

A Thematic Framework for Mitigating Risks in Mortgage-Financed Projects in Kenya

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Abstract

Mortgage-financed construction projects (MFCPs) are central to Kenya's housing delivery agenda, yet they remain vulnerable to diverse risks that compromise performance. This study investigates the nature of risks affecting MFCPs and explores practical mitigation strategies tailored to the Kenyan context. A survey research design was adopted, targeting mortgage-financed projects initiated during the 2021/2022 financial year. Data were collected using questionnaires administered to developers. Quantitative data were analyzed using descriptive statistics, while qualitative insights were synthesized into a thematic framework for risk management. The findings revealed six dominant categories of risk: construction, financial, planning, legal/regulatory, market, and environmental. Construction risks, particularly contractor inefficiencies and material cost escalation, were most pronounced, followed by financial and planning risks. Developers emphasized that these risks are interconnected, often compounding one another to undermine project outcomes. Thematic analysis identified seven mitigation pillars: monitoring and inspection, planning and budgeting, insurance and financial risk management, due diligence and contractor selection, regulatory compliance and legal safeguards, government and macroeconomic support, and professional oversight and expertise. The study concludes that effective performance of MFCPs requires a proactive, integrated risk management approach embedded across the project lifecycle. By adopting the harmonized framework, developers, financiers, and policymakers can enhance sustained success in Kenya's mortgage-financed housing sector.

Keywords: Mortgage Financing, Construction Risks, Mitigation Strategies, Kenya

Introduction

Globally, mortgage-financed construction projects (MFCPs) are recognized as critical mechanisms for housing delivery, enabling households to access homeownership while supporting large-scale real estate development. However, these projects are inherently risk-intensive, exposed to financial volatility, regulatory bottlenecks, and operational inefficiencies (Zou & Sunindijo, 2015). Rising interest rates, inflationary pressures, and sustainability requirements have further complicated project execution, making risk mitigation a central concern in construction management (World Bank, 2023). Effective risk management frameworks are therefore essential to safeguard project viability and ensure resilience in the face of global economic uncertainties.

Across Africa, rapid urbanization, projected to reach 60% by 2030, has intensified the demand for housing, with the continent facing a deficit of over 51 million units (UN-Habitat, 2020). Mortgage financing is increasingly promoted as a solution, yet MFCPs remain vulnerable to systemic risks such as weak regulatory enforcement, poor planning, and environmental challenges (Muigai et al., 2025). The financing gap, estimated at USD 1.4 trillion, underscores the inadequacy of existing housing finance systems (Centre for Affordable Housing Finance in Africa, 2023). Regional studies emphasize that without robust risk mitigation strategies, including insurance, contingency planning, and professional oversight, MFCPs are unlikely to deliver sustainable housing outcomes.

In Kenya, MFCPs are central to the government's Affordable Housing Programme, which seeks to address a housing deficit of approximately 2 million units (Kenya National Bureau of Statistics, 2025). Despite their importance, these projects face persistent risks: construction delays, cost overruns, contractor inefficiencies, and financing challenges (Mungai et al., 2025). Developers and financiers alike highlight the need for proactive risk mitigation strategies, including monitoring, budgeting with contingency reserves, insurance, and regulatory compliance. Recent evidence shows that while risks are well-documented, there is limited empirical analysis of how they can be systematically mitigated in Kenya's mortgage-financed housing sector (Tarek et al., 2022).

Although MFCPs are intended to enhance housing delivery, their performance continues to be undermined by diverse risks. Existing studies have largely focused on identifying risks rather than exploring practical mitigation strategies tailored to Kenya's context. This gap limits the ability of policymakers, financiers, and developers to design effective interventions that strengthen project resilience. While global and regional literature emphasizes the prevalence of risks in construction projects, there is limited empirical evidence on mitigation strategies specific to MFCPs in Kenya. Most studies treat risks as static challenges, overlooking the dynamic and multi-layered approaches required to manage them effectively. This study seeks to address the identified gap by: (i) identifying the dominant risks associated with MFCPs in Kenya, (ii) exploring practical mitigation strategies employed by developers and financiers, and (iii) synthesizing thematic insights into a framework for risk management tailored to Kenya's MFCPs.

Methodology

Research Design

A research design establishes a framework for data gathering and analysis. This study adopts the survey research design described by Bryman (2012) and Creswell and Plano Clark (2017). Bryman (2012) describes a survey as one that studies multiple cases at a single point in time by measuring quantifiable data with the aim of identifying patterns of association. The advantage of data quantification is that it provides a consistent benchmark to the researcher and, at the same time, makes it possible to understand relationships between variables (Bryman, 2012).

Sampling Methods and Sample Size

The unit of analysis was the construction project, while the unit of observation was either the site agent or the clerk of works found on site. Inferences made were on all mortgage-financed construction projects, given that the sample size was selected probabilistically as outlined in the next section.

In this study, the population included all construction projects financed through mortgages throughout the country. This study focuses on the 1,063 mortgages initiated during the 2021/2022 financial year, as per the annual banking report by the Central Bank of Kenya (2023). The sample size was calculated based on the following formulae from Cochran (1977) and Baartt et al. (2001).

$$n_o = \frac{t^2 \times s^2}{e^2}$$

Where: -

- n_o = required return sample size
- t = alpha level value (0.01 = 2.576 for sample size of 120 or more; the alpha level of .01 indicates the level of risk the researcher is willing to take that true margin of error may exceed the acceptable margin of error.) 2.576 is the z-score for a 99% confidence interval.
- s = estimated standard deviation in population for 7-point scale (1.167; estimate of variance deviation for 7-point scale calculated by using 7 [inclusive range of scale] divided by 6 [number of standard deviations that include almost all (approximately 98%) of the possible values in the range])
- e = acceptable level of error for the mean being estimated (0.21; number of points on primary scale $\times$ acceptable margin of error; points on primary scale = 7; acceptable margin of error = .03 [error researcher is willing to accept])

Therefore;

$$n_o = \frac{2.576^2 \times 1.167^2}{0.21^2} = 205$$

However, since this sample size exceeds 5% of the population (1,063 $\times$ 5%=53), the following (Cochran, 1977) correction formula should be used to estimate the final sample size.

$$n_f = \frac{n_0}{1 + \frac{n_0}{\text{population}}} = \frac{205}{1 + \frac{205}{1063}} = 171 \text{ projects}$$

Where;

- n_f = final sample size
- n_0 = original sample size
- Population = target population

This study adopted simple random sampling as its choice of selecting the sample size from the population. According to Kothari (2004), this sampling method is also known as chance sampling or probability sampling because each item in the population has an equal chance of being included in the sample, and each of the possible samples, in the case of a finite universe, has the same probability of being chosen. An ideal sample is one that meets the requirements of efficiency, representativeness, dependability, and adaptability.

Data Collection

Upon approval of the research proposal by the university, the researcher sought permission from the National Commission for Science and Technology and Innovation (NACOSTI) to collect field data. According to Creswell (2003), structured interviews and questionnaires are the two most common research methods associated with survey research design. The latter was adopted in this study as the method of collecting data. The measured indicators were derived from previous literature and refined so that they were not only appropriate for the respondents but also generated enough data for hypothesis testing. The questionnaires were self-administered.

Data Analysis

The quantitative data were subjected to descriptive analysis using SPSS software. Descriptive statistics were used mostly to describe the distribution of variables. Measures of frequency (percent, count) and measures of central tendency (mean) were among the descriptive statistics that were performed. Thematic analysis was used for the qualitative data.

Validity and Reliability

To ensure the questionnaire's validity, expert reviews were conducted to establish face and content validity. Five experts, including three from academia (thesis supervisors) and two from the industry, all with a combined experience of 112 years, gave suggestions on how to improve the data collection instrument. Further, a pilot test was performed with a subset of the target audience ($n=10$) to identify issues. Minor revisions were made following suggestions from the experts and the pilot study participants.

Results and Discussion

Background Information

Five aspects of background information were considered in the data collection tool. These were: level of education, professional background, type of project, project value, and project duration. Their results have been presented in the following sections.

Level of Education

Results presented in Figure 1 showed that 52.5% (n=64) of the respondents had a bachelor's degree, while 36.1% (n=44) had a Master's degree. Together, these two categories account for 108 out of 122 respondents (approximately 89%). This suggests that the sector is largely comprised of highly educated professionals. This could be attributed to the fact that most financial institutions prefer to give mortgages to salaried individuals who tend to be educated professionals. 5.7% (n=7) had a Diploma while only 3.3% (n=4) were PhD holders. The low number of Doctorates was expected, given that only a small percentage (probably only those in academia) of professionals advance beyond a master's degree. The least represented group was the post-secondary certificate holders, 2.4% (n=3).

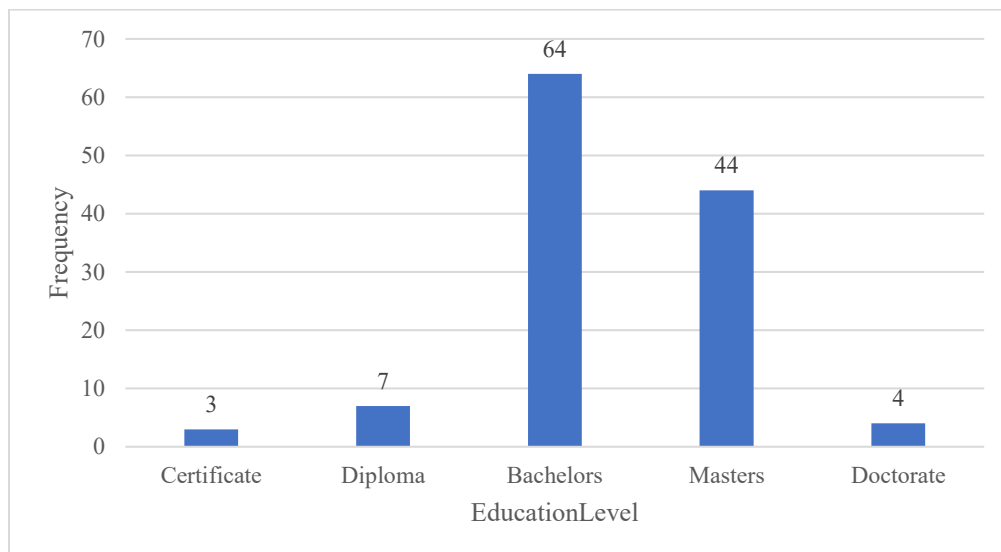


Figure 1: Level of Education

The findings reveal that Kenya's mortgage-financed construction sector is dominated by highly educated developers, with Bachelor's and Master's degrees being the norm. This likely enhances professionalism but may also create barriers for those with lower academic qualifications. The financial institutions appear to value highly educated professionals.

Professional Background

Given the expected diverse backgrounds of the respondents (developers), the question on their professional background was framed in an open-ended format. The results have been presented in the form of a word

[illegible]

Type of Projects

The respondents were asked to indicate the type of project they were currently undergoing, and which was mortgage-financed. Results presented in Figure 3 showed that residential houses were the most commonly mortgage-financed with a frequency of 68.3% (n=82). They were followed distantly mixed-use development 13.3% (n=16) and commercial buildings 11.7% (n=14). Office buildings and industrial houses were the least mortgage-financed types of construction projects, each with a frequency of 3.3% (n=4).

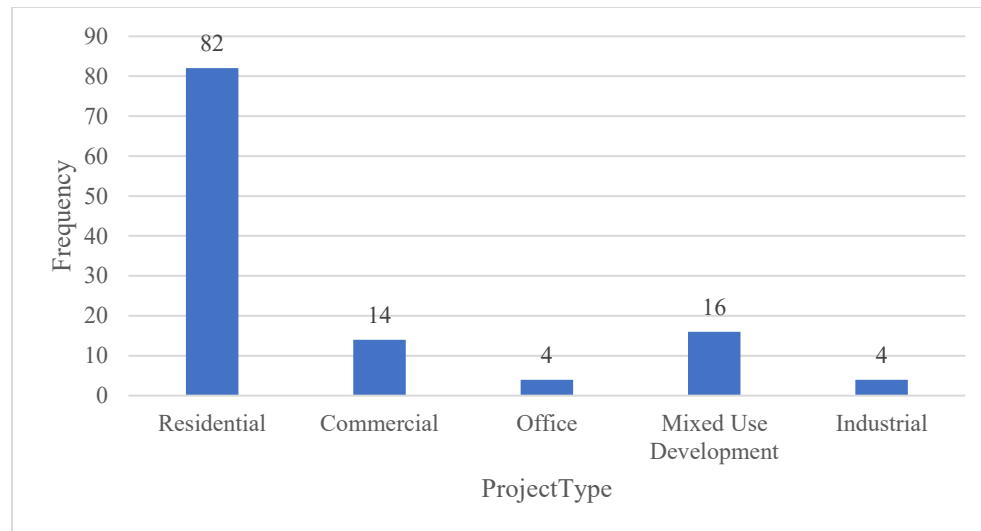


Figure 3: Type of Project

The results revealed that residential projects overwhelmingly dominate the mortgage-financed construction sector in Kenya, with commercial, office, mixed-use developments, and industrial projects making up a much smaller share. The overwhelming dominance of residential projects likely reflects Kenya's ongoing demand for housing, driven by population growth, urbanization, and government initiatives such as affordable housing programs. Mortgage products and incentives may be more accessible or attractive for residential developments compared to other sectors. The lower numbers for commercial, office, and industrial projects may be a number of things, (i) mortgage financing is less commonly used or less available for non-residential developments, (ii) these sectors might rely more on alternative financing structures (e.g., corporate loans, equity investment), and (iii) there may be greater perceived risk or longer payback periods for non-residential projects, making them less attractive for mortgage-backed funding. This is because such projects are more capital-intensive compared to residential projects.

The presence of 16 MUD projects (13.3%) suggests a growing trend towards integrated developments that combine living, working, and leisure spaces. This aligns with global urbanization trends and can enhance project viability by diversifying revenue streams and meeting multiple market needs. This is fundamental in ensuring that completed projects are capable of repaying the loan obligations.

Project Value

The respondents were asked to indicate the value of the construction project they were currently undertaking. Figure 4 presents interesting results where the extremes recorded the highest frequencies. The results assumed an inverted bell curve. The majority of the construction projects ($n=62$, 51.2%) undertaken had a value of "up to 20 million" Kenyan shillings, followed by those with a value of "above 120 million" Kenyan shillings ($n=32$, 26.4%). Projects worth KShs. 81 – 100 million had a frequency of 9.1% ($n=11$) while those worth KShs. 21 – 40 million had a frequency of 8.3% ($n=10$). Projects worth KShs. 41 – 60 million and KShs. 61 – 80 both came last with a frequency of 2.5% ($n=3$).

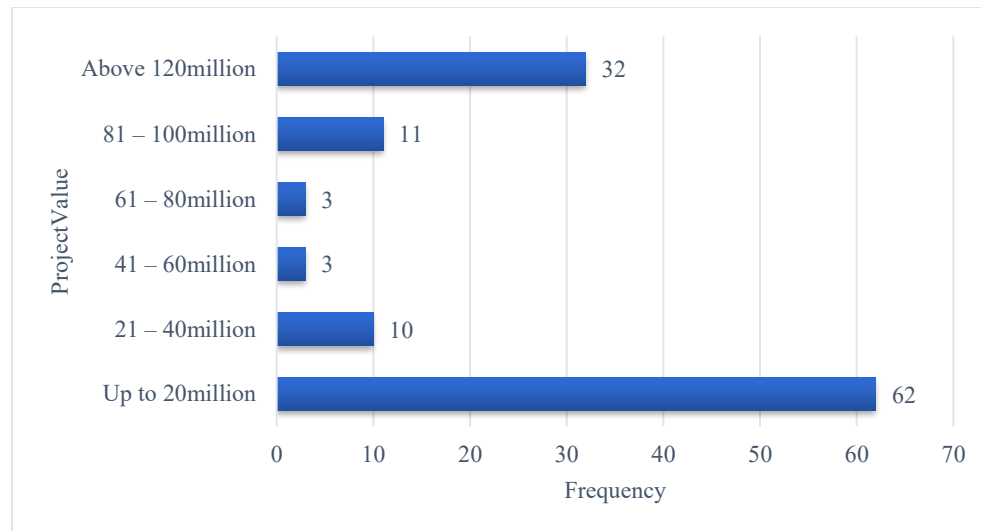


Figure 4: Project Value

The majority of projects (51%) fall into the “Up to 20 million” category. This suggests a strong concentration of small- to mid-scale developments, likely targeting affordable housing, which is a significant need in Kenya. This aligns with national priorities like the Affordable Housing Programme, which aims to increase access to affordable housing for low- and middle-income households (World Bank, 2020). The second-largest category (26%) includes high-end or large-scale developments. These could be commercial real estate, mixed-use developments, or luxury residential units aimed at upper-income markets or investors. This may reflect Kenya’s growing upper-middle-income earners. The data reveals a “missing middle” in project value (21–100 million), indicating a possible need for more tailored financing instruments for mid-sized developers.

Project Duration

The project duration was measured in weeks. This was done based on intervals of 12 weeks. Results in Figure 5 showed a fair distribution across all groups. Projects with a duration of “above 72 weeks” were the most with a frequency of 24.8% (n=30). Projects with a duration of “61-72 weeks” had the least representation with a frequency of 5.0% (n=6). Short-duration projects of “less than 12 weeks” had a frequency of 9.1% (n=11).

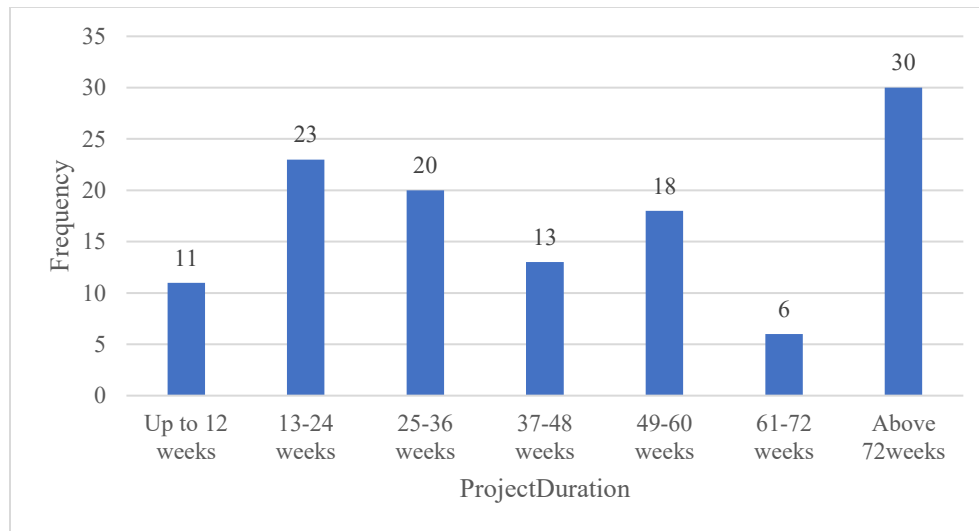


Figure 5: Project Duration

The highest number of projects (24.8%) reported durations of above 72 weeks, indicating that a significant portion of mortgage-financed developments in Kenya are long-term, complex projects, likely to be large-scale or multi-phase developments. This finding complements the earlier findings on project values, where a substantial number of projects also had high values, suggesting that large investments correlate with extended construction timelines.

The second most common durations are 13–24 weeks (19%) and 25–36 weeks (17%). These reflect short-to medium-term construction projects, likely aligned with small- to mid-sized residential projects, such as single-family homes, low-rise apartments, or smaller gated communities. Only 11 projects (9%) were completed in up to 12 weeks, suggesting that rapid builds are rare, possibly due to challenges such as bureaucratic delays (permits, approvals), shortage of skilled labour or materials, and limited use of prefabricated or modular technologies, among other reasons. Long project durations raise the risk profile for lenders and developers, especially in Kenya, where project delays are common (World Bank, 2021).

Current Performance of MFCPs

Five aspects were used to evaluate the performance of MFCPs. These were: budget adherence, schedule adherence, project quality, safety standards, and project cash flow. A seven-point Likert scale was used. The results have been presented in Table 1.

Table 1: Performance of MFCPs

Variable	N	Min	Max	Mean	SD	CV
Budget Adherence	123	1	6	3.21	.861	27%
Schedule Adherence	123	1	5	3.15	.906	29%
Quality Expectations	123	2	7	4.89	.895	18%
Safety Incidents	123	1	7	4.86	1.719	35%
Cash Flow Problems	122	1	7	4.23	1.365	32%

Source: (Author, 2025)

Budget adherence in mortgage-financed construction projects (MFCPs) in Kenya shows a mean score of 3.21, indicating slight overruns attributed to unforeseen costs and poor planning. Schedule adherence averages at 3.15, revealing that most projects are behind schedule, often due to manageable issues but occasionally due to systemic challenges. Project quality averages 4.89, indicating a focus on meeting standards, though some projects face significant quality deficiencies. Safety standards show a mean of 4.86, with most incidents being minor, but serious accidents signal a need for better safety management. Cash flow issues are prevalent, with a mean of 4.23 reflecting moderate challenges that disrupt payments and project timelines. High variability in responses across these metrics illustrates the inherent risks and inconsistencies within the construction sector in Kenya.

Risks Associated with MFCPs

This section sought to establish the risks associated with MFCPs. Six types of risks were considered. A seven-point Likert scale ranging from “extremely low” to “extremely high” was adopted for both risk probability and risk impact. The means were converted to RII values by dividing by the highest possible score on the Likert scale (7) as advocated for by Tarek et al. (2022). The overall risk impact was calculated by obtaining the means of the three types of risk impact evaluated. The risk level was then calculated by multiplying the risk probability and the overall risk impact, and converted to a percentage.

A total of 41 risks were evaluated and summarised in six categories, namely market risks, financial risks, planning risks, construction risks, legal and regulatory risks, and environmental risks as presented in Table 2.

Table 2: Risks Associated with MFCPs

	Risks	P	Ic	It	Iq	I	R	Rank
1.	Market risks	0.63	0.65	0.47	0.48	0.53	35%	4
2.	Financial risks	0.66	0.75	0.58	0.52	0.62	41%	2
3.	Planning risks	0.62	0.60	0.85	0.55	0.67	41%	2
4.	Construction risks	0.54	0.81	0.79	0.71	0.77	42%	1
5.	Legal and regulatory risks	0.45	0.60	0.64	0.48	0.57	26%	5
6.	Environmental risks	0.41	0.60	0.55	0.46	0.54	22%	6

P=Risk Probability, Ic=Impact on Cost, It=Impact on Time, Iq=Impact on Quality, I=Overall Impact (Mean; Ic, It, Iq)

Mitigating Risks in MFCPs

To complement the quantitative findings and inform the formulation of a robust risk management framework, this study conducted a thematic analysis of qualitative responses from developers. Respondents were asked: “How can risks associated with mortgage-financed construction projects be mitigated?” Their insights, drawn from practical experience, were thematically analyzed using the six-phase approach proposed by Braun and Clarke (2006). A word cloud was generated to visualize the most frequently cited concepts (see Figure 6), revealing dominant terms such as monitoring, planning, insurance, contingency, due diligence, contractors, regulation, financing, and government.



Figure 6: Word Cloud on Mitigating Risks Associated with MFCPs

The analysis yielded seven overarching themes, each reflecting practical strategies and philosophical orientations toward risk mitigation.

Monitoring and Inspection

The most recurrent theme was the emphasis on close and frequent monitoring throughout the project lifecycle. Developers consistently highlighted that proactive oversight is essential to detect and address emerging risks before they escalate. This includes both internal supervision and third-party inspections. One respondent noted:

“By ensuring close monitoring and periodic inspections to pick on any potential risks.”

Another added:

“The financier should monitor the project on a monthly schedule to ensure quality and avoid ghost projects.”

This theme resonates with project and risk governance literature, which identifies monitoring as a critical control mechanism linked to improved cost control, schedule adherence, and quality assurance. It also reflects the positivist paradigm underpinning this study (Bryman, 2012), where risks are treated as observable phenomena that can be systematically tracked and corrected.

Planning and Budgeting (Including Contingency Sums)

Robust planning and financial preparedness were cited as foundational to risk mitigation. Respondents emphasized the need for accurate feasibility studies, realistic timelines, and the inclusion of contingency reserves to absorb unforeseen shocks.

As one developer stated:

“By setting aside a contingency sum to take care of unexpected costs.”

Another reinforced this by noting:

“Proper understanding of the project during design stage will contribute to creating a budget with low risk of overruns.”

This theme emphasizes statistical planning and project management scholarship that views contingency reserves as essential buffers against uncertainty. The responses suggest that developers perceive risk management as inseparable from financial prudence. This theme reflects the importance of front-end planning in reducing exposure to cost escalations and scope variations.

Insurance and Financial Risk Management

Developers advocated for the use of financial instruments to stabilize exposure to market and operational risks. These included construction insurance, title insurance, and interest rate hedging. One respondent recommended:

“Provide insurance covers for the mortgages and negotiate for a fixed mortgage lending rate to protect the consumer from inflation.”

Another summarized a multi-pronged approach:

“Risks can be reduced through proper budgeting, hiring reputable contractors, conducting legal checks, obtaining insurance, ensuring quality supervision, using phased loan disbursement, maintaining a contingency fund, and negotiating fixed-price contracts.”

This theme reflects financial risk management literature, where hedging and insurance are recognized as effective tools for mitigating systemic risks. It also highlights the intersection between construction risk and broader macroeconomic dynamics. It underscores the role of financial engineering in safeguarding project viability.

Due Diligence and Contractor Selection

Thorough vetting of contractors and consultants emerged as a critical risk mitigation strategy. Developers stressed the need to assess financial stability, technical capacity, and past performance. One respondent advised:

“Implement rigorous due diligence on the builder’s financial stability, track record, and project management capabilities.”

Another added:

“Work with experienced developers and project managers who understand the complexities of mortgage-financed projects.”

This theme aligns with procurement literature, which emphasizes contractor prequalification as a safeguard against performance risks. It aligns with global best practices in procurement and contractor risk profiling. It also reflects the realist ontology adopted in this study, where contractors are treated as external entities exerting measurable influence on project outcomes.

Regulatory Compliance and Legal Safeguards

Respondents highlighted the importance of adhering to legal and regulatory frameworks, including obtaining permits, conducting environmental assessments, and ensuring contract clarity. One developer stated:

“Secure all necessary permits before construction starts to avoid costly work stoppages or fines.”

Another emphasized:

“Through legal and professional guideline adherence, risks can be minimized.”

This theme demonstrates how regulatory compliance is both a statistically significant risk factor and a practical priority for developers. It underscores the institutional dimension of risk, where non-compliance can lead to litigation, penalties, or reputational damage. It resonates with the assertion that ontological assumptions about institutions shape epistemological approaches to risk.

Government and Macroeconomic Environment

Several developers pointed to external risks stemming from interest rate volatility, inflation, and policy uncertainty. They called for supportive government interventions and stable macroeconomic conditions. One respondent noted:

“Government intervention in stabilizing the interest rates is key to protecting both developers and consumers.”

Another added:

“Stable interest rates, improved access to mortgages, and financing models that address developer concerns are essential.”

This theme highlights the systemic risks beyond project-level control, requiring supportive government policies and stable economic conditions. It reflects the teleological dimension of risk management, where the ultimate purpose extends beyond project delivery to socio-economic stability. It highlights the interplay between micro-level project risks and macro-level policy environments. It also highlights the need for enabling environments that reduce systemic risk.

Professional Oversight and Expertise

The final theme emphasized the role of qualified professionals in project execution. Developers advocated for the involvement of experienced architects, engineers, and project managers to ensure technical rigor and accountability. One respondent stated:

“Professional oversight is critical—engage experienced teams who can monitor progress and ensure adherence to the plan.”

Another added:

“Through involvement of experts in each relevant field, risks can be anticipated and mitigated early.”

This theme demonstrates strong convergence between statistical evidence and practitioner emphasis on technical expertise and professional oversight. It reflects the axiology of value creation, where professional expertise is seen as a moral and practical imperative in safeguarding project outcomes.

Summary of the Thematic Analysis

The thematic analysis reveals that developers perceive risk mitigation as a multi-layered process involving operational vigilance, financial safeguards, strategic planning, institutional compliance, and stakeholder collaboration. The recurring emphasis on monitoring and planning suggests that developers view risk management not as a reactive measure but as a continuous, integrated process embedded across the project lifecycle.

A Thematic Framework for Mitigating Risks in MFCPs

This framework (Figure 7) synthesizes the thematic insights from developers into a structured model for risk management tailored to Kenya's mortgage-financed construction projects (MFCPs). It integrates six primary risk categories with seven mitigation pillars, culminating in enhanced project resilience and sustainability.

Risk Categories in Kenya's MFCPs

Mortgage-financed construction projects (MFCPs) in Kenya are exposed to a diverse array of risks that span operational, financial, regulatory, and environmental dimensions. These risks, if unmanaged, compromise project performance and undermine the objectives of the Affordable Housing Programme. Six dominant categories of risk have been identified through empirical and thematic analysis: Construction risks include contractor inexperience, poor workmanship, material cost volatility, and project delays. Inadequate technical capacity and weak supervision often result in defects, rework, and extended timelines (Love et al., 2013). The volatility of construction material prices, driven by inflation and supply chain disruptions, further exacerbates budget overruns (Sagini et al., 2023). Financial risks include high borrowing costs, delayed financing approvals, and poor cash flow management are prevalent. Kenya's mortgage interest rates remain relatively high, increasing the cost of capital and reducing project affordability (Central Bank of Kenya, 2023). Limited access to long-term financing and stringent collateral requirements constrain developer liquidity, leading to stalled projects (World Bank, 2020). Planning risks stem from delays in obtaining approvals from regulatory bodies such as NEMA, county governments, and the National Construction Authority (NCA). Bureaucratic inefficiencies and fragmented permitting processes hinder project initiation and continuity (Kawera & Datche, 2023). Environmental compliance challenges also contribute to planning delays. Legal and Regulatory Risks include unclear zoning laws, land disputes, and litigation risks pose significant threats. Developers often face delays due to contested land ownership or changing regulatory requirements, which can result in fines, work stoppages, or reputational damage. Market Risks include Fluctuations in demand, interest rates, and material prices affect project viability. Oversupply in certain urban zones and economic downturns can reduce property absorption rates, impacting revenue and loan repayment capacity (PMI, 2021). Lastly, Environmental Risks include climate variability, extreme weather events, and natural hazards disrupt construction schedules and increase costs. Kenya's rainy seasons and growing climate unpredictability pose logistical and structural challenges, especially for large-scale developments (Mwangi, 2025). These risk categories are interrelated and often compound one another. For example, planning delays can trigger financial strain, while construction defects may lead to legal disputes. A holistic understanding of these risks is essential for designing effective mitigation strategies that enhance MFCP resilience and sustainability.

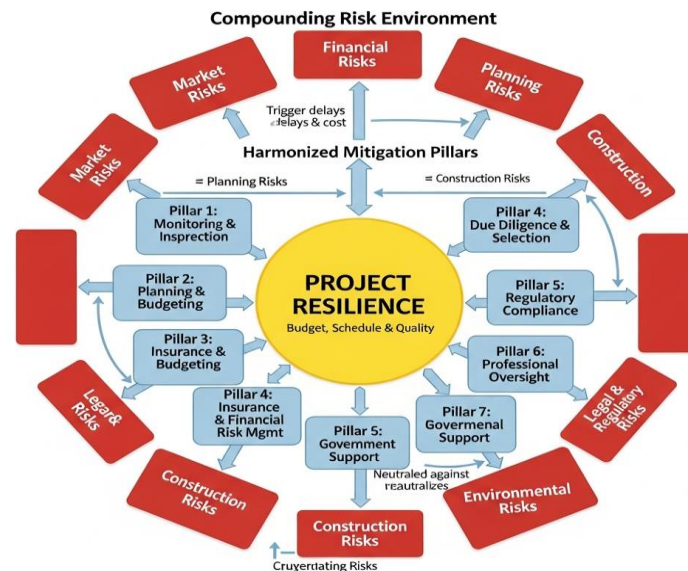


Figure 7: A Thematic Framework for Mitigating Risks Associated with MFPCs

Mitigation Pillars

To counter the identified risks, seven thematic pillars of mitigation strategies are proposed, forming an integrated framework that strengthens project resilience and sustainability.

- Pillar 1-Monitoring and Inspection: Continuous oversight throughout the project lifecycle ensures early detection of risks and adherence to quality standards. Regular audits by developers and financiers improve cost control and schedule reliability.
- Pillar 2-Planning and Budgeting (Including Contingency Sums): Robust front-end planning, realistic timelines, and contingency reserves reduce exposure to cost overruns and scope creep. Effective budgeting is a cornerstone of risk management in construction projects.
- Pillar 3-Insurance and Financial Risk Management: Insurance instruments (construction insurance, title insurance) and financial hedging (fixed-rate mortgages, phased disbursement) stabilize exposure to systemic risks, protecting both developers and consumers.
- Pillar 4-Due Diligence and Contractor Selection: Rigorous vetting of contractors and consultants, assessing technical capacity, financial stability, and track record, reduces risks of defects, delays, and poor workmanship.
- Pillar 5-Regulatory Compliance and Legal Safeguards: Adherence to permitting, zoning, and environmental regulations prevents costly stoppages and litigation. Clear contractual frameworks strengthen institutional risk governance.
- Pillar 6-Government and Macroeconomic Support: Stable interest rates, supportive housing policies, and predictable macroeconomic conditions reduce systemic risks. Government intervention is critical for affordability and sector stability.

- **Pillar 7-Professional Oversight and Expertise:** Engaging qualified architects, engineers, and project managers ensures technical rigor and accountability, enhancing project governance and reducing operational risks.

Together, these pillars form a systems framework where risks are proactively managed rather than reactively addressed. By embedding monitoring, financial safeguards, regulatory compliance, and professional oversight across the project lifecycle, MFCPs can achieve improved budget adherence, schedule reliability, quality assurance, and financial stability. This harmonized framework positions risk management as a continuous, integrated process essential for advancing Kenya's Affordable Housing Programme and broader urban development goals.

Conclusions and Recommendations

Conclusions

This study examined the risks associated with mortgage-financed construction projects (MFCPs) in Kenya and synthesized practical mitigation strategies into a thematic framework. The findings reveal that MFCPs face a complex risk environment shaped by construction inefficiencies, financial volatility, planning delays, regulatory bottlenecks, market fluctuations, and environmental uncertainties. These risks are not only direct threats to project performance but also interact in ways that amplify vulnerabilities across the project lifecycle.

Through thematic analysis of developer insights, seven mitigation pillars were identified: monitoring and inspection, planning and budgeting (including contingency sums), insurance and financial risk management, due diligence and contractor selection, regulatory compliance and legal safeguards, government and macroeconomic support, and professional oversight and expertise. These strategies reflect a shift from reactive risk management to proactive, integrated governance.

The harmonized framework developed in this study positions risk mitigation as a continuous process embedded in every phase of MFCP execution. It emphasizes the need for collaboration among developers, financiers, regulators, and policymakers to ensure that housing projects are delivered successfully. By adopting this framework, stakeholders can improve budget adherence, schedule reliability, quality assurance, and financial stability, ultimately enhancing the credibility and viability of mortgage-financed housing delivery in Kenya.

This study contributes to both academic discourse and practical policy by bridging empirical evidence with practitioner experience. It offers a replicable model for risk-informed project management that can be adapted to other emerging economies facing similar housing and financing challenges.

Recommendations

Based on the study's findings and the harmonized risk mitigation framework, the following recommendations are proposed to enhance the resilience and performance of mortgage-financed construction projects (MFCPs) in Kenya:

For Developers

- Institutionalize monitoring protocols: establish structured monitoring and inspection schedules throughout the project lifecycle to detect risks early and ensure quality control.
- Strengthen contingency-based budgeting: incorporate contingency reserves during planning to absorb unforeseen costs and reduce financial strain.
- Vet contractors rigorously: implement due diligence procedures to assess contractor experience, financial stability, and technical capacity before engagement.
- Engage qualified professionals: ensure that architects, engineers, and project managers with proven expertise are involved from design to completion

For Financiers

- Design risk-responsive mortgage products: offer fixed-rate mortgage options and phased disbursement models to reduce exposure to interest rate volatility and financing delays.
- Mandate insurance coverage: require developers to obtain construction and title insurance to safeguard against operational and legal risks.
- Support mid-sized projects: develop tailored financing instruments for projects valued between KShs. 21–100 million to address the “missing middle” in Kenya’s housing market.

For Regulators and Policymakers

- Streamline approval processes: digitize and simplify permitting procedures to reduce planning delays and improve project initiation timelines.
- Enforce compliance and transparency: strengthen oversight of environmental and legal standards while ensuring clarity in zoning and land use regulations.
- Stabilize the macroeconomic environment: implement policies that promote interest rate stability and incentivize affordable housing development through public-private partnerships.

4.2.4 Cross-Sectoral Recommendation

- Adopt the harmonized risk mitigation framework: stakeholders should integrate the seven thematic pillars into project governance structures, ensuring that risk management is proactive, continuous, and embedded across all phases of MFCP execution.

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