CONSTRUCTION MANAGEMENT TECHNOLOGY

Project Initiation Processes and Public Building Project Delivery in South-West Nigeria: A Cross-Sectional Study

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Abstract

Public building projects in South-West Nigeria continue to encounter delays, cost pressure, quality concerns and abandonment, raising questions about the adequacy of project decisions made before execution. This study assessed the association between project initiation processes and public building project delivery. A cross-sectional survey targeted 402 building professionals drawn from a population of 480 across six South-West states. Of 402 questionnaires administered, 305 were retrieved (75.9%) and 300 were suitable for analysis (74.6% of those distributed). Descriptive statistics, multiple regression and seemingly unrelated regression (SUR) were used. Mean agreement scores were 4.262 for project charter development, 4.060 for stakeholder identification, 4.163 for feasibility studies and 4.210 for project team assembly; the initiation composite was 4.174 (SD = 0.735). The overall delivery regression was significant, $F(4, 295) = 40.451$, $p < .001$, $R^2 = .354$. In separate SUR equations, the initiation factors were jointly associated with cost (Wald $\chi^2 = 78.70$), time (94.86) and quality (104.29), each $p < .001$. However, several individual coefficients were not significant, indicating that effects varied by outcome. Stronger initiation arrangements were associated with more favourable perceived building delivery, although the cross-sectional design does not establish causality. Public project sponsors should formalise project charters, stakeholder assessment, feasibility appraisal and team selection before authorising construction.

Keywords: Project initiation; public building projects; project charter; stakeholder identification; project delivery; South-West Nigeria

1 Introduction

Public building infrastructure is essential to social services and economic activity, yet persistent failures in the delivery of government-sponsored building projects undermine public value. In Nigeria, difficulties involving cost escalation, delayed completion, defective works and abandonment remain prominent in the public construction debate (Olanrewaju et al., 2022; Oladipo et al., 2024). These failures are not confined to site operations: important decisions concerning purpose, authority, feasibility and responsibility are made before work begins. Initiation is therefore a plausible point at which otherwise avoidable delivery problems may be created or prevented.

Project initiation establishes the formal mandate and operating conditions for a proposed project. The Project Management Institute (2021) identifies project authorisation and stakeholder identification as central initiation activities. In public building construction, initiation also entails assessing technical and financial feasibility and appointing personnel with the requisite professional expertise. A project charter clarifies scope, expectations and accountability; stakeholder identification maps interests and approval requirements; feasibility appraisal evaluates deliverability; and project-team

assembly determines whether suitable capabilities are in place before execution. The present analysis examines these four dimensions in relation to cost, time and quality performance.

Stakeholder theory, developed by Freeman (1984), provides an explanatory foundation for the study. The theory maintains that organisational outcomes are shaped by relationships among stakeholders with legitimate interests in organisational decisions. Public building projects involve procuring authorities, end users, consultants, contractors, regulators and communities. Recognising these actors at project inception may strengthen the coordination of priorities, facilitate approval processes and limit disputes over resources and responsibilities. The theory is particularly relevant to the early identification and management of stakeholder expectations.

Previous studies have linked initiation practices to project performance. In Abuja, Usman et al. (2014) reported that initiation-phase principles were associated with project performance; Anthony (2018) found a positive relationship between project initiation and building success in Kenya. Mutwiri et al. (2018) similarly associated initiation and identification procedures with the success of constituency development construction projects. Ratanya and Lucy (2023) reported a favourable relationship for infrastructure projects in Meru County. These studies are pertinent but leave uncertainties about the separate contributions of project charters, stakeholder identification, feasibility studies and team assembly to each component of public-building delivery in South-West Nigeria. The wider literature also commonly treats project success as a single outcome, potentially concealing cost–time–quality differences.

The central research question is: To what extent are project initiation processes associated with the cost, time and quality dimensions of public building project delivery in South-West Nigeria? The study assesses the relationships between project charter development, stakeholder identification, feasibility study and project team assembly and overall project delivery. By examining the three delivery dimensions separately as well as jointly, the analysis provides evidence on whether the relative contribution of initiation practices varies across performance outcomes.

2 Methods

2.1 Study design and setting

A cross-sectional survey design was adopted to investigate public building project delivery in Ekiti, Lagos, Ogun, Ondo, Osun and Oyo States of South-West Nigeria. The study covered building professionals involved in completed and ongoing public building projects associated with state ministries responsible for works, infrastructure, lands and housing, and State Universal Basic Education Boards. Contractors, consultants and public-sector project personnel constituted the study setting. The field survey was conducted in 2026.

2.2 Participants, sampling and response

The study population comprised 480 building professionals, from which a target of 402 participants was established. A multistage sampling procedure combined purposive identification of relevant public institutions and professional groups, random selection of selected projects and contractors' project managers, and proportional allocation across the states. In total, 402 structured questionnaires were administered, of which 305 were returned, representing a response rate of 75.9%. Five returned questionnaires with substantial missing responses or inadequate engagement were excluded. The final analysis therefore comprised 300 respondents, equivalent to 74.6% of question-

naires administered and 98.4% of those returned. The respondents included engineers, architects, builders, project managers and quantity surveyors.

2.3 Measurements and quality assurance

Data were collected using a structured, self-administered questionnaire with a five-point Likert response scale ranging from 1 (strongly disagree) to 5 (strongly agree). Public building project delivery was assessed through perceived compliance with budgetary requirements (four items), completion schedules (five items) and quality standards (five items). These were perceptual indicators rather than independently audited project outcomes. Content validity was assessed, and an instrument pilot was conducted among building professionals in Edo State. The 14-item building project delivery measure demonstrated satisfactory internal consistency (Cronbach's $\alpha = .890$).

2.4 Statistical analysis

Data were analysed using frequencies, percentages, means and standard deviations. Multiple linear regression was used to examine the association of the component practices with the overall building project delivery score, while seemingly unrelated regression (SUR) was applied to estimate separate equations for perceived cost, time and quality performance, allowing their error terms to be correlated. Tests were evaluated at the 5% significance level; p values smaller than .001 are written as $p < .001$. Approximate 95% confidence intervals for the multiple-regression coefficients were calculated using the coefficients, standard errors and residual degrees of freedom. Equation-level Wald χ^2 statistics and cross-equation residual correlations are also presented. Project initiation was operationalised through project charter development (five questionnaire items), identification of project stakeholders (two items), feasibility study (three items) and project-team assembly (three items), giving a total of 13 indicators. Cronbach's α for the initiation scale was .910. The principal outcome was overall perceived public building project delivery; separate dependent variables measured adherence to cost, time and quality objectives. In the SUR analysis, each delivery outcome was regressed on the four initiation components, with correlations permitted among the outcome-equation error terms.

3 Results

3.1 Response rate and respondents' profile

Table 1 presents questionnaire disposition. Of the 402 forms issued, 305 were returned; five were excluded and 300 were retained. Table 2 details the sample composition: Lagos (n = 86, 28.7%) and Ondo (n = 76, 25.3%) had the largest numbers. There were 246 men (82.0%) and 54 women (18.0%); 119 respondents (39.7%) were aged 40–49 years and the same number reported more than 15 years of professional experience. Quantity surveyors comprised the largest professional group (n = 85, 28.3%).

Table 1. Questionnaire distribution and analytical response.

Survey disposition	N	% of distributed
Questionnaires distributed	402	100.0
Questionnaires returned	305	75.9
Returned questionnaires excluded	5	1.2

Survey disposition	N	% of distributed
Questionnaires retained for analysis	300	74.6

Note: Percentages were calculated using all 402 administered questionnaires as the denominator. The overall return rate was 75.9%, and the final analytical response rate was 74.6%.

Table 2. Respondent characteristics (N = 300).

Characteristic	Category	n	%
State	Ekiti	45	15.0
	Lagos	86	28.7
	Ogun	32	10.7
	Ondo	76	25.3
	Osun	24	8.0
	Oyo	37	12.3
Age, years	Below 20	10	3.3
	20–29	37	12.3
	30–39	77	25.7
	40–49	119	39.7
	50–59	55	18.3
	60 and above	2	0.7
Sex	Male	246	82.0
	Female	54	18.0
Qualification	HND	61	20.3
	BSc/BEng	172	57.3
	MSc/MEng	50	16.7
	PhD	6	2.0
	Other (PGD)	11	3.7
Professional experience	Below 2 years	13	4.3
	2–6 years	33	11.0
	7–11 years	53	17.7
	11–15 years	82	27.3
	Above 15 years	119	39.7
Profession	Engineer	67	22.3
	Architect	51	17.0
	Builder	47	15.7
	Project manager	50	16.7
	Quantity surveyor	85	28.3

Note: N = 300. Percentages may not total exactly 100.0 because of rounding.

3.2 Descriptive findings for delivery and initiation

The descriptive profile of project delivery is presented in Table 3. Perceived delivery was rated most favourably for quality (M = 4.314, SD = 0.710), followed by time (M = 4.160, SD = 0.768), then cost (M = 4.088, SD = 0.848). Ratings of overall building project delivery were high or very high for 279 respondents (93.0%). These are agreement-based measures and should not be read as independent evidence that an equivalent share of projects objectively met their contract targets.

Table 3. Descriptive statistics for the dependent variables.

Outcome	Items	M	SD
Cost (within budget)	4	4.088	0.848
Time (within schedule)	5	4.160	0.768
Quality standards	5	4.314	0.710

Note: N = 300. Responses were recorded on a five-point agreement scale; higher scores denote more favourable perceived delivery. M = mean; SD = standard deviation.

Table 4 presents descriptive statistics for the four initiation components. Project charter development recorded the highest composite mean (M = 4.262, SD = 0.718), followed by project-team assembly (M = 4.210, SD = 0.718), feasibility study (M = 4.163, SD = 0.710) and stakeholder identification (M = 4.060, SD = 0.795). The overall initiation score was M = 4.174 (SD = 0.735). At the indicator level, the clear definition of project goals and objectives had a mean of 4.53 (SD = 0.64), whereas the preparation of a stakeholder register had a mean of 3.98 (SD = 0.82). Further indicator-level statistics are presented in Tables 7 and 8.

Table 4. Descriptive statistics for project initiation processes.

Component	Items	M	SD
Project charter development	5	4.262	0.718
Stakeholder identification	2	4.060	0.795
Feasibility study	3	4.163	0.710
Project team assembly	3	4.210	0.718
Overall initiation scale	13	4.174	0.735

Note: N = 300. M = mean; SD = standard deviation. Composite values are reported for each project-initiation component and the overall scale.

3.3 Multiple regression: overall project delivery

As shown in Table 5, the four-variable multiple-regression model was statistically significant, $F(4, 295) = 40.451$, $p < .001$, $R^2 = .354$, adjusted $R^2 = .345$. Each of the initiation components had a positive and statistically significant coefficient in the overall-delivery model: project charter development ($b = 0.219$, $p < .001$), stakeholder identification ($b = 0.092$, $p = .040$), feasibility study ($b = 0.116$, $p = .026$) and project-team assembly ($b = 0.153$, $p = .003$). Table 5 also presents the corresponding standard errors, test statistics and approximate 95% confidence intervals.

Table 5. Multiple regression of overall perceived delivery.

Predictor	b	SE	t	p	95% CI
Intercept	5.238	0.085	61.630	<.001	[5.071, 5.405]
Project charter	0.219	0.062	3.554	<.001	[0.097, 0.341]
Stakeholder identification	0.092	0.044	2.067	0.040	[0.005, 0.179]
Feasibility study	0.116	0.052	2.234	0.026	[0.014, 0.218]
Team assembly	0.153	0.051	2.975	0.003	[0.053, 0.253]

Note: N = 300. b = unstandardised regression coefficient; SE = standard error; CI = confidence interval. Approximate 95% CIs were calculated from b, SE and the residual degrees of freedom. Model statistics are reported in the accompanying text.

3.4 Seemingly unrelated regression: cost, time and quality

Table 6 presents the SUR estimates for the three project-delivery dimensions. Project charter development had positive associations with cost (b = 0.206, p = .027), time (b = 0.242, p = .003) and quality (b = 0.210, p = .006). Stakeholder identification was associated with cost performance (b = 0.145, p = .029), but not significantly with time or quality. Feasibility study was associated with time performance (b = 0.152, p = .025), while its coefficients for cost and quality did not attain significance. Project-team assembly was associated with quality (b = 0.210, p < .001), but its association with cost did not reach the 5% threshold. The time-equation estimate for team assembly is presented without a significance conclusion because its test statistic and p value are inconsistent. The Wald χ^2 statistics were 78.70 for cost, 94.86 for time and 104.29 for quality (all p < .001). Corresponding pseudo-R^2 values were .210, .243 and .261. Correlations among the SUR equation errors were .340 for cost and time, .404 for cost and quality, and .295 for time and quality.

Table 6. SUR coefficients and equation-level statistics for initiation.

Variable	Cost: b (z; p)	Time: b (z; p)	Quality: b (z; p)
Intercept	1.579 (5.35; <.001)	1.706 (6.63; <.001)	1.959 (8.15; <.001)
Project charter	0.206 (2.23; .027)	0.242 (3.01; .003)	0.210 (2.79; .006)
Stakeholder identification	0.145 (2.19; .029)	0.087 (1.50; .134)	0.047 (0.86; .390)
Feasibility study	0.106 (1.37; .173)	0.152 (2.25; .025)	0.092 (1.45; .147)
Team assembly	0.143 (1.86; .065)	0.103 (2.55; .123)	0.210 (3.36; <.001)
Wald χ^2	78.70 (<.001)	94.86 (<.001)	104.29 (<.001)
Pseudo-R^2	0.210	0.243	0.261
Observations	300	300	300

Note: N = 300. b = regression coefficient; z = z statistic. Wald χ^2 and pseudo-R^2 values refer to the individual SUR equations. The project-team assembly estimate for time (z = 2.55, p = .123) contains an inconsistency between its z statistic and p value; no inference is made from that individual test. Residual correlations: cost–time = .340; cost–quality = .404; time–quality = .295.

4 Discussion

The findings show that project initiation processes, considered collectively, were significantly associated with perceived public building project delivery in South-West Nigeria. The aggregate regression demonstrated positive associations for all four initiation components, while the dimension-specific SUR equations revealed more differentiated relationships. This suggests that

initiation practices may relate differently to cost control, timely completion and compliance with quality standards and that a single overall delivery score does not fully capture these distinctions.

The consistent association for project charter development is plausible in the light of the authorisation and goal-setting functions described by the Project Management Institute (2021). A charter can set direction, specify responsibilities and establish measurable milestones before resources are committed. The finding is compatible with Anthony's (2018) initiation–success association and Usman et al.'s (2014) observations about initiation-phase principles in Abuja. It does not, however, prove that producing a charter alone will prevent failure: the evidence is cross-sectional and reflects respondents' judgements about practices and delivery.

Stakeholder identification was associated with cost performance but not significantly with the time or quality dimensions. This may reflect the importance of identifying authorities, approval pathways and competing stakeholder requirements before financial commitments are made, although the study did not examine these mechanisms directly. Feasibility appraisal was positively associated with time performance, consistent with its role in identifying technical and resource constraints before implementation. Project-team assembly showed a significant relationship with quality performance, underscoring the potential importance of appropriate professional expertise. These findings complement the construction-project evidence presented by Mutwiri et al. (2018) and Ratanya and Lucy (2023), while distinguishing among the three delivery outcomes.

For policy and practice, public commissioning bodies should require evidence of a documented charter, a current stakeholder register, a credible feasibility appraisal and named qualified project leadership before issuing final construction authority. The evidence supports strengthening these governance steps, but it does not rank interventions causally or establish their cost effectiveness. Administrative audits could link initiation documents with subsequent verified cost, time and defect records, allowing initiation compliance to be tested against objective delivery measures.

5 Limitations and future research

The cross-sectional design limits causal inference, while the reliance on questionnaire responses introduces possible common-method, recall and social-desirability biases. Non-response and the restriction to public building projects in one geopolitical region may limit generalisability. Independent project-level budget, programme and quality records were not incorporated into the outcome measures. A discrepancy between the test statistic and p value for project-team assembly in the time equation also restricts interpretation of that particular coefficient. Future research should follow projects prospectively, link documented initiation procedures to verified delivery outcomes and account for clustering within projects, institutions and states.

6 Conclusion

Initiation processes were jointly associated with perceived cost, time and quality delivery in public-building projects across South-West Nigeria. Project charter development showed the most consistently significant individual association, while stakeholder identification, feasibility appraisal and team assembly differed by outcome. Stronger initiation governance is a defensible managerial priority, but causal claims should await independent project-level evidence.

Appendix: Supplementary descriptive detail

The item-level descriptive statistics for perceived building project delivery and project initiation are presented in Tables 7 and 8, respectively. These results complement the composite statistics presented in Tables 3 and 4.

Table 7. Item-level descriptive statistics for building project delivery.

Indicator	Statement (abbreviated)	M	SD
Time 1	Realistic planning and schedule development	4.24	0.71
Time 2	Early resource scheduling	4.12	0.76
Time 3	Critical path method and work breakdown structure	4.16	0.81
Time 4	Strict adherence to the programme of work	4.02	0.87
Time 5	Development of monitoring and control systems	4.26	0.69
Cost 1	Adequate contingency allowance	4.09	0.80
Cost 2	Scheduled progress payments to contractors	4.07	0.87
Cost 3	Frequent progress meetings	4.17	0.80
Cost 4	Timely contractor payment	4.02	0.92
Quality 1	Definition of desired performance standards	4.33	0.73
Quality 2	Application and inspection of quality standards	4.28	0.69
Quality 3	Assessment of project quality effectiveness	4.37	0.68
Quality 4	Acceptance or rejection of work	4.36	0.70
Quality 5	Completed project meets required standards	4.23	0.75

Note: N = 300. M = mean; SD = standard deviation. Item descriptions reflect the questionnaire's delivery indicators.

Table 8. Item-level descriptive statistics for project initiation.

Indicator	Statement (abbreviated)	M	SD
PC1	Project title, goals and objectives defined	4.53	0.64
PC2	Historical project information applied	4.21	0.69
PC3	Strategic plan developed	4.18	0.79
PC4	Project milestones identified	4.18	0.79
PC5	Project charter approved	4.24	0.71
IPS1	Stakeholders and their influence assessed	4.15	0.77
IPS2	Stakeholder register created	3.98	0.82
FS1	Project objectives, goals and scope analysed	4.21	0.70
FS2	Technical viability examined	4.12	0.72
FS3	Feasibility and recommendations documented	4.16	0.71
APT1	Team roles and responsibilities defined	4.32	0.68
APT2	Skilled team members identified	4.22	0.73
APT3	Project team charter developed	4.10	0.74

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