement and finance units	3.57	0.715	17th
18	Inflation and market fluctuations are considered during procurement planning	3.48	0.697	18th
19	Procurement schedules are properly integrated into project timelines	3.48	0.697	18th
20	Project procurement plans are prepared before project commencement	3.48	0.695	20th

As shown in Table 1, respondents rated high-level benefits highest, including delay reduction (RII = 0.871, 1st), transparency enhancement (RII = 0.855, 2nd), and variation order suppression (RII = 0.827, 3rd) (Adeyemi & Olanrewaju, 2021; Olanrewaju & Anah, 2023). However, pre-contract administrative tasks received lower ratings: preparing procurement plans prior to project commencement ranked lowest (RII = 0.695, 20th), along with integrating procurement schedules into project timelines (RII = 0.697, 18th) and incorporating inflation adjustments (RII = 0.697, 18th). This pattern indicates that conceptual awareness of procurement planning is not fully matched by early pre-contract execution (Eze et al., 2024; Offiong & Ogwueleka, 2025).

Table 2 presents the rankings for the 20 procurement control mechanisms.

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Table 2: Relative Importance Index (RII) Ranking of Procurement Control Mechanisms (n = 124**)**

S/N	Procurement Control Mechanism Item Statement	Mean	RII	Rank
1	Delayed approval processes contribute to project cost escalation	4.27	0.855	1st
2	Procurement control helps identify deviations early	4.27	0.855	1st
3	Unauthorized variations increase project cost	4.21	0.842	3rd
4	Procurement control minimizes non-compliant practices	4.21	0.842	3rd
5	Weak procurement control contributes to financial vulnerabilities	4.13	0.826	5th
6	Effective procurement control significantly reduces cost overrun	4.15	0.826	5th
7	Effective communication among stakeholders improves procurement control	3.93	0.801	7th
8	Procurement control reduces material loss and wastage	3.99	0.798	8th
9	Procurement monitoring improves cost performance	3.93	0.785	9th
10	Procurement supervision influences project cost efficiency	3.93	0.785	9th
11	Procurement control mechanisms reduce project disputes	3.85	0.771	11th
12	Procurement compliance mechanisms are effective in FHA projects	3.85	0.769	12th
13	Procurement records are properly documented and maintained	3.78	0.756	13th
14	Weak contract management contributes to cost overruns	3.78	0.756	13th
15	Procurement activities are regularly monitored during project execution	3.71	0.742	15th
16	Material usage is adequately monitored on site	3.71	0.742	15th
17	Contract administration procedures are effectively implemented	3.70	0.740	17th
18	Contractors comply with procurement specifications and standards	3.65	0.729	18th
19	Procurement performance evaluation is carried out regularly	3.57	0.715	19th
20	Procurement audits are conducted regularly	3.44	0.687	20th

Table 2 shows that approval process delays (RII = 0.855, 1st) and early deviation detection (RII = 0.855, 1st) ranked highest among control items, alongside limiting unauthorized variations (RII=0.842, 3rd) and reducing non-compliant practices (RII= 0.842, 3rd) (Aduwo et al., 2021; Nwachukwu & Emuze, 2023). In contrast, post-contract verification and review activities scored lower: regular procurement auditing recorded the lowest rating (RII=0.687, 20th), followed by routine performance evaluations (RII=0.715, 19th) and specification compliance monitoring (RII=0.729, 18th).

These results suggest that procurement control in the studied projects focuses primarily on responding to operational delays and scope adjustments rather than maintaining continuous post-contract oversight (Iroha et al., 2024; Ogunde et al., 2022). While administrative bottlenecks and unauthorized variations influence cost outcomes, formal audits and routine performance assessments are implemented less consistently (Amadi & Higham, 2024; Okonkwo et al., 2022).

4.0 Conclusion and Recommendation

This study evaluated procurement planning and control mechanisms in FHA mass housing developments in Bwari, Abuja. The findings demonstrate that construction professionals recognize the role of procurement management in reducing delays, limiting variation orders, and maintaining project transparency. However, practice gaps exist in early implementation: procurement plans are often formulated late without market inflation adjustments, and post-contract control is affected by approval delays and irregular operational audits.

To improve cost management in public housing projects, the following measures are recommended:

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1. Enforce mandatory completion and schedule integration of procurement plans prior to site mobilization.
2. Adopt digital procurement management tools to reduce administrative approval delays and maintain clear documentation trails (Aduwo et al., 2021).
3. Establish regular quarterly procurement auditing and performance reviews across active project sites.
4. Incorporate market price trend analysis and contingency allowances into early cost estimates (Amadi & Higham, 2024; Nnadi & Najjobyo, 2025).

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