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Integrating Project Management Techniques in Property Acquisition and Development

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Abstract

The study investigates the adoption of Project Management Techniques (PMT) in property acquisition and development and their effects on project performance and valuation outcomes in Nigeria. A quantitative design was employed, using structured questionnaires administered to 102 real estate professionals. Data were analysed using descriptive statistics, Pearson's correlation, and regression analysis with SPSS. Reliability testing yielded a Cronbach's alpha of .889, confirming high internal consistency. Results showed that cost management tools (M = 4.24, SD = 0.88) and risk management frameworks (M = 4.12, SD = 1.14) were the most frequently adopted PMT, while Gantt charts recorded the lowest adoption (M = 3.29, SD = 1.18). Correlation analysis revealed significant positive relationships between PMT adoption and project performance ($r = .589$, $p < .001$). Regression analysis demonstrated that PMT adoption significantly predicted valuation outcomes, $\beta = 0.48$, SE = 0.08, $t(100) = 5.96$, $p < .001$, 95% CI [0.32, 0.64], explaining 26.2% of the variance ($R^2 = .262$, adjusted $R^2 = .254$). The study concludes that the integration of PMT enhances project delivery efficiency and valuation accuracy in Nigeria's real estate sector. Wider professional training, institutional support, and policy implementation are recommended to strengthen PMT adoption.

Keywords: Project management techniques, Property development, Project performance, Valuation outcomes, Real estate.

1.0 INTRODUCTION

The property sector is a vital driver of economic growth, capital formation, and urban transformation. In Nigeria, rapid urbanization, population expansion, and growing demand for residential and commercial properties have intensified the need for efficient project delivery systems. Yet, property acquisition and development processes are frequently characterized by delays, cost overruns, substandard quality, and inconsistencies in valuation outcomes. These inefficiencies erode investor confidence and limit the financial sustainability of real estate ventures. Addressing these challenges requires structured management approaches capable of improving efficiency, accountability, and predictability in project delivery.

In the property development and construction industry, quality is not limited to physical durability alone, as adherence to regulatory standards, conformity of executed works with project requirements, observance of regulatory standards and the effectiveness of the processes of material control also constitutes quality (Owolabi et al., 2025; Emesiobi et al., 2024; Okonta et al., 2024; Love, Matthew and Ika, 2023; Khadim et al., 2023). The activity of quality management in the execution of construction and development projects is featured by the material approval process and Non-Conformance Report systems -NCRs- (Ford, Gosling and Naim, 2023; Love and Matthews, 2020). Olarewaju and Lee (2022) noted that material approval procedures and NCRs assist in the identification of defective materials, execution errors, approved standard deviations, and procedural violations during project execution. The procedure of material approval is targeted at ensuring that all material inputs in the construction process satisfies required safety and technical standards before they are installed. Ford, Gosling and Naim (2023) opined that NCRs provide formal documentation and suggests corrective steps for quality failures. The authors discovered that issues of workmanship, materials management and supervision are the most frequent and costly areas of non-conformance on the construction of highway mega-projects. Thus, assessing the integration of project management techniques (PMT) in property acquisition and development and its relationship to quality management is critical because robust project management (PM) frameworks ensure accountability, compliance and monitoring in the development and acquisition process.

Project Management Techniques (PMT) have long been applied in construction, engineering, and other sectors to enhance planning, scheduling, risk control, and quality management. Tools such as Gantt charts, the Critical Path Method (CPM), Program Evaluation and Review Technique (PERT), and structured cost-control frameworks have consistently improved project performance across industries. However, their systematic adoption in Nigeria's real estate development and valuation practice remains limited. Many practitioners rely on informal, experience-based approaches, leading to poor coordination and performance variability. This gap underscores the need for empirical assessment of PMT integration and its implications for project and valuation performance.

Project Management Techniques (PMT) are the systematic ways, procedures, frameworks and tools engaged in planning, controlling, coordinating and monitoring project activities with the aim of attaining predetermined objectives under defined limits of time, scope, cost and quality (Project Management Institute, 2021; Kerzner, 2019). With respect to property acquisition and development, the application of PMT is seen in the usage of program scheduling, risk, cost and quality evaluation tools, some of which are Critical Path Method (CPM), Gantt Charts, and Program Evaluation and Review Technique (PERT). Other PM techniques such as quality assurance procedures, cost-control systems, procurement monitoring, risk management frameworks and stakeholder coordination mechanisms are vital to the success of construction and property development activities (Huang, Lee and Clinciu, 2023). Each layered activity within the acquisition and development process (i.e. land purchase, design approval, contractor coordination, material procurement, regulatory compliance and valuation assessment) are interdependent and the effective integration of PMT can minimize project cost and delays, enhance project predictability and improve the performance of the overall development (Ciric Lalic et al., 2022; Agbejule and Lehtineva, 2022; PMI, 2021).

Accordingly, this study seeks to: (i) examine the extent of PMT adoption in property acquisition and development; (ii) assess the influence of project management practices (PMP) on project outcomes such as time, cost, quality and stakeholder satisfaction; (iii) evaluate the impact of PM adoption on property valuation and financial performance and (iv) identify the challenges constraining PMT integration in Nigeria's property development sector. To achieve these objectives, the study utilizes a structured questionnaire administered to estate surveyors, project managers, and developers actively engaged in property development. The instrument measures project management adoption, project and valuation performance indicators, and challenges to implementation using Likert-scale items and open-ended responses, enabling both quantitative assessment and contextual interpretation.

2.0 LITERATURE REVIEW

2.1 *Project Management in Property Acquisition and Development*

Project management provides a structured framework for planning, coordinating, and monitoring activities that ensure project objectives are achieved efficiently (Kerzner, 2019). In real estate, these techniques are particularly important because property development projects often involve high capital costs, long gestation periods, and multiple stakeholders with competing interests. According to Kerzner (2023), the application of systematic PM tools such as scheduling, monitoring, and quality control minimizes uncertainty and enhances project delivery. In Nigeria, however, PM adoption in the real estate sector remains inconsistent, often due to limited awareness and technical capacity among professionals (Nwaki and Eze, 2020).

2.2 Measuring Project Success in Real Estate Development

The traditional indicators of project success include cost, time and quality, often referred to as the "iron triangle" (Atkinson, 1999). While these remain central, contemporary studies emphasize broader measures such as client satisfaction, sustainability, and value generation (Davis, 2017). In the real estate context, success is not only reflected in timely completion and adherence to budget but also in the ability of projects to meet expected market values and long-term investment returns (Oyebanji et al., 2017). As Chan and Adabre (2019) note, real estate developments that integrate structured PM frameworks are more likely to achieve higher valuation outcomes and market acceptance.

2.3 Adoption of Project Management Techniques in Developing Economies

Adoption of PMP in developing countries, including Nigeria, is influenced by factors such as cost of implementation, resistance to change, and lack of technical expertise (Osei-Kyei & Chan, 2017). Empirical studies in Sub-Saharan Africa reveal that many property development firms rely on informal or traditional management approaches, which contribute to delays, cost overruns, and suboptimal project quality (Musa et al., 2023). Similarly, Agboagye et al. (2024) found that in Ghana, low PM knowledge and competence hinder the effective delivery of best practices in infrastructural projects. These findings suggest that while the benefits of structured PM are widely acknowledged, contextual barriers continue to limit its application in emerging markets.

2.4 Impact on Property Valuation and Financial Outcomes

The integration of PMP into property development has implications beyond project delivery, particularly for valuation and financial outcomes. Well-managed projects often achieve higher quality standards, which positively influence their assessed value and attractiveness to investors (Oyebanji et al., 2017). In Nigeria, Oyekunle (2024) and Ikwueze and Ejiofor (2024) reported that cost control and scheduling tools directly reduce risks associated with valuation inaccuracies and investment uncertainty. Moreover, Adafin, Rotimi, and Wilkinson (2016) argue that structured project execution enhances credibility with financiers and regulatory agencies, thereby improving access to capital for developers. Project Management Techniques are also able to positively influence performance outcomes at project and firm-levels

(Li, Mathur and Jugdev, 2025). This highlights the strategic role of PM in bridging the gap between technical performance and financial viability in property development.

2.5 Challenges in Implementation

Despite the recognized benefits, several challenges continue to hinder the widespread adoption of PMT in property development. High implementation costs and resistance to change among professionals are common obstacles (Osei-Kyei & Chan, 2017). In Nigeria, studies have identified inadequate training, institutional weaknesses, and poor enforcement of professional standards as key barriers (Nwaki and Eze, 2020; Musa et al., 2023). These challenges suggest that for PM to be fully integrated into the real estate sector, there is a need for both capacity building and supportive institutional reforms.

2.6 Existing Reviews and Research Gap

Previous studies such as Unegbu, Yawas, and Dan-asabe (2021; 2022), have assessed the integration of project management practices in the Nigerian construction and development sector, as well as its relationship to project risk management, scheduling, cost control, and organizational performance (Iroha, Watanabe, and Tsuchiya, 2024a; 2024b). Other studies like Ebekozien et al. (2023a; 2023b) have highlighted the impact of project management systems on mitigating construction delay, enhancing procurement processes, and limiting inefficiencies in the Nigerian construction industry. However, Akintola, Aderinlewo, and Akande (2024) asserted that the Nigerian construction and development industry is plagued by project management challenges such as design errors, poor communication, poor workmanship, challenges of cost management, short supply of skilled staff, limitations in time management, a harsh economic situation, and bribery and corruption. The absence or failure of existing project management practices and framework have contributed in part to poor housing development and delivery in Nigeria (Odoyi and Riekkinen, 2022; Faremi et al., 2023).

While existing literature has focused greatly on general construction management in property development, limited studies have highlighted on the integration of PMT in the real estate affairs of property acquisition and development in Nigeria. Existing studies have also not assessed the unique relationship between the project performance indicators, PMT adoption, and valuation outcomes when combined within a single analytical framework. Extant studies assess project delivery performance separately from the valuation and financial implications, which creates a gap in understanding the impact of structured project management on the market credibility, investment value and valuation accuracy of real estate projects.

This study addresses this gap by empirically investigating the extent of PMT adoption among real estate professionals and examining its influence on project delivery efficiency and valuation outcomes in the Nigerian property sector. By integrating technical project-performance indicators with valuation-related measures, the study contributes to the growing discourse on professional project-management application in emerging real estate markets.

2.7 Conceptual Framework

Based on the reviewed literature, this study conceptualizes Project Management Techniques (PMT) as the independent variable, while project outcomes (time, cost, and quality performance) and valuation outcomes (property value, investment return, and market performance) are treated as the dependent variables. The adoption challenges, including high cost, resistance to change, lack of technical expertise, and limited institutional support, serve as moderating factors that influence the strength of the relationship between PMT and development outcomes.

The framework suggests that the effective adoption of project management enhances both technical and financial performance, thereby improving valuation accuracy and promoting sustainable property development.

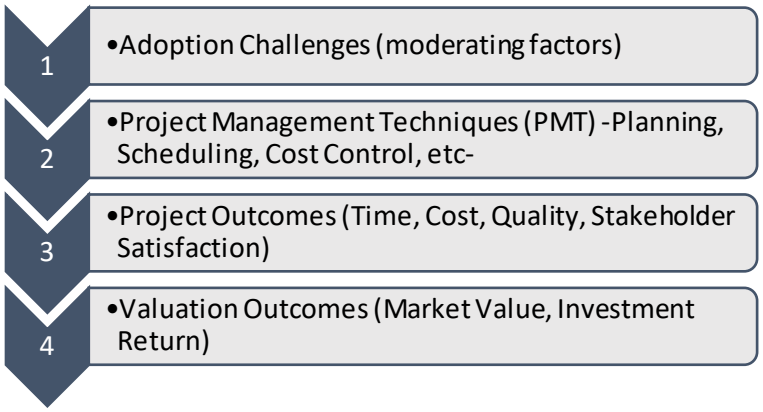

Figure 1 *illustrates the hypothesized relationships among the study variables*
(Source: Author's concept)

Building on this conceptual foundation, the present study employs a quantitative survey design to empirically test the relationships between project management adoption, project performance, and valuation outcomes in Nigeria's real estate sector. The model specifically examines whether the adoption of formal project management techniques significantly predicts improvements in project delivery efficiency and property valuation performance, as suggested by previous studies.

3.0 METHODOLOGY

3.1 Method and Techniques

This study adopted a quantitative survey research design to investigate the adoption of Project Management Techniques (PMTs) and their influence on project performance and valuation outcomes in real estate development in Nigeria. The quantitative approach was suitable because it allowed for objective measurement and statistical evaluation of the relationship between project management practices and project success indicators, including time efficiency, cost control, quality improvement, and valuation performance (Bryman, 2016).

The population consisted of estate surveyors and valuers, project managers, and property developers actively engaged in real estate development projects in Nigeria. A purposive sampling technique was used to select professionals with at least three years of experience in project management or real estate development. Out of the 150 structured questionnaires distributed, 102 valid responses were retrieved, representing a 68% response rate, which was deemed sufficient for quantitative analysis.

The data collection instrument was a structured questionnaire designed to capture four core dimensions: respondents' demographic characteristics, level of PMT adoption, project performance indicators, and valuation or financial outcomes. The instrument assessed the use of PM tools such as Gantt Charts, Critical Path Method (CPM), Program Evaluation and Review Technique (PERT), risk management frameworks, and cost management systems. All responses were measured using a five-point Likert scale (Likert, 1932) ranging from 1 (*strongly disagree*) to 5 (*strongly agree*).

A pilot test was conducted to assess the reliability of the instrument. The resulting Cronbach's Alpha value of .889 indicated high internal consistency, confirming that the items reliably measured the study constructs.

Ethical considerations were strictly observed. Informed consent was obtained from all participants, and data confidentiality and anonymity were maintained. The information gathered was used solely for academic and research purposes, in accordance with standard ethical guidelines.

3.2 Data Analysis Techniques

Data were coded and analysed using the Statistical Package for the Social Sciences (SPSS, version 25). The analytical process was guided by the study objectives and consisted of both descriptive and inferential statistical methods. Descriptive statistics, including mean, standard deviation, frequency, and percentage, were employed to summarize respondents' demographic characteristics and levels of PMT adoption. Reliability analysis was conducted using Cronbach's Alpha to confirm the internal consistency of the questionnaire items. Pearson's correlation analysis was used to determine the strength and direction of the relationship between PMT adoption and project performance variables such as time, cost, and quality efficiency. Linear regression analysis was performed to examine the predictive influence of PMT adoption on valuation outcomes, with results reported in terms of β coefficients, standard errors (SE), adjusted R^2 values, F-statistics, and 95% confidence intervals (CIs). Statistical significance was established at $p < .05$. The analytical framework ensured that each research objective was tested empirically, providing a clear basis for interpretation and discussion of results.

4.0 RESULTS AND DISCUSSION

4.1 Data Preparation

Reliability testing using Cronbach's alpha confirmed the internal consistency of the structured questionnaire. The coefficient ($\alpha = .889$) across 24 items indicates a high level of reliability, making the instrument suitable for further statistical analysis.

4.2 Respondents' Profile

Table 1 shows that out of 150 questionnaires distributed, 102 were completed and returned, yielding a 68% response rate. The demographic data revealed that 82.4% of respondents were male and 17.6% were female. The majority (70.6%) were aged 50 years and above. In terms of professional distribution, 88.2% were estate surveyors, 5.9% property developers, and 5.9% project managers. Furthermore, 70.6% had over 15 years of professional experience. This profile indicates that the study captured responses from experienced professionals, lending credibility to the results.

Table 1 Respondents' Profile

S/N	Category	Options	Frequency	*Percentage*
1	Sex	Female	18	*17.6*
		Male	84	*82.4*
		Total	**102**	***100***
2	Age Bracket	30-39	12	*11.8*
		40-49	18	*17.6*
		50 years and above	72	*70.6*
		Total	**102**	***100***
3	Professional Role	Estate Surveyor	90	*88.2*
		Property Developer	6	*5.9*
		Project Manager	6	*5.9*
		Total	**102**	***100***
4	Years of Experience in Real Estate Development	11-15 years	6	*5.9*
		5-10 years	12	*11.8*
		Above 15	72	*70.6*
		Less than 5	12	*11.8*
		Total	**102**	***100***

4.3 Adoption of Project Management Techniques

Table 2 is a Descriptive statistic indicating varying levels of PMT adoption. Cost management tools had the highest adoption level (M = 4.24, SD = 0.88), followed by risk management frameworks (M = 4.12, SD = 1.14) and the Critical Path Method (M = 3.94, SD = 1.22). Gantt charts were the least adopted (M = 3.29, SD = 1.18). These findings suggest that project teams prioritize cost and risk management tools, while the use of advanced scheduling techniques remains limited. This pattern is consistent with Nwaki and Eze, (2020), who reported uneven awareness of PMT among Nigerian professionals.

Table 2 Respondents' Adoption of Project Management Techniques

Project Management Techniques	N	Mean	Std. Deviation
7. My organization uses formal project management techniques in property development.	102	3.53	1.096
8. Gantt charts are commonly applied in project planning and scheduling.	102	3.29	1.182
9. The Critical Path Method (CPM) or PERT is used to manage project timelines.	102	3.94	1.217
10. Risk management frameworks are integrated into project decision-making.	102	4.12	1.137
11. Cost management tools are employed throughout project execution.	102	4.24	.881

4.4 Project Performance Indicators

Table 3 below, the analysis of project performance revealed that PMT adoption contributes positively to time, cost, and quality outcomes. Respondents rated improvements in timely completion (M = 4.29, SD = 0.67), cost reduction (M = 4.00, SD = 1.09), and quality enhancement (M = 4.24, SD = 0.65) as significant benefits of PMT integration. The observed improvement in quality performance implies that structured PMT adoption enhances compliance monitoring, material approval procedures, and defect-control mechanisms during project execution. Effective quality-management systems reduce occurrences of non-conformance, construction defects and rework, thereby improving both technical project delivery and market perception of completed developments (Curic Lalic et al., 2022; Agbejule and Lehtineva, 2022).

Table 3 Respondents' Responses on Project Performance Indicators

Project Performance Indicators	N	Mean	Std. Deviation
13. The use of project management improves the timely completion of projects.	102	4.29	.669
14. Project management techniques help to reduce cost overruns.	102	4.00	1.090
15. The quality of completed real estate projects improves with project management.	102	4.24	.648

4.5 Correlation Analysis

Table 4 revealed strong positive associations between specific PMTs and overall project performance: cost-management tools ($r = .843$, $p < .001$) and risk-management frameworks ($r = .831$, $p < .001$). CPM/PERT and Gantt charts showed moderate positive correlations ($r = .555$ and $r = .519$, respectively, $p < .001$). (Atkinson, 1999; Davis, 2017).

Table 4 Correlation Between PMT Adoption and Project Performance Indicators (n = 102)

PMT Variable	r	p	Interpretation
Cost management tools	.843	< .001	Strong positive relationship
Risk management frameworks	.831	< .001	Strong positive relationship
Critical Path Method / PERT	.555	< .001	Moderate positive relationship
Gantt charts	.519	< .001	Moderate positive relationship

Note. PMT = Project Management Techniques. Correlation coefficients are significant at $p < .05$ (two-tailed).

4.6 Regression (PMT Adoption Predicting Valuation Outcomes)

Table 5 shows a simple linear regression conducted to examine the predictive influence of PMT adoption on valuation outcomes. The model was statistically significant, $F(1,100) = 35.57$, $p < .001$, explaining 26.2% of the variance in valuation outcomes ($R^2 = .262$, adjusted $R^2 = .254$). The standardized regression coefficient for PMT was $\beta = 0.48$ (SE = 0.08, $t = 5.96$, $p < .001$, 95% CI [0.32, 0.64]), indicating that a one-unit increase in PMT adoption leads to a .48 standard deviation increase in valuation performance. These results affirm that greater PMT adoption enhances valuation precision, project credibility, and market acceptance. This supports findings by Oyebanji et al. (2017), who noted that professionally managed projects attract higher investor confidence and long-term value sustainability.

Table 5 Regression Analysis Summary for PMT Predicting Valuation Outcomes

Predictor	β	SE	t	p	95% CI (LL–UL)	R^2	Adjusted R^2	F (1,100)
PMT Adoption → Valuation Outcomes	0.48	0.08	5.96	< .001	[0.32, 0.64]	.262	.254	35.57

Note. PMT = Project Management Techniques. CI = Confidence Interval; LL = Lower Limit; UL = Upper Limit. Dependent variable: Valuation outcomes. All coefficients are significant at $p < .001$.

4.7 Challenges in PMT Adoption

The main barriers to PMT adoption in property development included lack of awareness ($M = 3.76$, $SD = 1.12$), high implementation costs ($M = 3.71$, $SD = 0.90$), resistance to change ($M = 3.71$, $SD = 1.08$), and limited technical expertise ($M = 3.65$, $SD = 1.03$). These findings highlight the need for professional development programs, continuous education, and supportive institutional frameworks to encourage broader PMT implementation in Nigeria's real estate sector.

Table 6 Challenges in Adoption

Challenges in Adoption	N	Mean	Std. Deviation
22. Lack of awareness of project management techniques	102	3.76	1.12
23. High cost of implementing project management systems	102	3.71	0.90
24. Resistance to change among professionals	102	3.71	1.08
25. Limited Technical Expertise or training	102	3.65	1.03

■5.0 DISCUSSION

The findings of this study provide empirical support for the proposition that adoption of Project Management Techniques (PMT) is positively associated with improved project performance and enhanced valuation outcomes. The regression result ($\beta = 0.48$, $p < .001$; $R^2 = .262$, adjusted $R^2 = .254$) indicates a moderate-to-strong predictive relationship: higher levels of PMT adoption are associated with better valuation outcomes, with PMT explaining about 26% of the variance in valuation performance. This result aligns with the conceptual expectation that structured project controls translate into more reliable delivery and, consequently, more accurate and market-credible valuations (Atkinson, 1999; Kerzner, 2023).

The particularly strong correlations observed between cost-management tools and overall project performance ($r = .843$) and between risk-management frameworks and project performance ($r = .831$), corroborate prior empirical evidence that cost control and risk mitigation are central mechanisms through which project management improves outcomes (Oyekunle, 2024; Ikwueze and Ejiofor, 2024; Adafin, Rotimi, & Wilkinson, 2016). These relationships reflect established project-management theory that effective budgeting, monitoring, and risk identification reduce uncertainty, limit overruns, and enhance the likelihood of achieving planned quality and timeliness (Kerzner, 2019; Atkinson, 1999).

The findings also buttress the importance of quality-management systems embedded within PMT frameworks. The systematic nature of project-management actvities support structured material approval processes, inspection protocols, documentation compliance, and NCR reporting mechanisms, which collectively improve construction quality and reduce operational inefficiencies. Previous studies have shown that poor quality-control systems contribute significantly to project rework, financial losses, and delays in construction projects (Love and Matthews, 2020). Thus, the positive relationship between PMT adoption and project performance observed in this study may in part, reflect improved quality assurance and compliance monitoring throughout the project lifecycle.

The finding that advanced scheduling tools (e.g., CPM/PERT) and formal risk frameworks are less widely adopted than cost-control practices also matches earlier studies in developing contexts, which note uneven adoption of PMT, in that practitioners often prioritise visible, immediate controls (cost and basic scheduling) while more technical or institutionalized tools lag because of awareness and capacity constraints (Nwaki and Eze, 2020; Musa et al., 2023). Literature from Sub-Saharan Africa similarly highlights institutional and resource barriers to full PMT uptake, reinforcing our observation that contextual factors moderate the PMT outcome linkage (Agboagye et al. 2024, 2010; Osei-Kyei & Chan, 2017).

By linking PMT adoption to valuation outcomes, this study extends and corroborates work suggesting that better-managed projects command higher market acceptance and investment returns (Oyebanji et al., 2017; Adafin et al., 2016). The implication is twofold: (a) PM practices improve the technical delivery of assets (time, cost, quality) and (b) these technical improvements are observable (or perceived) in the market as higher valuation accuracy and investor confidence. Nevertheless, the R^2 value indicates that roughly three-quarters of the variance in valuation outcomes remains unexplained by PMT alone, pointing to the influence of other factors, such as market conditions, location, macroeconomic variables, developer reputation, and regulatory environment, that future studies should integrate (Cohen, 1988; Field, 2018).

The study's corroborated pattern of findings has practical and policy significance. Where cost and risk frameworks are already in use and shown to relate strongly to outcomes, targeted interventions, such as training, certification, and low-cost digital tools, could accelerate uptake of CPM/PERT and advanced scheduling, thereby strengthening the PMT valuation pathway (Pallant, 2020; Kerzner, 2019). Institutional reforms and capacity-building measures called for in the literature (Nwaki and Eze, 2020; Osei-Kyei & Chan, 2017) are therefore well justified by the present results.

Finally, the findings must be interpreted within the study's constraints. The cross-sectional survey design supports inference about association and prediction but does not establish causality. The sample composition, dominated by experienced estate surveyors, may limit generalisability to other actor groups (developers, contractors) and contexts. Self-reported measures can introduce common-method bias, and the model's unexplained variance suggests the need for multivariate designs that include market and project characteristics. Future research using longitudinal data, broader stakeholder samples, and multivariate models (e.g., SEM) would strengthen causal inference and clarify mediating/moderating pathways (Creswell & Creswell, 2018; Pallant, 2020).

6.0 CONCLUSION

This study examined the adoption of project management techniques (PMTs) and their influence on project performance and valuation outcomes in real estate development. The findings revealed a strong internal consistency of the research instrument (Cronbach's $\alpha = .889$), indicating reliability of the responses used for analysis. The respondent profile showed that most participants were experienced estate surveyors with over 15 years of professional practice, suggesting that the data reflected informed industry perspectives.

The analysis demonstrated that while traditional tools such as cost and scheduling management systems were widely adopted, more advanced techniques like the Critical Path Method (CPM), PERT, and structured risk management frameworks were less frequently utilized. Nonetheless, there was a significant positive correlation between PMT adoption and project performance indicators such as timely completion, cost control, and quality enhancement. Regression analysis further revealed that project management adoption significantly predicted valuation outcomes ($\beta = .477$, $R^2 = .262$, $p < .001$), implying that projects executed under structured management frameworks achieved higher market acceptance and investment value.

The results affirm that systematic application of project management principles enhances real estate project efficiency, reduces cost and time overruns, and strengthens asset valuation accuracy. However, challenges such as limited awareness, high implementation costs, resistance to change, and inadequate technical expertise continue to constrain full adoption of PMTs among professionals.

In conclusion, the study underscores the necessity for greater institutional support, professional training, and awareness campaigns to mainstream project management techniques in the Nigerian real estate sector. Integrating PMTs into standard development practices can lead to more sustainable, cost-effective, and value-driven project outcomes. By bridging the gap between traditional methods and modern project management practices, the real estate industry can achieve higher efficiency, investor confidence, and long-term sustainability.

Based on the findings and conclusions of this study, several practical and policy recommendations are proposed to enhance the adoption and effective utilization of project management techniques (PMTs) in real estate development:

1. Professional Training and Capacity Building: Industry associations (e.g., NIESV) should collaborate with project management institutes to provide continuous training and certification in CPM, PERT, risk management, and digital PM tools.
2. Curriculum Integration: Universities should embed practical PM modules in Estate Management and related programmes to equip graduates with contemporary PM competencies.
3. Policy Support and Institutional Frameworks: Regulatory bodies should develop guidelines encouraging the application of PM standards in real estate projects, including simple enforcement mechanisms and incentives.
4. Adoption of Cost-Effective Digital Tools: Firms should consider affordable cloud-based PM platforms and gradual BIM adoption to improve collaboration, reduce rework, and enhance schedule adherence.
5. Awareness Campaigns and Change Management: Professional bodies should publicize demonstrable success stories showing how PMT integration improves delivery and valuation, reducing resistance to change.

6. Further Research and Continuous Evaluation: Encourage longitudinal, multi-stakeholder research (including contractors, financiers) and advanced statistical modelling to unpack causal pathways between PM adoption, project delivery, and valuation outcomes.

Strengthening PMT adoption in the Nigerian real estate sector requires a holistic approach that combines professional training, policy reinforcement, digital innovation, and continuous evaluation. By implementing these recommendations, stakeholders can enhance project delivery outcomes, foster investor confidence, and promote sustainable real estate development.

The cross-sectional design within this study limits causal inference. The sample, dominated by experienced estate surveyors may constrain generalizability to other stakeholders. Self-reported data may introduce common-method bias. Future studies should pursue longitudinal designs, include broader stakeholder samples and consider multivariate techniques (e.g., SEM) to investigate mediators and moderators (e.g., market conditions, firm size, digital adoption).

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Conflict of Interest

The authors declare that there is no conflict of interest regarding the publication of this paper.

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