

Project Management and Performance of Residential Construction Projects in Nairobi City County, Kenya

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Abstract

Project management help ensure the efficient and effective performance of projects. Consequently, in the last five years, Nairobi City County has witnessed numerous residential buildings collapsing due to poor project performance. Besides, limited studies have studied the project management practices that residential construction project managers should adopt to boost project performance as far as Nairobi city county is concerned. Therefore, the proposed study aims to investigate how project management practices affect the performance of construction projects in study area, especially in residential spaces. In realizing this aim, the study focused on realizing the objective of project stakeholder management on the performance of construction projects. The stakeholder theory informed the study's variable. The variables examined were project stakeholder management (independent variable) and project performance (dependent variable). The descriptive research design guided the data collection and analysis processes. Data was collected from the targeted 50 residential construction projects completed within the last five years across Nairobi City County. The respondents comprised the targeted projects' contractors, project managers and NCA employees. Semi-structured questionnaires were the primary data collection instruments, where the researcher administered questionnaires to the selected respondents to ensure the gathering of qualitative and quantitative data. 282 respondents participated in the study, who completed and returned the instruments after administration. A pilot test and the Cronbach alpha values for all the study variables met the recommended 0.70 threshold, guaranteeing reliability. The proposed study aimed to ensure that the questionnaires maintained great extents of sampling, construct, and face validity. The obtained data was analyzed using thematic analysis for the qualitative data and descriptive and inferential statistical analyses. Findings indicated that stakeholder management positively affect project performance, with project resources scheduling having the greatest influence. The study emphasized the importance of effective resource allocation, timely regulatory compliance, and strong stakeholder engagement in achieving project success. Recommendations included adopting digital tools for resource management, appointing a regulatory liaison, implementing continuous quality improvement frameworks, and using digital platforms for stakeholder engagement. Future research could explore the influence of leadership styles and external economic factors on project performance.

Keywords: *Project stakeholder management, project resources, organisational performance*

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1. Introduction

Gituro and Mwawasi (2016) underscore the common challenges of in project management of construction projects that majorly affects developing regions such as Kenya. They specifically highlight the Kenya National Highways Authority (KeNHA), which has recorded significant challenges in their project management, particularly in road construction projects. Other researchers, such as Bordat *et al.* (2014), Kwatsima (2016), and Seboru (2015), have examined various facets of construction projects in Kenya, including those in Meru County, large-scale construction projects, and road construction projects. In recent times, the government of Kenya has intensified its focus on the construction industry, driven by initiatives such as the Big 4 Agenda. This agenda places affordable housing and structural development on the frontline of the nation's economic priorities. With this heightened government concentration, county governments and the private sector have initiated various efforts to support and actively engaged in the development endeavor.

The low PMP utilization is especially low in the construction industry in Nairobi. Mwanza *et al.* (2020) attributed the poor performance and stalled, dilapidated structures in construction projects to the lack of sufficient knowledge of PMP among project managers. Besides, Njau and Omwenga (2021) that all construction projects experience quality, cost, and time constraints. As such, undergoing delays is perceived as common practice in the construction industry. These disruptions and delays are among the riskiest, complex, and costly problems adversely impacting construction project success. However, the negative effects of delays and disruptions can be mitigated by integrating project management practices, especially project communication, planning, resource scheduling, and stakeholder management into the construction projects.

In developing countries, including Kenya, projects often face challenges due to their integration with the routine operations of organizations with limited project management capacity (Jebb, Ng, & Tay, 2021). Moreover, corruption exacerbates these challenges, complicating project management efforts (Awuor & Daniel, 2020). Jebb, Ng, and Tay (2021) highlight several common hurdles in project management within developing countries, including poor support infrastructures, limited technological advancements, inadequate capacity within implementing institutions, unreliable communication channels, deficient documentation processes, high turnover rates among leadership and workers, and a lack of accountability and transparency.

In Kenya, many publicly funded projects encounter difficulties or remain incomplete due to various factors. This research endeavours to explore the aspects determining the adoption of project management in publicly financed projects against the backdrop of these challenges. The findings of Njau and Omwenga (2021) have a far-reaching impact on the completion time and the high cost of construction projects in Kenya. There is a gap in compliance with statutory and industry requirements, which affects construction projects in Kenya, as these influence the realization of value for money. These regulatory compliances are created by the Government through an Act of Parliament and regulations/rules developed by professionals in the construction industry bodies. There are very many government regulations that govern the various construction projects approved and put up in the country such as the Architectural Association of Kenya, National Construction Authority, Professional Quantity Surveyors' Act, the Engineer's Board of Kenya, and the Institute of Quantity Surveyors of Kenya (Kiage, 2023).

In addition, Muute (2019) and Muute and James (2019) stipulated that multiple projects in Nairobi City County have not been finished in the recommended record time due to financial resources and human capital challenges. The studies further asserted that most project

managers prioritized allocating time and financial resources to tackle immediate challenges rather than preparing and anticipating future ones. Complementarily, Aghania, Ramzani, and Rau (2019) found quality, cost, and time management within the project's environmental constraints as the most cited project management primary concerns. Besides, the study found the Kenyan construction industry's project management is still rudimentary, leading to project performance failures. The proposed study explored the effect of project management practices on the performance of residential construction projects in Nairobi City County, Kenya.

2. Literature Review

2.1 Theoretical Review

The stakeholder's theory was staged by Freeman's (1984) "A Stakeholder Approach" works. Freeman maintained that a firm has numerous parties that influence organizational operations (Freeman, Dmytryiev, & Phillips, 2021). The theory accounts for all the organizational stakeholders and stresses the significance of considering their inputs and interests for a successful project. Over the years, the theory has developed into multiple taxonomies. These taxonomies consist of the instrumental stakeholder theory, descriptive stakeholder theory, and normative stakeholder theory. The instrumental stakeholder theory concentrates on how the spearheads need to execute their duties in the entity's best interest (Naeem *et al.*, 2018). The descriptive stakeholder theory emphasizes the magnitude of the managers' actual behaviour and how they view their actions and roles (Mahmoud, 2014). Lastly, the normative stakeholder theory underlines how the stakeholders and managers should assess the purpose of the organization's existence based on ethical principles (Donaldson, 1995). Despite their differences, the taxonomies stress the significance of involving stakeholders and valuing their inputs in an organization.

One key proposition of stakeholder theory is the recognition that organizations have multiple stakeholders, including employees, customers, suppliers, communities, and the environment (Mary, 2015). This acknowledgment challenges the traditional focus on shareholders as the primary stakeholders and emphasizes the interconnectedness of business with various societal groups. The theory suggests that by the active involvement of stakeholders and emphasizing their stake, organizations can create long-term value. Rather than pursuing short-term gains for shareholders, stakeholder theory advocates for sustainable practices that benefit the broader community and ecosystem. On the other hand, stakeholder theory acknowledges that stakeholders may have conflicting interests. Lubis (2021) argues that managing these conflicting interests can be challenging, and the theory does not provide clear guidance on how to prioritize or resolve competing stakeholder claims.

The theory's emphasis on the significance of incorporating the various stakeholders' interests and inputs in enhancing project success demonstrates that the theory can be applied in the proposed study in comprehending the effect of project stakeholder management on the performance of residential construction projects. Project managers use stakeholder mapping techniques to categorize stakeholders considering their rate of influence, interest, and involvement in the project. This includes providing relevant information, seeking feedback, and involving stakeholders in decision-making processes when appropriate.

2.2 Empirical Review

Demirkesen and Reinhardt (2021) investigated the effect of stakeholder engagement on Poland's government projects' performance. The study considered a descriptive design and a population of 13 government projects. The project managers and support staff of the 13 projects encompassed the study's unit of analysis. The utilized research instrument entailed

questionnaires. The research findings depicted stakeholder involvement as a vital project performance contributor. The study's regression outcomes indicated a significant positive correlation between project performance and stakeholder involvement. Alternatively, the research found that the absence of stakeholder involvement resulted in more resistance within or insufficiently established techniques.

Atamba (2016) evaluated the influence of stakeholder management on integrated financial management information system project success. The study employed a sample of 95 respondents and a descriptive research design to realize the set research objectives. The results indicated that the IFMIS project had widely adopted stakeholder management by resolving any stakeholders' complaints, providing sufficient personnel for the project, integrating stakeholders' views, and communicating with stakeholders. However, the study also demonstrated a need to tackle the overall stakeholder experience, knowledge gaps, and how the multiple stakeholders are categorized.

Nguyen and Mohamed (2020) evaluated the mediation impact of managing stakeholders with consideration of project performance and stakeholder elements. The study employed structural equation modelling for the data analysis procedure. The study established efficient stakeholder management as a successful element for projects. The study also demonstrated the rising intricacy of the relationship among stakeholders and their numerous characteristics, including interests and power, making stakeholder management increasingly difficult. The study results further found stakeholders' conflicting interests, opposing behaviour, and legitimate behaviour as negatively impacting the qualitative and quantitative project performance. However, effective stakeholder management helped eradicate the negative influence of the mentioned stakeholder behaviors on qualitative project performance measures.

Maina and Kimutai (2018) investigated the impact of stakeholder management on open-air market projects' performance in Nyeri County. The study utilized both explanatory and descriptive research designs and targeted six Economic Stimulus Programme-funded open-air projects in the region. The participants consisted of local authorities, project staff, the general public, vendors, and project managers. Primary data collection happened through questionnaire usage. The obtained outcomes reflected a significant relationship between the study variables that were being invested including project performance and stakeholder management.

H₀: There is no relationship between project stakeholder management and the performance of construction projects in Nairobi City County, Kenya.

3. Methodology

The research design entails a researcher's selected framework for research techniques and methods to carry out a study (Mishra & Alok, 2022). The design permits researchers to establish their studies for success and sharpen the research methods fitting for the subject matter. The proposed study adopted a descriptive research design, which is typically employed when researchers aim to systematically describe and present the characteristics of a phenomenon or the relationship between variables. This type of research design is chosen when the primary goal is to provide an accurate account or depiction of the current state of affairs, without manipulating or intervening in the research subjects.

The target population entails an entire group of individuals, events, or projects from which a researcher intends to gather data and draw conclusions (Pandey & Pandey, 2021). The target population is above 15,282 completed projects in Nairobi City County, including Enroque, Wood Avenue Apartments, Amara Ridge, Taraji Heights, Applewood, Kings Boma Estate, Cascadia Apartments, and many more. Moreover, the study aimed to include Nairobi County

Housing executives and contractors registered with the NCA as the unit of analysis, particularly those overseeing projects within the city county. Given their familiarity with residential building compliance practices mandated by the ministry and the authority, they were deemed best suited to address the research inquiries.

Consequently, the sample size for this study was determined to be 389 prospective respondents, as outlined in table 3.1 below. This has been derived from 50 completed projects in Nairobi City County as demonstrated by Goddard and Melville's (2004) abridged formula for determining the expected sample size.

Simple regression model demonstrating the relationship between the variables for a statistical analysis. Through the simple regression analysis, the study determined the strength and direction of the relationship between project stakeholder management and the performance of residential construction projects. The model encompassed project stakeholder management being regressed with organisational performance as shown below:

$$\text{Organisational Performance} = \beta_0 + \beta_1 \text{Project stakeholder management} + \varepsilon$$

Primary data was gathered through the questionnaires. Questionnaires are appropriate because they permit the data collection process to cover a larger number of participants as desired (Harris *et al.*, 2019). The questionnaire had three sections. Specifically, it had open-ended questions for qualitative data, and closed-ended questions to gather quantitative data. Such a comprehensive approach provided a more holistic understanding of the research topic.

A pilot study was considered for this research. The researcher adopted a pilot test to gauge the questionnaire's suitability in gathering data on the effect of PMP on the performance of construction projects in the study area. Then, the researcher amended the questionnaire accordingly based on insights acquired during the pilot test.

As emphasized by Mishra and Alok (2022)), ethical standards play a vital role in fostering trust between the research study and the targeted respondents. First, the study ensured ethical approval by acquiring a research approval letter from Kenyatta University and a research permission document from NACOSTI before the data collection procedure. Second, the study informed the respondents that their involvement was voluntary and that they could choose not to be part of the study at will without any repercussions. Lastly, the study required the respondents' consent after informing them that the collected data would only be utilized for academic purposes.

4. Results and Discussion

The study focused on 282 respondents who completed and returned the data collection tools successfully, constituting a response rate of 72.49 percent. 27.51 percent of the tools were either uncompleted or unreturned. The 72.49 percent response rate is adequate for the study. This is based on the recommendation by Linsey (2019) that anything above 70 percent is an adequate response rate that can be examined for a study. This high response rate strengthens the reliability of the findings. Table 4.1 below and Figure 4.1 depicts the response rate of this study.

4.1 Sample Measures

The analysis incorporated descriptive measures, encompassing means, standard deviation, and percentages. These descriptive measures were aligned with the study's objectives, specifically aimed at investigating the effect of project stakeholder management (as an aspect of project management practices) on the performance of construction residential projects in Nairobi City County, Kenya. The aggregate mean score for the sub-variables of project stakeholder

management is 3.0984 and a subsequent standard deviation is 1.23002. This is further represented in Table 1 below.

Table 1: Descriptive Statistics showing the effect of the project stakeholder management on the project performance of residential construction projects

Statements	N	Min	Max	Mean	Std. Deviation
The existent monitoring of stakeholder engagement positively impacts the overall performance of residential construction projects	282	1.00	5.00	3.6552	1.18960
Management of stakeholder engagement contributes to the successful completion of residential construction projects	282	1.00	5.00	4.1473	1.27479
There is thorough planning of stakeholder engagement that has influenced the overall success of residential construction projects	282	1.00	5.00	2.7389	1.29194
There is accurate stakeholder identification that has contributed to the overall success of residential construction projects	282	1.00	5.00	1.8522	1.16374
Aggregate Score	282			3.0984	1.23002

From Table 1 above, it can be determined that monitoring stakeholder engagement was seen as positively influencing project performance, with a mean of 3.6552. Respondents believe effective monitoring can lead to enhanced project performance. This outcome emphasizes continuous engagement as vital for adapting to changing stakeholder needs. Stakeholder engagement management had the highest mean of 4.1473. This showed a strong consensus on the significance of actively managing stakeholder relationships. Organizations should prioritize enhancing their stakeholder management practices to leverage these benefits consistently. Planning of stakeholder engagement had a lower mean of 2.7389, and accurate stakeholder identification received the lowest mean of 1.8522, indicating room for improvement in these areas. Respondents' perceptions that thorough planning has less influence on project success may indicate a lack of structured approaches to stakeholder planning in residential construction. This finding suggests an urgent need for construction firms to implement more systematic planning processes to ensure stakeholders are identified and engaged effectively from the outset. This is consistent with the findings of Muthoni (2022) emphasizes that effective stakeholder management leads to better project outcomes by ensuring that stakeholder needs and expectations are met. The strong mean score for the management of stakeholder engagement (4.1473) echoes findings from Gituro and Mwawasi (2016), which indicate that proactive stakeholder management significantly contributes to project completion. This suggests that practices focused on active management are vital for achieving project goals, corroborating my findings.

Residential construction projects can implement several opinions and key strategies as suggested by various respondents. Content analysis revealed the need for enhanced collaboration and communication. Many respondents emphasized the role of stakeholder

management in fostering better collaboration and communication among project teams and stakeholders. One said, "Effective stakeholder engagement leads to open lines of communication, which helps to resolve issues quickly and keeps the project on track." This highlights how strong stakeholder relationships can mitigate misunderstandings and facilitate teamwork, ultimately improving project efficiency. Secondly, the theme of risk mitigation was dominant. Respondents pointed out that proactive stakeholder management can significantly reduce risks associated with project execution. A respondent indicated, "When stakeholders are involved early on, potential issues can be identified and addressed before they escalate, which is crucial for minimizing risks." This suggests that involving stakeholders in the planning process helps anticipate challenges and develop strategies to manage them, thereby enhancing overall project stability. Other themes were improved stakeholder satisfaction and innovation creativity. This agrees with the finding of Kimaru and Maitho (2021) that stakeholder satisfaction can impact not only project success but also the organization's reputation and future opportunities in the sector. Also, there is a value of diversity in stakeholder engagement ensured through creativity, suggesting that collaboration can lead to innovative approaches that might not emerge in more isolated settings.

4.2 Test of Hypothesis

Simple regression analysis was utilized to perform a statistical test to establish the relationship between the study variables. Balanced organizational controls was regressed on performance as shown by the coefficients in Table 2.

Table 2: Regression Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	0.406	.266		9.699	.000
Project stakeholder management	.444	.066	-.050	-.676	.021

a. Dependent Variable: Organizational Performance

The researcher did a simple regression analysis to establish the relationship between the dependent and independent variables in this research. Based on the SPSS generated table above, the simple regression model is summarized as: $Y = 0.406 + 0.444X_1$; where Y is the dependent variable (organisational performance), and X_1 is project stakeholder management. The performance that was expected when project stakeholder management was assumed to influence all the factors was 44.4 percent. This meant that for every unit of project stakeholder management, the performance was expected to improve by 0.444. The regression model can therefore be extrapolated as follows:

$$\text{Organisational performance} = 0.406 + 0.444 \text{ Project stakeholder management}$$

Furthermore, the regression coefficients show that project stakeholder management is ($p = .021$). As evidenced by the coefficient, this has a positive and significant relationship with the performance of residential construction projects. The Beta coefficients indicate the relative impact of the predictor variable on the dependent variable while controlling for differences in the scale of measurement. From the standardized coefficients, it was evident that project stakeholder scheduling was the significant and influential variable with a coefficient of 0.021.

5. Conclusion

The findings of this study underscore the importance of project management practices in enhancing the performance of residential construction projects. The study utilized a descriptive research design to inform the collection of data from various employees from 50 residential construction projects that were randomly selected in Nairobi city county. The research objective focused on the relationship between project stakeholder management and the performance of residential construction projects in Nairobi City County. The study found a positive and significant relationship between effective stakeholder management and project performance. The study determined that successful stakeholder management – encompassing clear communication, regular engagement, and alignment of stakeholder expectations – plays a critical role in the smooth execution of residential construction projects. When stakeholders, including clients, contractors, regulators, and communities, are actively involved and their concerns addressed, projects are more likely to stay on track, meet deadlines, and fulfill quality standards. Effective management of stakeholder interests also helps mitigate potential conflicts, ensures smoother decision-making, and fosters collaboration, all of which contribute to improved project performance and successful outcomes.

6. Recommendations

As a recommendation, construction projects should implement a proactive stakeholder engagement platform. Construction projects should adopt a digital platform that facilitates real-time stakeholder engagement. This platform would allow all project stakeholders (clients, regulators, contractors, and suppliers) to track progress, raise concerns, and communicate seamlessly throughout the project lifecycle. Proactive stakeholder engagement ensures transparency, improves decision-making, and helps address potential issues early, reducing the risk of conflict and delays due to miscommunication or unmet expectations. Future studies could investigate how different leadership approaches within the project management framework affect the performance of residential construction projects. Scholars could delve deeper into how proactive stakeholder involvement at different phases of the project lifecycle impacts the sustainability and long-term success of residential construction projects.

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