



PROJECT INTEGRATION MANAGEMENT PRACTICES AND PERFORMANCE OF HOUSING PROJECTS IN NAIROBI CITY, KENYA

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ABSTRACT

Housing construction projects in Nairobi City County continue to face significant performance challenges, including time and cost overruns, compromised quality standards, and limited stakeholder satisfaction. Despite the implementation of national housing initiatives under the Affordable Housing Programme, project delivery remains suboptimal. This study sought to investigate the influence of Project Integration Management (PIM) practices on the performance of housing projects in Nairobi City County. The study was guided by Stakeholder Theory and Systems Theory, which views projects as interrelated components requiring holistic integration. The study specifically examined stakeholder engagement and communication and documentation. A descriptive cross-sectional survey design was employed, allowing for the collection of data at a single point in time from a range of project stakeholders. The target population comprised 102 project managers overseeing active and recently completed public, private, and PPP housing projects across Nairobi. Due to the relatively small population size, a census approach was adopted, with all 102 project managers forming the study sample. Data was collected using a semi-structured questionnaire comprising both closed and open-ended questions aligned with the study objectives. The instrument was pre-tested through a pilot study involving 10 project managers, and both validity and reliability was established through expert review and Cronbach's alpha analysis, respectively. No revisions were required, validating the instrument's readiness for the main study. Data was analyzed using SPSS Version 27, with descriptive statistics summarizing PIM practices and inferential techniques, specifically Pearson's correlation and multiple regression, used to test the relationship between PIM dimensions and project performance indicators, including time adherence, cost compliance, and quality outcomes. The study findings revealed that all practices significantly contribute to project outcomes, with communication and stakeholder engagement emerging as the strongest drivers. The study concluded that while stakeholder inclusivity, efficient resourcing, proactive risk management, and technology adoption enhance performance, gaps persist in feedback systems, budget control, institutional learning, and digital capacity. It therefore recommends strengthening structured feedback and conflict resolution, enforcing financial and supply chain discipline, embedding risk training and knowledge transfer, investing in advanced technologies such as BIM, and institutionalizing digital communication and record management. Collectively, these measures would improve accountability, efficiency, and stakeholder satisfaction, ensuring sustainable performance in housing projects.

Key Words: Project Integration Management (PIM) Practices, Housing Projects, Nairobi City County, Stakeholder Engagement, Communication and Documentation

Background of the Study

Every human society requires shelter to fulfill basic need standards, serving as the foundation of dignity and security. The continuous increase in population size and the rapid pace of urbanization in global cities requires immediate action to build satisfactory living facilities. The increased housing market demand faces delays in delivery for developing urban areas due to planning dysfunction, poor stakeholder coordination and inefficient processes (Uddin, 2025). The construction sector demonstrates this contradiction most obviously since inadequate project integration leads to delays and increased costs which results in poor living environments. Housing, as the worldwide construction sector, exemplifies these obstacles most dramatically especially within Nairobi's rapid growth rate. Nairobi serves as both the core economic and capital city of Kenya where it displays both positive potential and negative pitfalls of urban housing development thus providing a vital case to analyze how Project Integration Management (PIM) can deliver improved results across performance and quality and sustainability aspects (Kimari, 2021). The research investigates both world and regional elements of housing construction while emphasizing the necessity to combine approaches which address ongoing performance challenges and increasing residential requirements.

Statement of the Problem

The housing sector of Nairobi struggles to deliver its core development goals because of poor integration management in its building projects despite being Kenya's main urban development focus (Agayi & Karakayacı, 2020). Affordable sustainable housing delivery in Nairobi remains impeded by poor planning shortcomings together with execution and coordination inefficiencies despite construction being a leading sector in the Nairobi economy. Kenya faces critical housing shortages totaling 2 million units because its capital city Nairobi represents the major part of those deficits because of its expanding population and its status as Kenya's economic and urban center (Kiritu, 2025). The city faces a substantial gap between housing needs and construction capabilities because experts predict that the population exceed 7 million by 2030. This situation strains all city resources including infrastructure, service delivery, and available land space.

The government's Affordable Housing Program under the Big Four Agenda together with public and private sector initiatives has not prevented housing projects from delivering inadequate performance results. The coordination issues between implementing parties including authorities, developers, investors and contractors have caused Park Road Ngara and Pangani Redevelopment Scheme to experience time slippages and budget overruns. Khisa & Mutuku (2023) discovered that budget overruns affect 60% of construction projects in Nairobi and completion delays impact 70% of them because of inadequate project integration. The delays and inefficient execution of these projects leads to raised construction costs while harming investor trust before resulting in failed attempts to deliver housing solutions for Nairobi residents in lower and middle income brackets.

The housing sector encounters a primary problem because it does not employ an organized Project Integration Management (PIM) system. The practice of sequencing project components into isolated groups creates fragmented execution because different elements such as procurement and quality control do not communicate properly. The lack of alignment occurs because project targets fail to match with the real results executed in practice. Enobie (2024), conducted a research which shows that poor coordination and insufficient integrated planning leads to construction waste and regulatory violations along with safety issues at Nairobi housing sites. These results extend construction timelines while simultaneously harming the structural quality and cost-efficiency of housing development so they remain unattainable to the target population.

The problem gets worse due to insufficient regulation. Housing projects encounter numerous organizational weaknesses regarding monitoring because NCA, NEMA and county local governments have fragmented their authority roles while maintaining inadequate data exchange channels and weak communication systems between them. Different agencies lead to slow approval timings while interfering with each other's responsibilities and producing varying standards in building enforcement. Informal settlement growth throughout Nairobi exists because more than 60% of the inhabitants (KIPPRA, 2024) reside under unsafe conditions in these areas.

The major issue stems from a lack of integrated project execution framework instead of the absence of housing initiatives. Lack of powerful PIM strategies in Nairobi's housing development sector produces underperformance in both project time, cost, quality measurements and sustainability metrics that work against broad-based urban development targets. Failure to fix integration gaps makes Nairobi's housing crisis more severe while deteriorating the standard of life in cities for its millions of citizens. The research evaluated how well Project Integration Management strategies can support effective housing construction projects in Nairobi while closing the distance between announced policies and implemented outcomes.

Objectives of the Study

The general objective of the study was to examine the relationship between Project Integration Management (PIM) practices and performance of housing construction projects in Nairobi City, Kenya.

Specific Objectives

1. To establish the influence of stakeholder engagement on performance of housing construction projects in Nairobi City, Kenya.
2. To assess how communication and documentation practices affect performance of housing construction projects in Nairobi City, Kenya.

LITERATURE REVIEW

Theoretical Review

Stakeholder Theory was first formally introduced by R. Edward Freeman in his seminal work *Strategic Management: A Stakeholder Approach* (1984). The theory was initially proposed as a reaction to the traditional shareholder-centric view of the firm, which prioritized the interests of owners above all other parties. Freeman argued that organizations operate in complex environments where various actors, such as employees, suppliers, governments, communities, and customers, hold legitimate stakes in organizational outcomes. Therefore, the success of a project or organization depends not just on maximizing shareholder value but on managing and balancing the interests of all stakeholders (Freeman, 1984).

Since its inception, Stakeholder Theory has undergone considerable theoretical development and empirical validation. Donaldson and Preston (1995) extended the theory by categorizing it into three perspectives: descriptive (explaining stakeholder relationships), instrumental (linking stakeholder management to performance), and normative (arguing that stakeholders have intrinsic value). In the context of construction and infrastructure development, the theory gained traction in the 2000s as projects became more interdisciplinary and reliant on external actors. Bourne (2005) and Yang et al. (2009) emphasized that effective stakeholder management is critical to project success, particularly in sectors with high public interest and complex regulatory environments.

In construction project environments projects are highly dependent on diverse actors including clients, contractors, regulatory authorities, financiers, and local communities. Stakeholder Theory is particularly relevant here because it provides a lens through which these relationships can be analyzed and optimized. Chinyio and Olomolaiye (2022) demonstrated that successful stakeholder engagement contributes to reduced conflict, improved communication, and more predictable project outcomes. Moreover, Olander and Landin (2005) applied stakeholder mapping to public infrastructure projects, revealing that early involvement of key actors reduces implementation risks and enhances transparency.

Despite its widespread acceptance, Stakeholder Theory has been critiqued on several grounds. Firstly, it has been criticized for lacking clear operational guidelines on how to prioritize competing stakeholder interests (Jensen, 2002). Secondly, the theory's broad definition of "stakeholder" has been viewed as vague, making it difficult to delineate responsibility or establish accountability (Mitchell et al., 1997). Lastly, some critics argue that its normative dimension can conflict with organizational goals focused on efficiency or profitability, especially in commercially driven construction projects.

Stakeholder Theory was selected for this study because it provides a structured approach to understanding how diverse stakeholder interests and interactions affect project execution, particularly in resource-constrained and policy-driven housing environments like Nairobi. The theory underpins the variable Stakeholder Engagement by offering a conceptual foundation for analyzing how effective identification, inclusion, and management of stakeholders influence coordination, decision-making, and ultimately the performance of housing construction projects. Given the complexity and multi-stakeholder nature of urban housing initiatives, this theory is both contextually and analytically appropriate

Conceptual Framework

A conceptual framework serves as a structured guide for examining how specific inputs influence outcomes (Adom et al., 2020). In this study, the independent variable is Project Integration Management (PIM) practices, which include stakeholder engagement, and communication and documentation practices. These practices are grounded in established project management theories and are expected to directly influence the dependent variable, performance of housing construction projects, measured in terms of cost efficiency, time adherence, quality output, and user satisfaction. The conceptual framework guides the investigation by illustrating how each PIM element contributes to improved housing project performance in Nairobi.

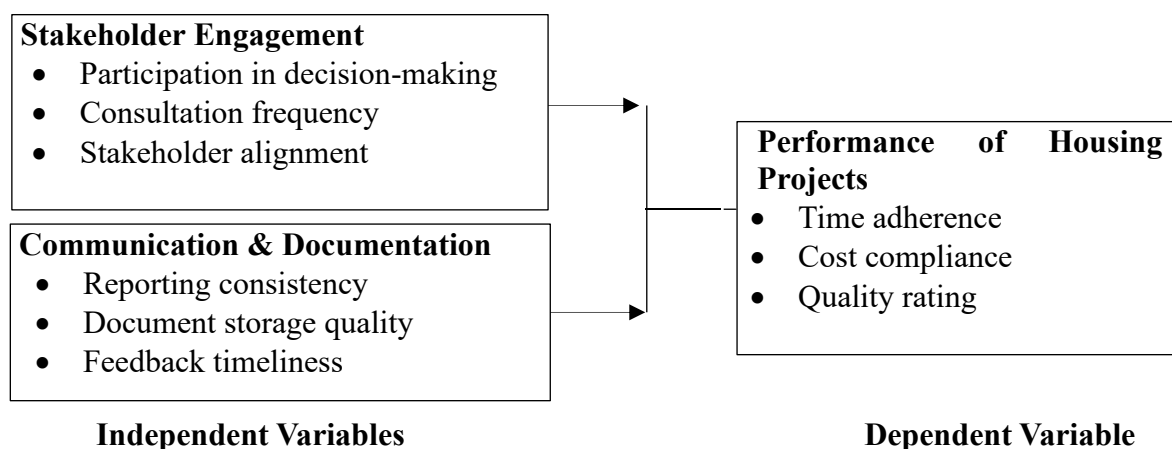


Figure 2. 1: Conceptual Framework

Stakeholder Engagement

Stakeholder engagement is widely recognized as a fundamental element of successful project management, especially in complex sectors such as urban housing. It is broadly defined as the systematic identification, analysis, and proactive involvement of all individuals or groups that have an interest in or are affected by a project (Mahajan et al., 2023). The process extends beyond passive communication to include active collaboration, trust-building, and shared decision-making among project stakeholders. According to Olaniran (2021), effective engagement creates a governance structure around the project that fosters transparency, mitigates risks, and aligns the objectives of multiple actors. In the context of Project Integration Management (PIM), stakeholder engagement ensures that various project elements, ranging from land acquisition to approvals, implementation, and monitoring, are aligned with stakeholder expectations. For this study, stakeholder engagement is measured through three interrelated indicators: participation in decision-making, frequency and quality of consultations, and alignment with project objectives.

The first indicator, stakeholder participation in decision-making, represents the depth of influence that stakeholders have over planning, policy formulation, and strategic direction of a housing project. As construction projects in Nairobi are characterized by a multiplicity of actors, including government agencies, developers, communities, and regulatory authorities, active participation ensures that their interests are fairly represented. Obuya and Rambo (2021) report that when stakeholders are involved in critical decisions from the outset, project outcomes are more likely to be perceived as legitimate, thus reducing instances of resistance, delays, or abandonment. Moreover, projects with participatory governance structures tend to manage scope creep more effectively, as key actors agree on deliverables early in the project cycle (Musau & Kiruthu, 2020). This kind of participation is particularly relevant in Nairobi's informal settlements, where community involvement is necessary to resolve land tenure conflicts and ensure buy-in.

Closely tied to participation is the second indicator: frequency and quality of stakeholder consultations. While stakeholder involvement in planning stages is important, ongoing consultation throughout the project life cycle sustains momentum and prevents information gaps. According to Shojaei et al. (2022), frequent, structured consultations build mutual accountability and foster a continuous feedback loop that enables project teams to adapt to changing conditions or expectations. High-quality consultations are marked by clarity, inclusion, transparency, and responsiveness. Oyugi and Okello (2023) caution that poor consultation practices, such as one-sided communication or failure to act on community feedback, lead to distrust and resistance, especially in housing projects affecting informal or vulnerable communities. In their study on urban redevelopment in Nairobi, they found that lack of consultation led to legal injunctions and stalled developments. Similarly, Nyawira and Wambugu (2022) noted that inadequate stakeholder meetings and poor record-keeping in county-funded housing projects often result in duplication of work, rework, and cost escalations.

The third indicator, stakeholder alignment with project objectives, focuses on the extent to which all parties share a common understanding of the project's goals, timelines, deliverables, and success metrics. Alignment minimizes conflicts, accelerates approvals, and improves overall project coherence. As emphasized by Nwachukwu et al. (2022), when stakeholders are misaligned, particularly around resource expectations or political interests, projects experience performance disruptions and miscommunication. In the Nairobi housing context, project delays often stem from misalignment between government plans and community needs, or between financiers' expectations and contractor capabilities. Muli and Kieti (2021) found that housing projects under the Affordable Housing Programme (AHP) in Kenya encountered misalignment

when local residents expected subsidized units while developers pursued market-based pricing. This disconnect led to public outcry and reduced uptake of completed units.

Furthermore, literature from high-performing urban housing markets reinforces the critical role of stakeholder alignment in enabling successful implementation. For example, Ndiokubwayo and Haupt (2020) highlighted that alignment among regulators, contractors, and communities in South African housing projects significantly reduced disputes and improved inspection approval times. In Nairobi, the frequent redefinition of project scope, especially in county-led housing schemes, has been linked to poor alignment with elected officials and planning departments (Njuguna & Arika, 2023). These issues underscore the need for mechanisms such as memoranda of understanding (MOUs), stakeholder briefings, and digital dashboards to maintain strategic alignment across the board.

In addition to its internal relevance, stakeholder engagement also plays a role in external accountability, particularly in projects funded by public or donor agencies. Government procurement guidelines and international development frameworks such as the World Bank's Environmental and Social Framework (ESF) mandate inclusive and participatory engagement for all community-facing infrastructure projects. This is intended to ensure that benefits are distributed fairly, and that grievances are addressed transparently (World Bank, 2021). In Nairobi, housing projects financed under such frameworks are typically required to publish stakeholder engagement plans (SEPs), conduct public hearings, and operate grievance redress mechanisms further institutionalizing the engagement process.

Communication and Documentation

Communication and documentation refer to the systematic processes through which information is generated, transmitted, recorded, and accessed across all phases of a construction project. In Project Integration Management (PIM), this function is vital for ensuring that all project participants, clients, contractors, consultants, regulators, remain aligned in their understanding of project scope, changes, risks, and deliverables (PMI, 2021). Clear communication structures combined with high-quality documentation contribute to timely decisions, accountability, and risk reduction (Bhimani et al., 2021). In the context of housing construction in Nairobi, where projects often involve multiple stakeholders and are subject to bureaucratic hurdles, weak communication systems and poor documentation have been repeatedly linked to delays, disputes, and rework. This study evaluates communication and documentation using three specific indicators: reporting consistency, document storage quality, and feedback timeliness.

Reporting consistency reflects how reliably and regularly progress reports, technical updates, and issue logs are produced and shared. Consistent reporting allows stakeholders to track milestones, identify risks early, and assess alignment with timelines and budgets. In practice, it involves fixed reporting intervals (e.g., weekly site updates, monthly stakeholder briefs) and standard formats to ensure comparability. In Nairobi's construction projects, inconsistency in reporting caused by ad hoc communication or lack of standard operating procedures, has been identified as a major source of project stagnation (Gikonyo & Mutua, 2021). According to Mungai and Makori (2023), projects with structured reporting regimes experienced better coordination between design and site execution teams, leading to fewer implementation disruptions. This study assesses reporting consistency based on whether schedules are adhered to, how structured the reports are, and who is responsible for their preparation and circulation.

Document storage quality, refers to the accessibility, organization, and reliability of project documents such as drawings, contracts, change orders, permits, and meeting minutes. Effective documentation systems, whether physical or digital, reduce errors, enhance traceability, and protect against data loss or miscommunication (Oti-Sarpong et al., 2022). In the Nairobi housing context, many firms still rely on physical storage or informal cloud-sharing methods

without version control or audit trails. Kuria and Njenga (2022) found that over 40% of disputes in public housing contracts stemmed from misfiled or missing documentation. Conversely, firms that used centralized digital systems with metadata tagging and access controls improved project transparency and dispute resolution efficiency. This study evaluates document storage quality by examining whether documentation systems are centralized, secure, and updated regularly, and whether they support collaboration across departments and external partners.

Feedback timeliness assesses how quickly information, particularly decisions, approvals, clarifications, or conflict resolutions, is communicated to relevant actors after a request or event. Timely feedback is essential for avoiding project bottlenecks and ensuring continuous workflow. In high-density urban housing projects, delays in feedback can halt procurement, defer inspections, or cause coordination breakdowns between contractors and consultants. Wambua and Kihoro (2023) observed that in Nairobi, feedback loops exceeding 7 working days led to 18–30% schedule overruns in housing developments. Feedback timeliness is also affected by chain-of-command clarity and the presence of real-time communication tools like instant messaging platforms and task trackers. In this study, feedback timeliness is assessed based on average response times, escalation procedures, and stakeholder satisfaction with communication speed.

Although the role of communication and documentation is well recognized, gaps persist in Nairobi's housing sector due to a combination of factors: lack of standardized protocols, underinvestment in IT systems, fragmented project teams, and low digital literacy (Musyoka & Karanja, 2023). Moreover, in public projects, delays in interdepartmental communication, especially between county planning departments, procurement units, and contractors, often result in uncoordinated approvals and unclear accountability. Despite these challenges, projects that invest in structured communication protocols and robust documentation systems consistently report better performance across time, cost, and quality indicators (Shojaei et al., 2022; Gikonyo & Mutua, 2021).

Therefore, communication and documentation serve as foundational processes for integrated project delivery. They ensure that data is accessible, reliable, and transmitted in a timely fashion across all stakeholders. By assessing reporting consistency, document storage quality, and feedback timeliness, this study aims to evaluate how effectively information flow supports decision-making and coordination in Nairobi's housing construction projects. The findings highlighted areas for improvement in communication infrastructure, stakeholder engagement, and digital governance within Kenya's built environment.

Performance of Housing Projects

Performance of housing projects refers to the degree to which construction projects meet their planned objectives in terms of delivery timelines, budget control, and output quality. In the context of Project Integration Management (PIM), performance outcomes are influenced by how well project elements, resources, communication, risk, and technology, are coordinated across the lifecycle. As defined by the Project Management Institute (PMI, 2021), project performance is measured by the project's success in delivering scope, within time and cost constraints, and meeting stakeholder expectations for quality. In Nairobi's housing sector, where delays, budget overruns, and substandard finishes are common, evaluating project performance is essential for understanding the effectiveness of PIM practices. This study uses three practical indicators to assess housing project performance: time adherence, cost compliance, and quality rating.

Time adherence measures whether a housing project is completed within the scheduled duration. Adherence to timelines is a major benchmark of project success, particularly in urban environments like Nairobi where housing demand is high and delays result in cost escalation, revenue loss, and public dissatisfaction. According to Omwenga and Wambugu (2022), over

60% of housing projects in Nairobi experience delays of more than three months, often due to poor planning, procurement bottlenecks, or weak contractor coordination. Effective PIM practices, such as centralized scheduling, and streamlined approvals, can significantly improve time control (Kamau & Kioko, 2023). In this study, time adherence is assessed by comparing actual versus planned completion dates and examining causes for deviation.

Cost compliance evaluates whether project expenses align with initial budgets. Cost overruns are a persistent challenge in Nairobi's housing sector, driven by inflation, scope changes, and inefficient resource management. Ndichu and Muturi (2021) found that only 37% of housing projects in Nairobi County were delivered within budget, highlighting a widespread issue of poor cost forecasting and inadequate financial control. Projects that successfully integrate cost tracking tools and proactively identify risks tend to achieve better budget adherence (Abubakar et al., 2022). In this study, cost compliance is measured by analyzing budget deviation rates, the use of contingency allowances, and financial reporting practices within projects.

Quality rating refers to the degree to which the final product meets the expected standards in design, materials, workmanship, and usability. In housing, quality is judged both technically through structural soundness, durability, and finishing, and socially through tenant satisfaction and fitness for occupation. According to Wambua and Kariuki (2023), poor quality in Kenyan public housing is frequently linked to contractor selection based on lowest bid rather than technical merit, resulting in frequent post-completion repairs and dissatisfaction among occupants. Incorporating quality assurance into PIM such as through digital inspections, material tracking, and supervision checklists improves consistency and compliance with building codes (Shojaei et al., 2022). This study measures quality rating using stakeholder feedback, defect reports, and audit records.

While time, cost, and quality are traditionally evaluated separately, they are deeply interdependent in real-world project environments. A delay in procurement can increase costs; substandard work may require rework that affects both time and budget. Project Integration Management sought to balance these variables holistically by ensuring that communication, resource planning, technology, and stakeholder engagement are not treated in isolation but integrated to drive consistent performance (PMI, 2021). The Nairobi housing context, with its complex mix of private, public, and public-private partnership projects, presents a compelling case for understanding how integration efforts translate into tangible performance outcomes.

Performance of housing projects is a critical dependent variable in this study. By focusing on time adherence, cost compliance, and quality rating, the research provides a structured assessment of how integrated project management practices influence successful delivery in Nairobi's construction landscape. These indicators not only reflect managerial efficiency but also capture the lived experience of end-users, contributing to broader debates on housing access and urban development in Kenya.

Empirical Literature Review

Stakeholder Engagement and Project Performance

In the Chinese context, Zhang and Lin (2021) examined the effects of stakeholder participation on sustainable housing development using a large-scale quantitative survey. The study sampled 220 project managers and urban development professionals from five Chinese provinces using stratified random sampling. Data were collected through structured questionnaires and analyzed using structural equation modeling (SEM). Their findings showed that early and sustained stakeholder participation improved project sustainability metrics, enhanced transparency, and reduced community resistance by over 25 percent. The authors concluded that project governance should institutionalize stakeholder engagement mechanisms at the regulatory level. However, the study did not explore variations across public-private

partnership (PPP) arrangements or assess engagement depth across different phases of the project lifecycle.

Adeyemi, Adebayo, and Oladimeji (2021) investigated the impact of stakeholder engagement on affordable housing project outcomes in Nigeria. Employing a cross-sectional survey design, the researchers sampled 142 participants, including developers, public housing authorities, and community representatives. A random sampling approach was applied, and data were collected through structured Likert-scale questionnaires and analyzed using ANOVA and regression techniques. The study found that inclusive stakeholder participation improved project satisfaction scores, enhanced site access processes, and contributed to increased post-occupancy maintenance compliance. It recommended embedding community forums and advisory boards in state housing programs. However, the study lacked a temporal dimension and did not differentiate between engagement at planning versus implementation stages, limiting its explanatory power regarding dynamic engagement practices.

In Kenya, Gichunge and Musyoka (2022) conducted a study on stakeholder involvement in public housing project performance in Nairobi. Using a cross-sectional survey design, the study sampled 120 engineers, supervisors, and consultants working on 30 government-funded housing projects through stratified sampling. Data were collected via structured questionnaires and analyzed through regression analysis. The study found that projects with documented stakeholder engagement frameworks reported 32 percent fewer change orders and demonstrated stronger adherence to budgets and timelines. Recommendations included incorporating stakeholder mapping tools during procurement planning stages. However, the study did not examine engagement practices after construction or post-handover communication with beneficiaries, which are critical in long-term housing project performance.

Communication and Documentation and Project Performance

Jowkar et al. (2023) investigated the relationship between site communication consistency and performance metrics in public housing construction projects across Iran. The study employed a quantitative correlational research design using surveys and document audits from 132 project staff members, including engineers and supervisors. Stratified random sampling ensured representation across 10 government-led projects. The analysis showed a significant positive correlation between structured daily reporting mechanisms and timely completion. Projects that implemented standardized daily site logs and weekly review meetings had 21% fewer incidents of miscommunication and a 14% improvement in procurement coordination. The study recommended making daily reporting tools mandatory in low-cost housing programs, although it noted that enforcement mechanisms were often weak in decentralized systems.

Wang and Li (2023) conducted a large-scale study across 22 construction firms in China, assessing the impact of internal communication systems on housing project success. A structured survey was administered to 226 project personnel, with data analyzed using multiple regression analysis. The findings indicated that timely feedback mechanisms, particularly via mobile and email alerts, resulted in faster decision-making and reduced downtime. Projects with dedicated communication officers and internal protocols for handling queries saw a 23% improvement in response time to site issues. The authors concluded that communication systems must be embedded in project organizational structures, not left to informal practices. Despite the success, the study found that cross-department feedback inconsistencies remained a bottleneck.

In a related study in South Africa, Tshipa and Marnewick (2022) used a longitudinal study design to explore the role of communication alignment in public infrastructure delivery. Tracking eight projects over 18 months, the researchers analyzed communication plans, change logs, and progress reports. Projects that integrated feedback mechanisms into weekly site meetings and used standardized reporting templates saw better time and cost performance. The study emphasized that both vertical and horizontal communication structures are critical for success. It also noted the difficulty of ensuring documentation compliance without a centralized project management system (Tshipa & Marnewick, 2022).

Otieno and Mutua (2023) assessed the impact of structured communication protocols on project execution within Kenya's affordable housing program. The study employed a descriptive survey design with 87 participants from ongoing Nairobi County housing projects. Data were collected through structured questionnaires and interviews and analyzed using SPSS. Results indicated that projects with consistent reporting timelines and clearly documented escalation channels had higher adherence to work plans and fewer design conflicts. Participants reported improved accountability and fewer reworks due to effective documentation of decisions. However, challenges included limited digital infrastructure and insufficient training on documentation standards among junior staff.

RESEARCH METHODOLOGY

The study employed a descriptive cross-sectional survey design to examine the relationship between Project Integration Management (PIM) practices and the performance of housing construction projects in Nairobi City, Kenya. The target population comprised 102 project managers representing 102 active and recently completed housing projects spanning public, private, and PPP models across Nairobi County. A census approach was adopted due to the manageable population size, ensuring full coverage and eliminating sampling error. This choice enhanced the robustness and representativeness of the findings, while securing direct insights from the primary custodians of project integration processes and performance data.

Data was collected using a semi-structured questionnaire structured around the five PIM dimensions and project performance indicators. The instrument combined Likert-scale items for quantitative measurement with open-ended questions for contextual depth. Prior to deployment, the questionnaire underwent pilot testing involving 10 project managers, leading to refinement in clarity and structure. Content validity was reinforced through expert review, while reliability was confirmed using Cronbach's alpha, with constructs meeting the acceptable threshold of 0.7 or above.

The drop-and-pick-later method was used to administer questionnaires, supported by trained research assistants to ensure consistency, follow-ups, and ethical compliance. Ethical clearance and authorization were secured from JKUAT, NACOSTI, and relevant government and private stakeholders. Data analysis was conducted using SPSS Version 27, applying both descriptive statistics (means, frequencies, standard deviations) and inferential techniques including Pearson's correlation and multiple linear regression to test the influence of PIM components on project performance at a 95% confidence level. Qualitative responses were analyzed thematically to enrich interpretation and provide contextual explanations for quantitative trends.

RESEARCH FINDINGS AND DISCUSSIONS

The study targeted 102 project managers overseeing housing projects within Nairobi City County. A pilot test involving 10 respondents was conducted to establish validity and reliability of the instrument; these cases were excluded from the main analysis. The effective study

population was therefore 92 managers. Out of these, 81 completed questionnaires were returned, yielding a response rate of 88.0%. This response rate is considered adequate for survey research, as it exceeds the 70% threshold recommended for ensuring representativeness and minimizing non-response bias (Mugenda & Mugenda, 2003).

Descriptive Statistics of Study Variables

Stakeholder Engagement

The first objective of the study was to establish the influence of stakeholder engagement on performance of housing construction projects in Nairobi City, Kenya. Stakeholder engagement was assessed using eight questionnaire items focusing on identification, participation, consultation, alignment, communication, and conflict management practices. Respondents rated each item on a five-point Likert scale, and the results are presented in Table 1.

Table 1: Descriptive Statistics for Stakeholder Engagement

Statement	Mean	Std. Dev.
Stakeholders are identified early in the project lifecycle.	3.642	0.751
Stakeholders are actively engaged in key decisions.	3.593	0.698
Project goals are well aligned with stakeholder interests.	3.457	0.712
The project team consults stakeholders frequently.	3.506	0.731
Stakeholder input influences project planning and execution.	3.531	0.774
Feedback mechanisms for stakeholders are well established.	3.420	0.689
Stakeholders trust the communication provided by the project team.	3.568	0.702
Conflicts among stakeholders are addressed constructively.	3.358	0.768
Aggregate Stakeholder Engagement Score	3.509	0.728

The findings show that project managers generally acknowledged the importance of identifying stakeholders at the outset (mean = 3.642, SD = 0.751), which suggests systematic stakeholder mapping at project initiation. Active engagement in key decisions was also moderately high (mean = 3.593, SD = 0.698), indicating that managers make deliberate efforts to involve stakeholders in governance. The alignment of project goals with stakeholder interests scored moderately (mean = 3.457, SD = 0.712), reflecting attempts to balance technical project goals with community or client priorities.

Frequent consultation with stakeholders (mean = 3.506, SD = 0.731) and incorporation of stakeholder input into planning and execution (mean = 3.531, SD = 0.774) both scored in the moderate-to-high range, demonstrating that project managers are fairly responsive to stakeholder voices. However, feedback mechanisms (mean = 3.420, SD = 0.689) were weaker, suggesting limited institutionalization of structured feedback channels. Trust in communication from the project team was relatively strong (mean = 3.568, SD = 0.702), showing that information sharing is credible and transparent. The lowest-rated item was constructive conflict resolution (mean = 3.358, SD = 0.768), highlighting a weakness in handling stakeholder disputes effectively.

Overall, the aggregate stakeholder engagement score was 3.509 (SD = 0.728), placing the construct at the upper end of the moderate range, bordering on high. This implies that stakeholder engagement practices are fairly well embedded in Nairobi's housing projects, though gaps remain in structured feedback systems and conflict management. These findings align with empirical literature. For instance, Zhang and Lin (2021) found that sustained stakeholder participation enhances transparency and reduces resistance in housing projects, while Adeyemi et al. (2021) demonstrated that stakeholder involvement significantly improves affordable housing outcomes in Nigeria. Similarly, Obuya and Rambo (2021) observed that stakeholder participation in decision-making increases project legitimacy and reduces delays. The current results therefore reinforce Stakeholder Theory, which posits that projects achieve

better performance when diverse interests are systematically integrated. However, the relatively weaker scores on conflict resolution and feedback mechanisms suggest that Nairobi housing projects still face operational challenges in translating engagement into sustained collaboration, echoing concerns raised by Oyugi and Okello (2023) that poor consultation or dispute management often leads to distrust and stalled developments.

Communication and Documentation

The second objective sought to assess how communication and documentation practices affect performance of housing construction projects in Nairobi City, Kenya. Communication and documentation were assessed using eight items focusing on information sharing, reporting systems, record keeping, and accessibility of project data. Respondents rated their agreement on a five-point Likert scale, and the results are summarized in Table 2.

Table 2: Descriptive Statistics for Communication and Documentation

Statement	Mean	Std. Dev.
Project information is communicated clearly to all relevant stakeholders.	3.642	0.721
Progress reports are prepared and shared regularly.	3.605	0.729
Documentation of project activities is complete and up to date.	3.543	0.734
Meetings are held frequently to update stakeholders on project status.	3.506	0.741
Records and documents are stored systematically and are easily retrievable.	3.420	0.713
Communication systems ensure timely dissemination of project information.	3.395	0.768
Electronic platforms are used for communication and documentation.	3.358	0.751
Project records are accessible to all authorized stakeholders when needed.	3.309	0.702
Aggregate Score	3.472	0.733

The strongest practice reported was clear communication of project information to stakeholders (mean = 3.642, SD = 0.721), reflecting that project managers prioritize clarity in information dissemination. Regular preparation and sharing of progress reports also scored highly (mean = 3.605, SD = 0.729), suggesting that formal reporting is well established. Documentation being complete and up to date (mean = 3.543, SD = 0.734) and frequent stakeholder meetings (mean = 3.506, SD = 0.741) were also moderately strong, showing that structured mechanisms are in place for updating stakeholders.

Weaker practices included systematic storage and retrieval of documents (mean = 3.420, SD = 0.713) and timely dissemination of information (mean = 3.395, SD = 0.768), indicating that record management systems and rapid information flow are not fully optimized. The lowest-rated practices were the use of electronic platforms (mean = 3.358, SD = 0.751) and ensuring that records are accessible to all authorized stakeholders (mean = 3.309, SD = 0.702), highlighting that digital adoption for documentation and inclusive access remain weak spots in housing project communication.

The aggregate mean of 3.472 (SD = 0.733) places communication and documentation at a moderate-to-high level. This suggests that while project managers emphasize clarity, reporting, and meetings, systematic digital record management and stakeholder access lag behind. These findings are consistent with Asadi et al. (2023), who demonstrated that structured communication processes improve accountability in construction projects. They also align with Gikonyo and Mutua (2021), who reported that weak adoption of electronic platforms in Kenya limits the efficiency of construction communication systems. Further, Ndichu and Muturi

(2021) found that incomplete documentation undermines project monitoring and evaluation, thereby negatively affecting project outcomes.

Together, these findings imply that Nairobi housing projects perform relatively well in basic communication and reporting but need stronger investment in digital platforms, systematic record management, and inclusive access to ensure that communication systems fully support project integration and performance.

Project Performance

Project performance was measured using eight items capturing timeliness, cost control, quality, goal achievement, housing access, social impact, stakeholder satisfaction, and lessons learned. Respondents rated their agreement on a five-point Likert scale, and the results are presented in Table 3.

Table 3: Descriptive Statistics for Project Performance

Statement	Mean	Std. Dev.
The project was completed on time.	3.642	0.729
The project adhered to its budget.	3.605	0.741
The construction met required quality standards.	3.568	0.721
Project objectives were achieved as initially planned.	3.543	0.734
The project has contributed to improved housing access.	3.506	0.713
The social impact of the project is evident and positive.	3.457	0.741
Stakeholders are satisfied with the project outcomes.	3.395	0.768
Lessons from the project are being applied in future developments.	3.358	0.751
Aggregate Score	3.509	0.737

The strongest-rated dimension of performance was project completion on time (mean = 3.642, SD = 0.729), showing that many housing projects are meeting their schedules. Budget adherence was also rated highly (mean = 3.605, SD = 0.741), indicating reasonable financial discipline. Construction meeting required quality standards (mean = 3.568, SD = 0.721) and achieving initial objectives (mean = 3.543, SD = 0.734) were also rated well, reflecting technical success and effective project delivery.

The contribution of projects to improved housing access (mean = 3.506, SD = 0.713) and their positive social impact (mean = 3.457, SD = 0.741) were moderately rated, suggesting that while projects address broader housing needs, their societal benefits may not always be fully realized. Weaker areas included stakeholder satisfaction (mean = 3.395, SD = 0.768), pointing to a gap between technical performance and perceived outcomes. The lowest score was for application of lessons in future projects (mean = 3.358, SD = 0.751), highlighting weak institutional learning and knowledge transfer.

The aggregate performance score of 3.509 (SD = 0.737) places overall housing project performance at a moderate-to-high level, indicating success in technical outcomes (time, cost, quality) but weaker results in stakeholder satisfaction and institutional learning. These findings align with Oti-Sarpong et al. (2022), who observed that performance frameworks must extend beyond delivery metrics to capture social outcomes and sustainability. Similarly, Wambua and Kariuki (2023) argued that stakeholder satisfaction remains a weak spot in Kenyan housing projects due to communication and engagement gaps. Finally, Love et al. (2019) highlighted that organizational learning is often neglected in construction projects, limiting continuous improvement across project cycles.

In Nairobi's housing context, these results suggest that while projects are technically successful, more attention is needed on sustaining social impact, improving satisfaction, and embedding lessons learned to inform future housing initiatives.

Correlation Analysis

Pearson's product-moment correlation coefficient (r) was used to assess the strength and direction of the linear relationships between the variables. The interpretation of correlation coefficients was guided by the following scale: values between 0.00–0.19 indicate a very weak relationship, 0.20–0.39 a weak relationship, 0.40–0.59 a moderate relationship, 0.60–0.79 a strong relationship, and 0.80–1.00 a very strong relationship. A positive coefficient indicates that an increase in one variable is associated with an increase in the other, while a negative coefficient suggests an inverse relationship. This analysis provides an initial understanding of how project integration management practices are associated with project performance in housing projects in Nairobi City County, forming the foundation for regression analysis in subsequent sections.

Table 4: Correlation Matrix

Variable		Project Performance	Stakeholder Engagement	Communication & Documentation
Performance of Housing Projects	Pearson	1.000		
	Correlation			
	Sig. (2-tailed)			
Stakeholder Engagement	N	81		
	Pearson	.726**	1	
	Correlation			
Communication & Documentation	Sig. (2-tailed)	.000		
	N	81	81	
	Pearson	.745**	.095	1
	Correlation			
	Sig. (2-tailed)	.0000	.234	
	N	81	81	81

Note: ** Correlation is significant at the 0.05 level (2-tailed).

The correlation between stakeholder engagement and project performance was strong and positive ($r = 0.726$, $p < 0.05$), indicating that projects with higher stakeholder involvement tend to achieve better outcomes. This supports findings by Chinyio and Olomolaiye (2022), who demonstrated that meaningful engagement reduces conflicts and enhances trust in construction projects. It also resonates with Bourne (2005), who argued that stakeholder mapping and systematic communication strengthen accountability and predictability in project delivery. The implication is that Nairobi housing projects that institutionalize stakeholder engagement are more likely to deliver on time, within budget, and with greater stakeholder satisfaction.

Communication and documentation exhibited the strongest correlation with project performance ($r = 0.745$, $p < 0.05$). This highlights that transparent information flows, consistent reporting, and proper record keeping are central to project success. Donaldson and Preston (1995) argued that effective communication is the operational backbone of stakeholder relationships, while Oyugi and Okello (2023) showed that inadequate documentation often leads to disputes and stalled developments in Kenyan projects. These findings imply that Nairobi housing projects that strengthen communication structures and digital record systems are best positioned to achieve superior performance outcomes.

Regression Analysis

To determine the combined and individual influence of project integration management practices on project performance, a multiple linear regression analysis was conducted. Project performance was regressed on stakeholder engagement, and communication and documentation.

Table 5: Regression Coefficients

Predictor	B	Std. Error	Beta	t	Sig.
(Constant)	0.742	0.214	–	3.467	0.001
Stakeholder Engagement	0.238	0.072	0.286	3.306	0.001
Communication & Documentation	0.267	0.070	0.293	3.814	0.000

Stakeholder engagement had a positive and significant effect on project performance ($\beta = 0.238$, $p = 0.001$). This suggests that better identification, consultation, and involvement of stakeholders substantially enhance project outcomes. This finding supports Bourne (2005), who emphasized stakeholder mapping as a driver of accountability, and resonates with Chinyio and Olomolaiye (2022), who showed that active engagement reduces conflicts and improves predictability in construction projects.

Communication and documentation emerged as the strongest predictor ($\beta = 0.267$, $p < 0.001$). This indicates that effective reporting, systematic record keeping, and transparent information flows are central to project success. Donaldson and Preston (1995) argued that communication is the operational backbone of stakeholder management, while Ndichu and Muturi (2021) found that robust documentation practices improve monitoring and reduce disputes in Kenyan housing projects.

Regression Equation

$$Y = 0.742 + 0.238X_1 + 0.267X_2 + \varepsilon$$

Where:

Y = Performance of Housing Projects

X_1 = Stakeholder Engagement

X_2 = Communication and Documentation

ε = Error term

Conclusions

The first research question sought to establish how stakeholder engagement influences the performance of housing construction projects in Nairobi City County. The study concludes that stakeholder engagement significantly enhances project performance by fostering inclusivity, trust, and ownership among diverse actors. Projects that actively identified stakeholders early, consulted them in key decisions, and integrated their input into planning were more likely to meet objectives on time and within budget. However, weaknesses in structured feedback mechanisms and conflict resolution limited the full potential of engagement. The evidence therefore shows that stakeholder engagement is not only positively associated with project success but is also one of the strongest predictors of performance, underscoring its critical role in housing project delivery.

The fifth research question explored how communication and documentation practices affect project performance. The study concludes that communication and documentation are the most influential integration practices in determining project success. Clear communication, regular reporting, and reliable documentation enhanced transparency, accountability, and stakeholder confidence. Projects with strong communication systems performed better across key dimensions, including timeliness, cost adherence, and stakeholder satisfaction. Yet, weaknesses in systematic record management, digital adoption, and inclusive access to information limited full effectiveness. Overall, the evidence demonstrates that communication and documentation form the backbone of project integration management and are indispensable for achieving high levels of performance in housing projects.

Recommendations

Stakeholder Engagement

The study recommends that housing projects in Nairobi City County institutionalize structured feedback mechanisms to ensure that stakeholders are continuously engaged throughout the project cycle, not just at the planning stage. Project teams should also adopt formal conflict resolution frameworks that allow for early detection and constructive handling of disputes, thereby minimizing delays and mistrust. Furthermore, engagement should go beyond consultation to genuine collaboration, where stakeholder inputs directly influence decisions on project scope, timelines, and quality standards. This would enhance ownership, reduce resistance, and increase satisfaction with project outcomes.

Communication and Documentation

The study recommends that communication and documentation be prioritized as the backbone of project integration management. Project teams should invest in digital communication platforms and cloud-based documentation systems to facilitate faster information flow, systematic storage, and inclusive access for all authorized stakeholders. Clear protocols for record management should be established to ensure completeness, consistency, and retrievability of project data. Strengthening transparency and accessibility in communication will not only build stakeholder trust but also enhance accountability and monitoring, thereby ensuring sustainable improvements in housing project performance.

Suggestions for Further Research

Further studies could also expand the scope beyond housing projects in Nairobi City to include other regions and sectors such as infrastructure, energy, and water projects, thereby enhancing the generalizability of findings. In addition, longitudinal studies are recommended to capture changes in project performance over time, particularly in response to policy reforms and technological advancements. Finally, the reliance on self-reported data in this study may have introduced some degree of response bias; future research could triangulate survey responses with project performance records or case study evidence to enhance validity.

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