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PROJECT PLANNING PRACTICES ON PERFORMANCE OF URBAN HOUSING PROJECTS IN KENYA

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ABSTRACT

This study sought to determine the influence of project planning practices on performance of urban housing projects in Kenya. Specifically, this study sought to determine the influence of Project Design on performance of urban housing projects in Kenya, and to establish the influence of risk management on performance of urban housing projects in Kenya. This study was anchored on theory of Project Management, Modern Portfolio Theory (MPT). The current study adopted a descriptive research design. The target population for the study was 140 (engineers, supervisors and contractors) involved in the implementation of infrastructure projects implemented by Housing finance company of Kenya. The study adopted a census and rules out application of specific sampling technique. The study used a census since the population of 140 is small and the study aimed to reach all the housing infrastructure projects in the study area. The study relied on primary data collected using self-administered structured questionnaires. To ascertain reliability, validity a pilot test was conducted by administering the questionnaires on 14 participants. Statistical Packages for Social Sciences (SPSS) version 26.0 was used for analysis and presentation. The data was analyzed using descriptive and inferential statistics. Descriptive statistics included the mean, standard deviation, coefficient of variation and percentages. Pearson Correlation analysis was used to determine the relationship between individual variables in the objectives Multiple Regression analysis was used in testing the research questions by establishing the influence of each independent variable on the dependent variable. The significance of the model was interpreted using a significance level of 0.05. The results was presented on frequency tables, charts, and graphs. The study findings reveal that effective project design, risk management significantly influence the performance of urban housing projects in Kenya. Regression analysis demonstrated positive and statistically significant coefficients for project design ($B = 0.188$, $p = 0.005$), risk management ($B = 0.380$, $p < 0.001$), in relation to overall project performance. These results underscore the critical role of comprehensive project planning practices in enhancing project outcomes and aligning project objectives with organizational goals and strategies.

Key Words: Project Planning Practices, Project Design, Risk Management, Performance, Urban Housing Projects

Background study

Infrastructure projects plays a big role in societies in terms of meeting the development needs of the economy and more so in transforming the quality of life of citizens (Gitonga & Keiyoro, 2017). The government is the single largest implementer of public infrastructure projects thus there is need to ensure that these projects are fully implemented and the factors that have the greatest influence identified to ensure their influence is taken into consideration during the project life cycle (Onyango, Bwisa, & Orwa, 2017). County governments play an important role in urban housing delivery offered through public infrastructure development and their full implementation is a catalyst for economic growth in Kenya (Kariri, Onyango, & Njuguna, 2017).

The empirical evidence shows that majority of infrastructure projects do not achieve success since many of them have not taken off while others have stalled (Ndachi & Kimutai, 2018). The lack of completion of the infrastructure projects is a problem since it limits urban housing delivery to the people (Mobegi, Sang, & James, 2022). Despite the commitment from the government and private sector to enhance urban housing delivery to the public, evidence shows that majority of housing projects especially infrastructure projects do not achieve success. It is at implementation stage that most of the housing infrastructure projects fail, and this has given concern to governments as well as the citizens (Kariri, Onyango, & Njuguna, 2017

In the global arena in regard to performance of construction projects, there have been indicating lack of adherence to project constraints management which yields to underperformance of the projects and failing to meet the stakeholder's expectations (Rugenyi, 2015). From the past studies it has been reported that the time and cost overruns are common in most projects (Omondi, 2017; Sterman, 2015). For example; according to a 2018 IBM survey on project management change, it was established that about 40% of the projects were able to be accomplished within time, scope and cost. In another report, it was found out that one in six of the 1,471 projects carried out had an average of time plus cost overrun that is 20% and 70% respectively (Flyvbjerg&Budzier, 2018).

Further, the Standish Group in 2012 reported that estimated 43% of projects had cost and time overruns and 18% failed to be completed. In other words, they were terminated prematurely. In another study of 5400 large government funded projects, 45% indicated cost overruns and 7% of the projects had time overruns and 56% of these projects had values than the ones earlier predicted (Bloch, Blumberg &Laartz, 2014). Further, Price Waterhouse Coopers (PwC) (2014), based on the survey on several construction projects in 34 industries in 38 countries, established that 86%failure of projects being delivered within time, cost and budget.

Further, 60% of the project failed to be accomplished within the budget, schedule and scope and less than 10% failed to deliver on their time, scope and quality based on the established criterion. Gwaya, Wanyona and Musau (2014), Kiarie and Wanyoike (2016) and Kariungi (2014) also suggested that the construction projects were indicating ridiculous time and cost overruns globally. This call for assessment of the influence of triple constraint in project management to comprehend how they affect particularly the county funded construction projects in the country (Leong *et al*., 2014; Osedo, 2015; The Kenya Alliance of Resident Associations

Statement of the Problem

The devolution of the housing function for implementation of urban housing projects to enhance provision of public service has had it fair share of challenges in Kenya. This is evidenced by the fact that most housing facilities lack and have stalled basic amenities such as toilets and clean drinking water (Kariri, Onyango, & Njuguna, 2017) .In Nairobi County, for about 7 years now reporting up to 12% infrastructure positive projects implementation, but a number of the them have

failed on the way due to prevailing planning factors like wrong prioritization of development projects, lack of financial resources, political influence, corruption, low levels of technology, poor infrastructure, lack of community involvement, poor management support and many more (Hassan & Guyo, 2017). Due to this insurgency of issues in the infrastructure projects failure up to the tune of 47%, in the county construction projects. The question now remains; are the project planning issues Project Design, risk management the actual missing factor especially for performance of urban housing projects in Kenya? If it has been executed, how has it contributed to improvement on implementation of infrastructure projects in Kenya? It is on this premise the study seeks to establish the relationship between project planning practices (Project Design, risk management) and performance of urban housing projects in Kenya?

From the aforementioned studies no study has focused on the relationship between project planning and implementation of urban housing infrastructure projects in Nairobi City County, Kenya. A gap this study seeks to fill. Moreover, due to the sectorial, contextual, and managerial differences among the sectors, the application of the project planning practice and construction projects performance and the application of the same would not be assumed to be similar, unless empirical findings reveal so. It is on this premise the study, therefore, investigated the influence of project planning practices (Project Design, risk management) on performance of urban housing projects in Kenya, a case study of Housing finance company of Kenya.

Specific Objectives of the Study

The study was guided by the following specific objectives;

i. To determine the influence of Project Design on performance of urban housing projects in Kenya
ii. To establish the influence of risk management on performance of urban housing projects in Kenya

LITERATURE REVIEW

Theoretical Review

Theory of Project Management

The theory of project management developed by Koskela and Howell (2002) consists of two theories: the theory of project and the theory of management. The theory of project is modeled from the theory of production derived from the manufacturing industry and it is built on three concepts (Kraemer, Henrich,Koskela,& Kagioglou,2014; Rooke, Koskela, Howell, &Kagioglou,2012), transformation, flow, and value also referred to as the transformation-flow-value (TFV) theory (Kraemer, *et al*., 2014;Rooke, *et al*., 2012). The TFV theory is needed in understanding the nature and requirements along the project conversion (transformation) path and, for the TFV theory to be effective and efficient; it must be used at the same time in a complementary way (Kraemer, *et al*. (2014). While, the theory of control consists of two models: thermostat model and the scientific experimentation model (Koskela& Howell, 2002a). The project control involves gauging performance, identifying deviation and learning what are the causes of deviations, their effects and the best means of countering them. The learning process is an avenue that can be used by contractors to improve on their project management potentials (Inuwa & Kunya, 2015). Construction projects undergo thorough project initiation, planning, execution, monitoring and closure process. In the context of this study, urban housing infrastructure construction projects under go transformation through processes. They were initiated, designed and planned with the participation of all stakeholders; some are under implementation process, while the rest have passed the closure process. Project inputs for urban

housing infrastructure construction projects execution are in form of finances from the County/National governments. The current study adopted the theory of project management to examine the relationship between project design and performance of urban housing projects in Kenya.

Modern Portfolio Theory (MPT)

Harry Markowitz developed the Modern Portfolio Theory (MPT) (Markowitz, 1952). Markowitz showed that a diversified portfolio of financial assets could be optimized to deliver the maximum return for a given level of risk". This theory determines the highest return on specific mix of investments for a given level of risk. He also argued that less risk will always be preferred by investors for any given expected return level (Karatzas *et al*, 2019). Modern Portfolio Theory, is a theory on an investment theory emphasizing that the greater the risk the higher the returns. It is also based on the concept that risk-averse investors can construct efficient portfolios in order to optimize or maximize expected return based on a given levels of market risk (Chandra, & Shadel, 2019).

In project planning, there is a trade-off between project returns (project benefits) and project risks. Project managers need to balance these aspects to maximize the chances of project success and value delivery. Similarly, in project management, diversification can be thought of as managing a portfolio of projects. By diversifying project types, industries, or customer segments, an organization can reduce its exposure to the risk of any single project's failure and improve the overall portfolio's performance (Hui, Fox, & Gurevitch, 2017).

Furthermore, MPT encourages the quantification and assessment of risk. Similarly, project management requires the identification, assessment, and management of project risks. Both disciplines benefit from systematic approaches to understanding and mitigating risks. In project management, the efficient frontier can be seen as the set of project portfolios that optimally balance risk and return to achieve an organization's strategic objectives (Hui, Fox, & Gurevitch, 2017).

Project Portfolio Management (PPM) is a practice in project planning that involves selecting, prioritizing, and managing a collection of projects in a way that aligns with an organization's goals. This concept bears similarities to the idea of constructing an optimal investment portfolio within MPT. PPM aims to create a balanced and diversified project portfolio that maximizes the organization's return on project investments while managing risk (Low, Faff, & Aas, 2019).

In addition, in project management, resource allocation is about distributing resources (e.g., budget, personnel, time) among different projects in a way that optimizes the overall performance of the project portfolio. Both involve strategic allocation decisions to manage risk and achieve specific goals. By incorporating concepts from MPT into project management, organizations can lead to more effective project portfolio management, improved decision-making, and a better understanding of the risks and returns associated with various projects. This approach can help organizations maximize the value they derive from their project investments while mitigating unnecessary risks (Doganoglu, Hartz, & Mittnik, 2018). This study used Modern Portfolio Theory (MPT) to establish the influence of risk management on performance of urban housing projects in Kenya.

Conceptual Framework

According to Chepkwei (2022) when conducting a study, a conceptual framework should be developed to show the relationship between the independent variables and dependent variable. In this study, the independent variables include; project design, risk management while the dependent variable is project performance. This is illustrated in Figure 2.1.

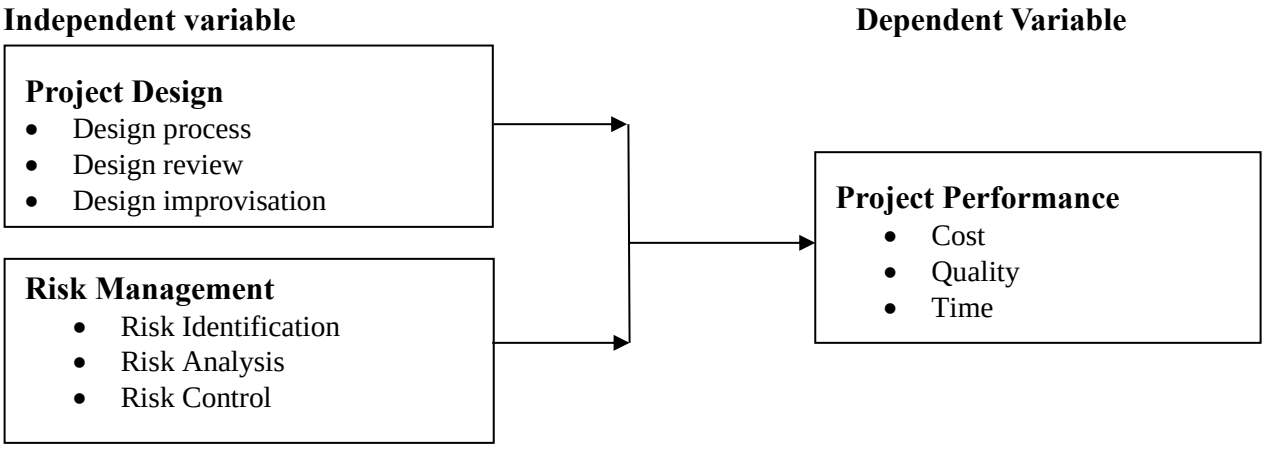

Figure 2. 1: Conceptual Framework

Project Design

Project design involves a systematic approach that encompasses various stages, including the design process, design review, and design improvisation. These elements are crucial for ensuring the successful development and implementation of a project. The design process is the initial phase where project goals, requirements, and constraints are identified and analyzed. This involves understanding the project scope, defining objectives, and determining the key features and functionalities. A well-defined design process helps in establishing a clear roadmap for the project, guiding the team through the stages of ideation, conceptualization, and detailing of the design (Joslin & Muller 2016).

Design review is a critical step in the project design conceptualization. It involves a comprehensive evaluation of the proposed design by stakeholders, experts, and relevant parties. Design reviews aim to identify potential issues, assess the feasibility of the design, and ensure alignment with project objectives. This iterative process helps in refining the design, addressing concerns, and incorporating valuable feedback before moving on to the implementation phase (Oladirin , Olatunji & Hamza, 2020).

Risk Management

Risk management is a comprehensive process that involves the systematic identification, analysis, and control of potential risks that may impact an organization's objectives. The first critical step in this process is risk identification, where organizations strive to recognize and catalog all potential threats and vulnerabilities that could affect their operations (Junior & Carvalho 2016). This involves a thorough examination of internal and external factors, such as market dynamics, regulatory changes, technological advancements, and organizational structure. By identifying risks at an early stage, businesses can proactively address potential challenges and minimize the impact on their goals (Pimchangthong & Boonjing 2017).

Following risk identification, the next step is risk analysis. This phase involves a deeper examination of the identified risks to understand their potential consequences and likelihood of occurrence. Quantitative and qualitative methods are often employed to assess the magnitude of impact and the probability of each risk materializing. Through risk analysis, organizations can prioritize their focus on the most critical threats and allocate resources more efficiently. This step

enables informed decision-making and ensures that mitigation efforts are targeted towards the most significant risks, optimizing the overall risk management strategy(Kiarie, 2017).

Empirical Review

Project Design and Project Performance

Hanyurwimfura and Mulyungi (2020) conducted a study on the influence of project design documentation on the performance of government projects in Rwanda. A survey using a closed ended questionnaire was conducted on 110 managers obtained through stratified sampling from a total of 150 top managers of nine selected ministries in Rwanda. Data collected was analysed through SPSS version 21, for both descriptive and inferential statistics. Regression analysis was used to establish the relationship between the dependent and the independent variables. From the research findings a majority of the respondents strongly agreed that; the project had clear documentation specifications with a mean score of 4.48,the design of organized project documentation by a mean of 4.25 while, project design involved a team of multiple stakeholders represented by a mean of 4.20, problems and needs were identified and 36 solutions strategized as shown by a mean of 4.17 and impartial reviews were conducted to ensure specifications are met as shown by a mean of 4.06. The study concludes that the regulatory and legal conditions should be clear to the project team and a clear plan outlining timeframe for acquiring the products should be in place since it also affects performance of government projects in the District. Cleland & Ireland, (2017) opined project performance largely depends on overcoming the main influences that impede achievement of the desired project goals and objectives. Therefore, for project performance to be realized, all the factors and influences directly affecting it must be eliminated or alternatively minimized to a smaller scale that does not have any significance to be bearing on its performance.

according to Menoka, (2018) did a study on stakeholder involvement in documentation and sustainability related to project performance in construction. The study sought to improve stakeholder involvement in documentation in construction project performance through achieving construction sustainability. A framework was developed and include different stakeholders with sustainability driven project performance. The research was conducted as an empirical investigation and the findings depicted that effective preparation and presentation of stakeholder involvement contributes to improve the construction project performance through achieving the construction sustainability. The study found also that there is variation of perception of projects participants‟ roles, stakeholder involvement, and construction sustainability and construction project performance towards organizations.

Odhiambo (2018) researched on the effects of project design practices on implementation of poverty-alleviation mariculture projects in the coast of Kenya. The research was based on the logical framework, results based approach, capabilities approach, and participatory development that provide the foundation for project design and implementation. A combination of quantitative and qualitative research approaches was adopted for this study. The quantitative approach involved the application of survey method in the form of a cross sectional design. A sample size of 189 was targeted and a response rate of 96.3 percent (182 respondents) obtained. Combined multiple regression analysis revealed that there was a significant positive relationship between monitoring and evaluation planning (as measured by tracking progress and timeliness) and implementation of poverty alleviation mariculture projects. Further, there was a significant positive relationship between situation analysis practices as measured by stakeholder analysis and implementation of poverty alleviation mariculture projects.

Gitonga, Nyang'au and Muchelule (2022) researched on project design and performance of urban road projects in Kenya. The study adopted descriptive survey research, while target population was 408 construction registered professionals within Kenya urban roads authority projects. A sample size of 202 was used. Primary data was be collected through the administration of questionnaires. The results revealed that project design had a positive and significant influence on the performance of urban road projects in Kenya. The study concluded that project design significantly contributes towards enhanced performance of urban road projects in Kenya. The study recommended that construction firms management need to strengthen their project design. In particular, the management should focus on enhancing the following project design aspects: model development, model optimization, model visualization and technology integration.

Joslin and Muller (2016) studied the impact of project methodologies on project success in different project environments. The purpose of this paper is to qualitatively validate the constructs of a theoretically derived research model while gaining insights to steer the direction of a greater study on methodologies, their elements, and their impact on project success. In doing so, to investigate whether different project environments, notably project governance, impacts the relationship between methodologies and project success. There is a positive relationship between project methodology elements and the characteristics of project success; however, environmental factors, notably project governance, influence the use and effectiveness of a project methodology and its elements with a resulting impact on the characteristics of project success.

Oladirin , Olatunji and Hamza (2020) studied the effect of Selected Procurement Systems on Building Project Performance in Nigeria**.** This study examines the effect of procurement systems on building project performance in Nigeria, with a view to assess their effect on cost and quality. The data for this study were collected with the aid of structured questionnaires which were administered to actors in the construction industry in Lagos state being the major hub of construction activities in Nigeria. The questionnaires were related to the variants of procurement systems common to the Nigerian construction industry. Data analysis was done using descriptive statistics. The result revealed that the traditional system of procurement is the most adopted option in project execution in Nigeria. Meanwhile, design and build system performs better in cost, but lag construction management system in quality achievement. The study concluded that no procurement system is a do it all in that a procurement system may perform better than the other in an instant and fail in others as revealed in the findings.

Crowther and Ajayi (2019) carried out research on the impacts of 4D BIM on construction project performance. This study investigates the impacts of 4D BIM on construction projects. An exploratory sequential mixed method research was conducted to initially explore the topic via interviews and literature review, and, subsequently, the themes derived were put into questionnaires to elicit expert knowledge on a wider industry scale. The data were analyzed using thematic analysis, reliability analysis, Kruskal-Wallis test and factor analysis. Across the objectives around the impacts of 4D BIM on project reliability, monitoring and diagnosis, the findings presented eight key ways the 4D BIM support project performance. Examples of component factors that were raised was planning efficiency to enhance planner output, assessment and directive with a better comparison of planned and actual progress, and thorough/comprehensive risk reflection to cover wide ranges of issues. Upon further reflection, the finding highlighted the issues of the lack of shared responsibility outside of the planner and BIM coordinator, severe lack of understanding and training regarding 4D BIM and complexity of carrying out the process effectively.

Choi, *et al* did research on holistic performance evaluation of highway design-build projects. Many state transportation agencies (STAs) have adopted alternative contracting methods, including design-build (DB) contracting, to accelerate construction. Although DB has become increasingly common in recent years, very little definitive information is available about its performance with regards to key project performance indicators for highway rehabilitation projects. The lack of holistic quantitative performance assessments may result in STAs being misled when attempting to determine the best procurement methods and techniques for significant projects. This study fills this knowledge gap by using a rich dataset to evaluate the performance of DB contracting. A series of quantitative analyses were conducted to assess the likely effects of DB contracts on key project performance measures such as schedule, cost, and change orders. The results reveal that DB facilitates on-time project completion and results in fewer contract change orders during construction. No strong evidence, which indicates that DB contracts lead to greater cost increases over the traditional method, was found.

Risk Management and Project Performance

Junior and Carvalho (2016) researched on the impact of project risk management on project performance: an empirical study. The goal of this study is to comprehend the impact of risk management on project performance. Further it aims to investigate the degree of diffusion of risk management practice in Brazilian companies. The methodological approach involves a survey of 415 projects at different levels of complexity in different industrial sectors in several states of Brazil. The results demonstrate that adopting risk management practices has a significant positive impact on project success. They also show a positive impact from the presence of a risk manager on project success. The study's principal limitations are the methodological choice of non-probability sampling and a questionnaire based on respondent perception. From the practical point of view, paying attention to uncertainties during the project, making use of the risk management techniques and deeply understand the business environment are critical success factors, demanding attention of project managers and risk managers. The results demonstrate the impact of risk management practices on project success. They also show a positive impact from the presence of a risk manager on project success. Furthermore, it demonstrated the importance of soft skill in risk management.

Pimchangthong and Boonjing (2017) conducted research on the effects of risk management practice on the success of IT project. The objectives of this research were to explore risk management practices influencing the success of IT projects. Data were collected from 200 project managers, IT managers, and IT analysts in the IT firms through questionnaires and analyzed using the Independent Sample t-test, One-way ANOVA, and Multiple Linear Regression at the statistical significance level of 0.05. The results demonstrated that the differences in organizational types affected the success of IT projects in all aspects, while the differences in organizational sizes affected the success of IT projects in terms of the aspect of product performance as well as total aspects.

Kiarie (2017) conducted research on the effect Of Risk Management Strategies On Project Performance Of Small and Medium Information Communication Technology Enterprises In Nairobi, Kenya. The main objective of this study is to establish the effects of risk management strategies on the project performance of small and medium information communication technology (ICT) enterprises in Nairobi, Kenya. The study was governed by four theories including Logical Framework Approach, Project Risk Analysis and Management model, Network Theory and Portfolio theory. The independent variables were the risk management strategies while dependent variable was the project performance of the SME ICT project. A descriptive research design was

adopted. Target population was 48 ICT SMEs in Nairobi, Kenya. The study adopted random sampling technique to select sample size of the project staff in the target population. Primary data was collected using a questionnaire which was self-administered through drop and pick questionnaires to sampled members of the employees working in the ICT SMEs. The data was then summarized, coded and tabulated. A multiple regression model was applied to determine effects of risk management strategies on project performance of ICT SMEs in Nairobi, Kenya. An effective risk management practices encourages the ICT enterprises to identify and quantify risks and to consider risk containment and risk reduction policies. The study established that there existed a positive relationship between risk management strategies affecting project performance and ICT project performance for SMEs in Kenya and were statistically significant at 0.05 level.

Carvalho and Junior (2016) researched on the impact of risk management on project performance: the importance of soft skills. This study aims to elucidate the relationship between risk management and project success, considering the contingent effect of project complexity. This approach also combines aspects of soft and hard skills. This methodological approach involves a literature review to underpin the conceptual framework and a survey for empirical validation, using structural equation modelling. The hypotheses were tested based on a field study involving 263 projects distributed among eight industries. The fieldwork involved interviews with project managers and risk managers and an analysis of internal company documents about the projects' performance. The structural model presented herein provides a means for correlating the hard and soft sides of risk management with project success, understanding the moderating effect of project complexity. The soft side of risk management appears most prominently and explains 10.7% of the effect on project success. Moreover, the soft side supports the hard side, since we found a significant correlation that explains 25.3% of the effect on the hard side.

RESEARCH METHODOLOGY

The current study adopted a descriptive research design. The target population for the study was 140 (engineers, supervisors and contractors) involved in the implementation of infrastructure projects implemented by Housing finance company of Kenya. The study used a census since the population of 140 is small and the study aimed to reach all the housing infrastructure projects in the study area. This research used a questionnaire to collect primary data. This study adopted the self-administered questionnaire approach. This study gathered both quantitative and qualitative data. Qualitative data analyzed by use of content analysis. Quantitative data was coded then analyzed using Statistical Package for Social Sciences (SPSS) computer software version 28. Descriptive statistics were used to analyze the data in frequency distributions and percentages which were presented in tables and figures. The multiple regression model was used.

RESEARCH FINDINGS AND DISCUSSION

The study sample size was 140 (engineers, supervisors and contractors) involved in the implementation of infrastructure projects implemented by Housing finance company of Kenya. The pilot study was carried out on 14 respondents who are sufficient based on Glesne (2015) who stated that 10% of the population is adequate to constitute the pilot test size. Therefore, the remaining 126 were issued with questionnaires for data collection. Out of the issued questionnaires, 117 were returned having been dully filled. As presented in table 4.1, the response rate was 92.9%. As indicated by Metsamuuronen (2017), a response rate that is above fifty percent is considered adequate for data analysis and reporting while a response rate that is above 70% is classified as excellent. Hence, the response rate of this study was within the acceptable limits for drawing conclusions and making recommendations.

Descriptive Statistics Analysis

In this section, the study provides descriptive statistics analysis of study variables. The analysis includes measures such as mean, and standard deviation to describe the data comprehensively. It analyses the likert scale questions per study objective. The study requested respondents to rate their responses in a scale of 1-5 where 1= Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree and 5=Strongly Agree. The means and standard deviations were used to interpret the findings where a mean value of 1-1.4 was strongly disagree, 1.5-2.4 disagree, 2.5-3.4 neutral, 3.5-4.4 agree and 4.5-5 strongly agree. Standard deviation greater than 2 was considered large meaning responses were widely spread out and not tightly clustered around the mean.

Project Design

The first objective of the study was to determine the influence of Project Design on performance of urban housing projects in Kenya. Respondents were asked to indicate the extent to which they agree or disagree with the following statements relating to the influence of Project Design on performance of urban housing projects in Kenya. Table 1 presents summary of the findings obtained.

Table 1: Descriptive Statistics on Project Design

Statement	Mean	Std. Dev.
The clarity of project design documentation significantly impacts the performance of urban housing projects.	3.942	0.367
Identifying problems and needs early in the project design phase leads to better outcomes for urban housing projects.	3.901	1.153
A clear plan outlining timeframes for acquiring materials and resources positively influences the performance of urban housing projects.	3.857	1.169
Involvement of a diverse team of stakeholders in project design contributes to the success of urban housing projects.	3.832	0.353
Impartial reviews of project specifications during the design phase are crucial for ensuring the success of urban housing projects.	3.829	0.565
Adherence to regulatory and legal conditions is essential for the successful execution of urban housing projects.	3.768	0.560
Organized project documentation enhances the efficiency and effectiveness of urban housing projects.	3.726	0.213
Aggregate Score	**3.836**	**0.626**

The findings show that the respondents agreed on average that the clarity of project design documentation significantly impacts the performance of urban housing projects (M= 3.942, SD= 0.367); that identifying problems and needs early in the project design phase leads to better outcomes for urban housing projects (M= 3.901, SD= 1.153); and that a clear plan outlining timeframes for acquiring materials and resources positively influences the performance of urban housing projects (M= 3.857, SD= 1.169). They also agreed that involvement of a diverse team of stakeholders in project design contributes to the success of urban housing projects (M= 3.832, SD= 0.353); and that impartial reviews of project specifications during the design phase are crucial for ensuring the success of urban housing projects (M= 3.829, SD= 0.565). Respondents further agreed that adherence to regulatory and legal conditions is essential for the successful execution of urban housing projects (M= 3.768, SD= 0.560); and that organized project documentation enhances the efficiency and effectiveness of urban housing projects (M= 3.726, SD= 0.213).

The finding above supported by an aggregate mean of 3.836 (SD= 0.626) show that the respondents agreed that project design influences performance of urban housing projects in Kenya. The finding agrees with Joslin and Muller (2016) who emphasize the significance of project methodologies in shaping project success, highlighting how effective project design can positively impact project outcomes. They argue that a well-defined project design process lays the groundwork for successful project execution by providing a clear roadmap and guiding the team through various stages of implementation. Furthermore, Gitonga, Nyang'au, and Muchelule (2022) emphasize the importance of project design in enhancing the performance of infrastructure projects, specifically urban road projects in Kenya. Their study underscores the positive influence of project design on project performance, suggesting that investments in strengthening project design aspects such as model development, optimization, visualization, and technology integration can lead to improved project outcomes. These findings underscore the critical role of project design in shaping the success of urban housing projects in Kenya, emphasizing the need for robust design practices to enhance project performance and ensure the efficient delivery of infrastructure projects.

Risk Management

The second objective of the study was to establish the influence of risk management on performance of urban housing projects in Kenya. Respondents were requested to indicate the extent to which they agree or disagree with the statements relating to the influence of risk management on performance of urban housing projects in Kenya. Table 4.5 presents summary of the findings obtained.

Table 2: Descriptive Statistics on Risk Management

Statement	Mean	Std. Dev.
Implementing effective risk management practices significantly enhances the performance of urban housing projects.	3.992	0.103
Thorough identification and analysis of potential risks contribute to the success of urban housing projects.	3.886	0.819
Involvement of a dedicated risk manager positively impacts the performance of urban housing projects.	3.865	0.38
Regular monitoring and reassessment of risks throughout the project lifecycle are essential for success in urban housing projects.	3.808	0.375
Collaborative approaches to risk management among project stakeholders enhance the overall success of urban housing projects.	3.796	0.714
Proactive mitigation of risks during the planning phase leads to better outcomes for urban housing projects.	3.794	0.74
Adequate allocation of resources to address identified risks improves the performance of urban housing projects.	3.792	1.073
Aggregate Score	**3.848**	**0.601**

From the findings, it is evident that the respondents agreed on average that implementing effective risk management practices significantly enhances the performance of urban housing projects (M= 3.992, SD= 0.103); that thorough identification and analysis of potential risks contribute to the success of urban housing projects (M= 3.886, SD= 0.819); and that involvement of a dedicated risk manager positively impacts the performance of urban housing projects (M= 3.865, SD= 0.38). They also agreed that regular monitoring and reassessment of risks throughout the project lifecycle are essential for success in urban housing projects (M= 3.808, SD= 0.375); and that collaborative

approaches to risk management among project stakeholders enhance the overall success of urban housing projects (M= 3.796, SD= 0.714). Respondents further agreed that proactive mitigation of risks during the planning phase leads to better outcomes for urban housing projects (M= 3.794, SD= 0.74); and that adequate allocation of resources to address identified risks improves the performance of urban housing projects (M= 3.792, SD= 1.073).

The aggregate mean of 3.848 (SD=0.601) and the findings above show that respondents agreed that risk management affects performance of urban housing projects in Kenya. The finding agrees with Junior and Carvalho (2016) who conducted an empirical study investigating the impact of project risk management practices on project success, affirming that adopting risk management practices significantly contributes to project success. Their findings underscore the importance of paying attention to uncertainties during projects and employing risk management techniques to mitigate potential risks effectively. Additionally, Pimchangthong and Boonjing (2017) explored the effects of risk management practices on the success of IT projects, revealing that differences in organizational types and sizes affect the success of projects, emphasizing the importance of tailoring risk management strategies to specific project contexts. These studies collectively highlight the crucial role of risk management in influencing project outcomes, underscoring the importance of implementing robust risk management practices to enhance the performance of urban housing projects in Kenya and mitigate potential project risks effectively.

Performance of Urban Housing Projects in Kenya

The main objective of the study was to determine the influence of project planning practices on performance of urban housing projects in Kenya. Respondents were therefore asked to indicate the extent to which they agree or disagree with the statements relating to performance of urban housing projects in Kenya. Table 3 presents summary of the findings obtained.

Table 3: Descriptive Statistics on Performance of Urban Housing Projects in Kenya

Statement	Mean	Std. Dev.
Stakeholder management plays a crucial role in determining the success of urban housing projects.	3.907	0.237
Stakeholder satisfaction is a key indicator of the success of urban housing projects.	3.902	0.304
The use of advanced monitoring practices contributes to the overall success of urban housing projects.	3.806	0.588
Efficient risk management positively affects the quality of work in urban housing projects.	3.773	0.701
Adequate project design significantly influences the timely completion of urban housing projects.	3.761	1.234
The overall success of urban housing projects is influenced by effective project design.	3.744	0.569
Successful risk management practices positively impact the overall performance of urban housing projects.	3.724	0.706
Aggregate Score	**3.802**	**0.620**

The findings show that the respondents agreed on average that stakeholder management plays a crucial role in determining the success of urban housing projects (M= 3.907, SD= 0.237); that stakeholder satisfaction is a key indicator of the success of urban housing projects (M= 3.902, SD= 0.304); and that the use of advanced monitoring practices contributes to the overall success of

urban housing projects (M= 3.806, SD= 0.588). They were also in agreement that efficient risk management positively affects the quality of work in urban housing projects (M= 3.773, SD= 0.701); that adequate project design significantly influences the timely completion of urban housing projects (M= 3.761, SD= 1.234); that the overall success of urban housing projects is influenced by effective project design (M= 3.744, SD= 0.569); and that successful risk management practices positively impact the overall performance of urban housing projects (SD= 3.724, SD= 0.706).

The findings, indicating respondents' agreement on the critical role of stakeholder management, stakeholder satisfaction, advanced monitoring practices, efficient risk management, and project design in determining the success of urban housing projects, resonate with existing literature on project management and performance. Buertey et al. (2016) explored stakeholder management on construction projects, emphasizing the significance of stakeholder involvement and satisfaction in achieving project success. Their study underscores the importance of addressing stakeholder needs and concerns, aligning with the findings of the current study regarding stakeholder management and satisfaction. Additionally, Crowther and Ajayi (2019) investigated the impacts of 4D BIM on construction project performance, highlighting the importance of advanced monitoring practices in enhancing project outcomes. Their findings emphasize the value of leveraging technological advancements for effective project monitoring, supporting the notion that advanced monitoring practices contribute to project success. They underscore the multifaceted nature of project success and highlight the interconnectedness of stakeholder management, monitoring practices, risk management, and project design in driving the overall success of urban housing projects.

Correlation Analysis

The study computed correlation analysis to test the strength and the direction of the relationship that exists between the dependent and the independent variables. The correlation values range from 0 to 1; if the correlation values are r = ±0.1 to ±0.29 then the relationship between the two variables is small, if it is r = ±0.3 to ±0.49 the relationship is medium, and when r= ±0.5 and above there is a strong relationship between the two variables under consideration. Table 4 presents correlation analysis findings for this study.

Table 4: Correlations

		Performance	Project Design	Risk Management
Performance of urban housing projects in Kenya	Pearson Correlation	1		
	Sig. (2-tailed)			
	N	117		
Project Design	Pearson Correlation	.732**	1	
	Sig. (2-tailed)	.000		
	N	117	117	117
Risk Management	Pearson Correlation	.752**	.007	1
	Sig. (2-tailed)	.000	.174	
	N	117	117	117

The correlation findings reveal a strong positive correlation between project design and the performance of urban housing projects in Kenya ($r = 0.732$, $p < 0.05$). This indicates that as the quality of project design improves, project performance tends to increase as well. This finding is consistent with existing literature that emphasizes the crucial role of project design in achieving project success. For instance, Hanyurwimfura and Mulyungi (2020) highlighted the importance of

clear project documentation and organized project design in enhancing project performance, supporting the correlation between project design and project performance observed in this study.

Similarly, there is a strong positive correlation between risk management and the performance of urban housing projects ($r = 0.752$, $p < 0.05$). This suggests that effective risk management practices contribute significantly to project success by minimizing potential threats and uncertainties. Existing literature, such as the study by Junior and Carvalho (2016), supports this correlation by demonstrating the positive impact of risk management on project success. Their research emphasized the importance of adopting risk management practices to mitigate uncertainties and enhance project outcomes.

Multiple Regression Analysis

In this study it was used to determine the influence of project planning practices on performance of urban housing projects in Kenya.

Model Summary

The study computed model summary to test the amount of variation in dependent variable that can be explained by changes in independent variables. In this study, the model summary was used to determine the amount of variation in Performance of urban housing projects in Kenya as a result of change in risk management, and project design.

Table 5: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.836[a]	.699	.689	.47883

a. Predictors: (Constant), Risk Management, Project Design

The model summary indicates a strong relationship between the predictors (Risk Management, and Project Design) and the dependent variable (Performance of urban housing projects in Kenya), with an overall multiple R of 0.836. This suggests that approximately 69.9% of the variance in project performance can be explained by the combination of these predictors. The adjusted R square, which takes into account the number of predictors in the model, is 0.689, indicating that the model's goodness of fit remains high even after adjusting for the number of predictors. Therefore, the model demonstrates a robust fit, indicating that the selected predictors collectively contribute significantly to explaining variations in the performance of urban housing projects in Kenya.

Analysis of Variance

Analysis of variance table was used to determine if the fitted model was significant. The significance of the model was tested at 95% confidence interval. Table 6 presents the findings obtained.

Table 6: Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	59.733	4	14.933	65.132	.000[b]
	Residual	25.679	112	.229		
	Total	85.412	116			

a. Dependent Variable: Performance of urban housing projects in Kenya

b. Predictors: (Constant), Monitoring Practice, Risk Management,

The ANOVA results indicate that the regression model, which includes the predictors risk management, and project design, significantly explains the variance in the performance of urban housing projects in Kenya ($F(4, 112) = 65.132$, $p < .001$). The regression model accounts for a substantial portion of the total variance, as evidenced by the large F value and the significant p-value. This suggests that the predictors collectively contribute to predicting the performance of urban housing projects. Therefore, based on the ANOVA results, it can be concluded that the regression model provides a statistically significant fit for predicting the performance of urban housing projects in Kenya.

Beta Coefficients of Study Variables

Table 7: Coefficients of Study Variables

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.334	.249		5.357	.000
	Project Design	.288	.111	.155	2.595	.005
	Risk Management	.380	.086	.441	4.396	.000

a. Dependent Variable: Performance of urban housing projects in Kenya

The fitted regression model was as follows:

$$Y = 1.334 + 0.288\ X_1 + 0.380\ X_2$$

For the variable project design, the B value of 0.288 with a significance of 0.005 suggests a positive relationship with the performance of urban housing projects in Kenya. This suggests that for every one-unit increase in the quality or effectiveness of project design, there is a corresponding increase of 0.288 units in the performance of urban housing projects in Kenya. This result aligns some literature that emphasizes the importance of project design in influencing project performance. For example, Cleland and Ireland (2017) argue that effective project design is crucial for overcoming obstacles and achieving project goals, suggesting a stronger relationship than what is indicated by this finding.

Regarding risk management, the B value of 0.380 with a significance of 0.000 suggests a strong positive relationship with project performance. This implies that effective risk management practices significantly contribute to the success of urban housing projects in Kenya. This finding aligns with literature such as the study by Junior and Carvalho (2016), which found that adopting risk management practices positively impacts project success. The significance of this variable underscores the importance of prioritizing risk management strategies in project planning and execution.

Conclusions

The results highlight the critical role of comprehensive project design in shaping the success of urban housing projects in Kenya. Effective project design, characterized by clear documentation, early problem identification, and stakeholder involvement, significantly influences various project outcomes such as timely completion, resource allocation, and stakeholder satisfaction. Therefore, it can be concluded that robust project design practices positively impact the performance of urban housing projects in Kenya by providing a structured framework for project execution and aligning project objectives with stakeholder expectations.

The study findings underscore the importance of proactive risk management in mitigating uncertainties and enhancing project success in the context of urban housing projects. Effective risk management practices, including thorough risk identification, dedicated risk managers, and proactive mitigation strategies, contribute to improved project outcomes such as quality enhancement, stakeholder satisfaction, and timely completion. Thus, it can be concluded that sound risk management positively influences the performance of urban housing projects in Kenya by minimizing potential threats and ensuring project resilience throughout the project lifecycle.

Recommendations

Based on the study findings indicating the significant influence of project design on urban housing project performance, it is recommended that housing finance companies in Kenya prioritize robust project design practices. This involves ensuring clarity in project design documentation, early identification of problems and needs, and the development of clear plans outlining timeframes for resource acquisition. Additionally, involving a diverse team of stakeholders in the project design phase and conducting impartial reviews of project specifications are essential. Housing finance companies should emphasize adherence to regulatory and legal conditions and organize project documentation efficiently to enhance project efficiency and effectiveness.

Given the significant impact of risk management on urban housing project performance, it is recommended that housing finance companies prioritize the implementation of effective risk management practices. This includes thorough identification and analysis of potential risks, involvement of dedicated risk managers, and regular monitoring and reassessment of risks throughout the project lifecycle. Collaborative approaches to risk management among project stakeholders and proactive mitigation of risks during the planning phase are crucial. Adequate allocation of resources to address identified risks should also be emphasized to improve project performance and mitigate potential project risks effectively.

Recommendations for Further Studies

For further studies, it is recommended to explore the longitudinal effects of the implemented recommendations on the performance of urban housing projects in Kenya. Longitudinal studies can provide insights into how the adoption of enhanced project planning practices, including project design, risk management

influences project outcomes over time. Additionally, comparative studies across different regions could offer valuable insights into the effectiveness of various project planning strategies in different contexts. Moreover, qualitative studies focusing on the perspectives of various stakeholders involved in urban housing projects could provide deeper insights into the challenges and opportunities associated with project planning practices and their impact on project performance. These recommendations can contribute to a more comprehensive understanding of the dynamics between project planning practices and urban housing project performance, thereby informing future interventions and strategies in the field.

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