
AN EVALUATION OF PROJECT RISK MANAGEMENT EFFECTS ON PERFORMANCE OF FUNDED PROJECTS IN KENYA

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Accepted: March 22, 2026

ABSTRACT

Funded projects play a critical role in driving socio-economic development, yet many experience challenges related to planning, funding, risk management, and managerial practices that undermine their performance. The examination of the impact of project management practices on the performance of funded projects in Kenya, with a focus on project planning, project funding, and project risk management. Guided by the Resource-Based View (RBV), Contingency Theory, and the Project Management Body of Knowledge (PMBOK) framework was done. The focus was on how project risk management affect performance of funded projects in Kenya. Descriptive research design was applied, targeting project managers, donors, and key stakeholders involved in government- and donor-funded initiatives across Kenya. The target population consisted of funded projects implemented between 2018 and 2024, with a sample of SGR project determined through census to ensure representation across sectors such as engineers, chinese maintainance department.environmental department,architectures,risk mitigation department and finance departments as well as communications and public affair. Data was collected through structured and semi-structured questionnaires aligned to variables. Data was analzed both descriptive statistics and inferential techniques to determine the effect of each independent variable on project performance. The discoveries were that the project scope was said to be flexible enough and accommodated the changes as the project progressed. Various types of risks were experienced during planning and implementation phases of the SGR project which included included financial risks of delayed disbursements, phased implementations which prolonged the implementation process, compensation frameworks, heavy rains, technical risks and health hazards.Project management tools and methodologies substantially enhances the success of project implementation.It was confirmed that utilizing a project management methodology may mitigate the expenditure of time and resources on inconsequential tasks.Risk management framework was found crucial. Besides these factors ,there are many more factors that also affect the performance of related projects hence further studies should be conducted.

Key Words: Risk Management, Performance and Funded Projects

CITATION: Isavwa, I., & Njoroge, J. (2026). An evaluation of project risk management effects on performance of funded projects in kenya. *Reviewed Journal International of Social Science & Humanities*, 7 (1), 162 – 177.

INTRODUCTION

Funded projects are critical in driving socio-economic and infrastructural development, though performance outcomes vary. At the global level, challenges such as cost overruns, weak stakeholder collaboration, and limited adaptability persist, often worsened by inadequate monitoring and evaluation systems (Oyier & Tumuti, 2025). However, structured project management practices—such as resource scheduling, risk assessment, and effective communication—enhance cost-effectiveness, timeliness, and satisfaction. Donor conditions and governance structures also influence outcomes, with inclusive stakeholder participation and transparent financing improving project sustainability (Kimotho, 2023).

Regionally, in Africa, political instability, weak institutions, and infrastructure gaps hinder project performance. Yet, risk management innovations, like those introduced by the African Trade & Investment Development Insurance (ATIDI), mitigate uncertainties and strengthen investor confidence (ATIDI, 2023). Regional integration efforts by the African Union and economic blocs further enhance accountability, reduce duplication, and improve impact, especially when projects emphasize community participation and cross-border collaboration.

Locally in Kenya, project performance reflects both progress and persistent gaps. Improvements in fiscal discipline and strategic resource allocation provide a foundation for success (PEFA, 2023). Still, delayed disbursements, weak risk management, and limited stakeholder engagement contribute to inefficiencies such as stalled or unsustainable projects (Oyier & Tumuti, 2025). Devolution has boosted community participation and accountability, but effective project management practices—including risk management, leadership support, and capacity building—remain essential for achieving sustainable outcomes (Kimotho, 2023).

Project performance is quantified by the extent to which predetermined targets are met and the project fulfills its intended objectives within specified time, budget, and quality standards (Kerzner, 2013). Project performance reflects how well a project achieves its objectives within the prescribed parameters of time, cost, quality, and scope (Njogu, 2016; Kululanga & Kuotcha, 2010). Successful performance depends on effective project management practices, including systematic planning, stakeholder engagement, resource allocation, and communication, which help optimize outcomes and mitigate risks (Serrador & Turner, 2014; Bradley, 2012; Turner, 2016).

Risk management is another essential practice, involving the identification, assessment, prioritization, and mitigation of risks that could affect project execution (Haniff & Galloway, 2022; Eliwa et al., 2018). Effective project risk management enhances decision-making, resource allocation, and contingency planning, increasing the likelihood of project success (Alsadi & Norhayatizakuan, 2021). Key risk management activities include risk identification, assessment, monitoring, and control throughout the project lifecycle.

The Standard Gauge Railway (SGR) Project is a premier infrastructure endeavor in Kenya designed to modernize the national railway system and improve regional connections. The project links Mombasa to Nairobi in its first phase, with subsequent phases extending to Naivasha, Kisumu, and eventually to the Ugandan border (World Bank, 2022). The SGR project is part of Kenya's Vision 2030 development agenda, targeting improved trade logistics, reduced travel time, and regional integration through the East African Railway Master Plan.

The project has been funded through a combination of government resources and external financing, notably loans from the China Exim Bank and other international partners. These funds have enabled large-scale construction, procurement of modern locomotives, and implementation of advanced railway signaling and safety systems. Proper management of these funds is crucial, as delays or misallocation could significantly affect project outcomes (Muriuki, 2021).

Project performance has been mixed. On the one hand, the SGR has drastically reduced travel time between Mombasa and Nairobi from over 12 hours to 4–5 hours and improved freight logistics (Oyier & Tumuti,

2025). On the other hand, challenges such as cost overruns, debt servicing concerns, and delays in subsequent phases have raised questions about overall efficiency and sustainability (Kimotho, 2023).

Project management practices have played a critical role in SGR's outcomes. Effective project planning, structured funding allocation, stakeholder engagement, and risk management strategies have been instrumental in achieving milestones. However, lapses in risk assessment, unforeseen environmental challenges, and social issues (like land compensation disputes) have occasionally slowed progress (Kirima et al., 2024).

In summary, the SGR project demonstrates the complex interplay between funding, project management practices, and performance outcomes. While the project has delivered significant benefits in transport efficiency and economic growth, its long-term sustainability depends on continued adherence to rigorous project management practices, timely funding, and proactive risk mitigation strategies.

Statement of Problem

The effectiveness of government-funded projects is crucial for national development. In Kenya, such projects often face delays, budget overruns, and poor workmanship, leading to wasted resources and reduced service delivery. The Standard Gauge Railway (SGR) project, a key infrastructure initiative connecting Nairobi and Mombasa, involved over USD 3.6 billion in its first phase (World Bank, 2021) but has faced cost overruns, timeline delays, and stakeholder conflicts (Kenya National Audit Office, 2019).

Revenue from the SGR has been below expectations, with earnings rising only marginally from KES 2.7 billion (~USD 24 million) in 2017 to KES 3.5 billion (~USD 31 million) in 2022 (Kenya Railways Corporation, 2023). This underperformance underscores the need for effective project management to ensure timely, cost-efficient, and quality delivery (PMI, 2021). Traditional management approaches in the SGR, characterized by rigid planning and limited stakeholder engagement; have struggled to address its complexity (Degefa & Bekele, 2021).

There is limited research on the effects of project management practices on the success of externally funded projects in Kenya, particularly regarding cost control, schedule adherence, quality, and revenue generation (Mwangi & Odongo, 2022). Understanding this relationship is essential for improving management frameworks, optimizing resource use, and enhancing project outcomes. This study therefore investigated the effect of project management practices on the performance of funded projects in Kenya, using the SGR as a case study.

LITERATURE REVIEW

Performance of Funded Projects

Flyvbjerg (2020) employs a comparative case study approach, analyzing numerous megaprojects worldwide to identify patterns of cost overruns, schedule delays, and demand shortfalls. Data were gathered from project reports, financial statements, and interviews with project stakeholders. The study reveals that optimism bias, strategic misrepresentation, and political pressures are major contributors to underperformance in megaprojects. Cost overruns and time delays are prevalent, and the risks associated with such projects are often underestimated during planning. Effective project performance requires robust planning, rigorous risk assessment, and institutional accountability. Policymakers and project managers must adopt transparent governance structures and strategic foresight to mitigate risks and improve the sustainability of large-scale infrastructure projects globally.

Marlow, Lacoste & Thiry (2021) utilizes a qualitative comparative analysis of public infrastructure megaprojects in Europe, Asia, and Africa. Data were collected through project documentation review, stakeholder interviews, and performance metrics evaluation. The research highlights that projects with adaptive governance, proactive stakeholder engagement, and strategic planning are more likely to achieve their

objectives in terms of cost, schedule, and quality. Ineffective decision-making and weak institutional frameworks correlate with frequent delays and cost overruns. Integrating strategic decision-making frameworks enhances project performance and socio-economic outcomes. The study underscores that effective governance and stakeholder involvement are critical for successful implementation of large-scale infrastructure projects, offering lessons for developing countries like Kenya.

Olander and Landin (2021) conducted a systematic literature review of global infrastructure projects, analyzing case studies from transportation, energy, and urban development sectors. The study focused on socio-economic outcomes, stakeholder engagement, and environmental integration. Projects with strong community engagement, environmental planning, and social integration demonstrate higher socio-economic benefits. Conversely, projects lacking these considerations often face public opposition, social inequities, and underutilization. Socio-economic performance is a critical dimension of overall project success. Incorporating stakeholder input and environmental sustainability into project design enhances long-term benefits and ensures infrastructure projects generate positive societal impact.

Amoako-Tuffour and Boamah (2022) employ a comparative case study approach, analyzing infrastructure projects across Sub-Saharan Africa to identify patterns of cost overruns, schedule delays, and implementation challenges. Data was gathered from project reports, financial statements, and interviews with key stakeholders. The study reveals that weak institutional capacity, inadequate feasibility studies, and political interference are major contributors to underperformance in African infrastructure projects. Cost overruns and delays are prevalent, and the risks associated with large-scale projects are often underestimated during planning. Effective project performance requires strengthened governance, enhanced planning, and institutional accountability to improve the sustainability of regional infrastructure initiatives.

Okoro et al. (2021) utilizes a qualitative analysis of the Addis Ababa–Djibouti Railway and other major African transport projects. Data were collected through project documentation review, stakeholder interviews, and financial performance evaluation. The research highlights that projects with robust planning, adaptive governance, and proactive stakeholder engagement are more likely to achieve objectives related to cost, schedule, and quality. Ineffective decision-making and currency exchange risks correlate with frequent delays and budget overruns. Integrating strategic management frameworks enhances both operational performance and socio-economic outcomes. The research highlights the significance of governance, risk management, and stakeholder involvement in regional infrastructure projects.

Ncube and Malaba (2020) conducted a systematic review of African infrastructure projects, analyzing case studies from transport, energy, and urban development sectors. The study focused on socio-economic outcomes, community engagement, and environmental integration. Projects that incorporate strong stakeholder engagement, environmental planning, and social considerations demonstrate higher socio-economic benefits. Conversely, projects lacking these measures often face public opposition, social inequities, and underutilization. Socio-economic performance is a critical component of overall project success. Incorporating community input and sustainability measures into project design enhances long-term benefits and ensures regional infrastructure projects generate positive societal impact.

Kariuki (2020) employs a case study approach, analyzing the Standard Gauge Railway (SGR) project in Kenya to assess patterns of cost overruns, schedule delays, and operational inefficiencies. Data were gathered from project financial reports, government documents, and stakeholder interviews. The study reveals that funding constraints, political interference, and weak institutional capacity are major contributors to underperformance in the SGR project. Cost overruns and schedule deviations were prevalent, and operational revenue fell short of projections during the first years of operation. Effective project performance requires enhanced planning, strong oversight, and accountability mechanisms. Policymakers and project managers must adopt transparent governance structures and strategic monitoring frameworks to mitigate risks and improve the sustainability of large-scale infrastructure projects in Kenya.

Wanyonyi (2021) utilizes a descriptive and analytical study design, reviewing major Kenyan infrastructure projects and conducting interviews with project managers. The research highlights that projects with proper planning, stakeholder involvement, and financial controls are more likely to meet objectives related to cost, schedule, and quality. Conversely, weak decision-making frameworks, inadequate risk management, and political interference correlate with frequent delays and budget overruns. Integrating strong project management practices enhances project performance and socio-economic outcomes. The study underscores that effective governance and proactive stakeholder engagement are critical for successful implementation of large-scale infrastructure projects like the SGR.

Mureithi (2021) conducted a socio-economic impact assessment of the SGR project, analyzing project reports, community surveys, and secondary data from governmental agencies. The study focused on employment generation, trade facilitation, and community impacts. Projects with strong stakeholder engagement and community consultation demonstrate higher socio-economic benefits. Conversely, projects lacking adequate social planning often face public dissatisfaction and limited local benefits. Socio-economic performance is a critical dimension of overall project success. Incorporating community input and social sustainability measures into project design enhances long-term benefits and ensures funded projects generate positive societal impact in Kenya.

Project Risk Planning and Performance of Funded Projects

In Malaysia, Ali et al (2019) focused on the influence of risk management on construction project success. The goal of the research was to ascertain the impact of risk management on the success of construction projects in Malaysian enterprises, evaluated using three principal metrics. The level of risk management practice dissemination in the selected construction project in Malaysia was also analyzed. The research employed a case study methodology, incorporating the examination of documented data and in-person interviews with important stakeholders possessing various roles and responsibilities. The participants included an executive, project managers, finance officers, contract managers, and quantity surveyors. The findings suggested that the implementation of appropriate risk management strategies enhances project performance, hence contributing to project success. However, Insufficient knowledge and inadequate interaction of risk management techniques in building projects impede a successful and consistent implementation of risk management in Malaysia.

Alsadi et al (2021) studied the Impact of risk management practices on the success of construction projects. The research employed quantitative techniques to analyze the correlation. The survey encompassed construction enterprises ranging from first to second grade in Oman. The findings demonstrated that the application of risk management significantly improves the execution of construction projects. Consequently, It is essential to engage proficient project managers with sufficient competence in risk management and its core operations.

Gichohi, Iravo, and Muchelule (2024) investigated the impact of project risk management on the success of road construction projects in Kenya, as well as the moderating influence of organizational culture on the connection between project risk management and project success in this sector. The research employed a cross-sectional research methodology and employed a positivist research paradigm. The unit of analysis was the road construction projects executed by the Kenya National Government's Road agencies, namely the KURA, KeRRA, and KeNHA, while the unit of observation consisted of management personnel engaged in the execution of these projects. The research targeted a population of 695 responders, including director generals, directors, project engineers, resident engineers, site engineers, and surveyors engaged in the execution of these projects. The total sample size for this research was estimated utilizing a formula by Krejcie and Morgan, resulting in 248 respondents. This research utilized stratified random sampling to determine the research sample. Primary data was utilized and gathered through a semi-structured questionnaire. A pilot test of the questionnaire samples was conducted with 24 respondents to assess reliability

and validity. The research indicated that project risk management has a favorable and significant correlation with the success of road construction projects in Kenya.

Mavuti, Kisingu, and Oyoo (2019) investigated the effect of project management practices on the implementation of funded projects at the KPA. The research utilized a descriptive methodology and focused on a population of 364 participants. A sample of 191 participants was chosen for data gathering. The results demonstrated that monitoring and assessment, stakeholder engagement, risk management, and project planning and design substantially affect the success of project execution. Nonetheless, these variables explained merely 48.8% of the variance in project execution, resulting in 51.2% remaining unaccounted for by the model. The regression model exhibited statistical significance, confirming the relevance of project management factors in predicting project implementation outcomes. The authors concluded that effective project management is crucial for successful project execution; yet, it is often inadequately applied.

Maghanga (2019) studied effect of the project risk management practices on the success of cement-industrial firms' projects in Nairobi County, Kenya. This research employed purposive sampling. Project achievement is influenced by project risk management methods, including risk avoidance, risk retention, risk transfer, and risk control. The correlation between the research's variables is substantial. The research concentrated on projects undertaken by cement-manufacturing companies. Obiero & Njoroge (2025) on a Risk mitigation as a way of implementing county integrated development plan in Homa Bay County, Kenya study found out that it is very difficult to implement a strategic plan if risks are not well mitigated in the implementation stages. Rahab (2018) studied the influence of project management approaches on the implementation of a mobile money transfer project. The research findings indicated a substantial connection between venture management techniques and project success. The strategies included risk management, leadership skills, stakeholder involvement, and M&E. The report advocated for firms to refine their project management strategies to augment project success.

Okinyi & Keiyoro (2019) studied the impact of M&E on the success of MPESA in Nakuru County. The research employed both probability and non-probability sampling methods to establish a sampling frame for Safaricom personnel. Stratified sampling was employed as a probability strategy to provide equitable selection opportunities for M-PESA personnel across several categories of large, medium, and small cluster groups. The researcher employed a sample size of 63 responders from an accessible target group of 420 staff. The research's results demonstrated a favorable and significant association among M&E, risk management, project leadership abilities, stakeholder participation, and the performance of MPESA mobile money. A regression analysis indicated that monitoring exerts the greatest influence on MPESA performance, followed by project leadership abilities, then stakeholder participation, with risk management having the least impact. The research revealed that, while M&E significantly impact MPESA Money's performance, staff must be made aware of the existing processes.

Research Gaps

A review of literature on the success of funded projects in Kenya highlights gaps in theory, empirical evidence and methodology; in effect warrants the carrying out this study.

Table 1: Research Gaps

Category	Identified Gap	Bridging the Gap
Theoretical gaps	Flyvbjerg, 2020; Marlow, Lacoste & Thiry, 2021) focus on general project management and stakeholder theories and do not integrate funding efficiency, risk management, and socio-economic outcomes in a single framework.	Integrated theoretical framework combining project management theory, resource-based view, and stakeholder theory to examine how project planning, funding, risk management, and stakeholder engagement jointly influence performance of large-scale projects like the SGR.
Empirical gaps	Focuses on global megaprojects or sector-specific projects in Kenya, with limited research on multi-sector or large-scale government-funded projects like the SGR. Few studies examine the combined effect of planning, funding, risk management, and stakeholder engagement.	Provides empirical evidence specific to the SGR, analyzing multiple dimensions of project management simultaneously to assess their collective impact on performance.
Methodological gaps	Cross-sectional designs, descriptive surveys, or literature reviews (Mureithi, 2021; Ncube & Malaba, 2020), with limited triangulation and minimal use of longitudinal or mixed-method approaches.	Employs a mixed-methods approach, combining quantitative data from financial and operational reports with qualitative interviews. Where possible, longitudinal data from project phases included to capture changes in performance over time.

Theoretical Literature Review

Risk Management Theory

The theory was formalized by James Lam in 2003, initially emerging from financial risk management but later applied to operational and project contexts. The theory emphasizes systematic identification, assessment, mitigation, and monitoring of risks to optimize outcomes. Lam (2003) argued that risk management is essential for anticipating uncertainties, preventing losses, and ensuring that projects meet objectives on time and within budget.

Over time, risk management theory has evolved to include probabilistic modeling, scenario planning, and structured governance approaches. Organizations now adopt frameworks such as ISO 31000 and COSO ERM to formalize risk assessment processes and integrate risk management into decision-making (Frigo & Anderson, 2011). This evolution reflects an increased understanding that risk management is not merely reactive but also a strategic tool for proactive planning and resilience.

Critiques of risk management theory highlight that organizations often emphasize documentation over practical mitigation, leading to a gap between theory and practice (Hillson, 2009). Some argue that excessive focus on risk frameworks can create bureaucracy and slow decision-making, especially in dynamic project environments. Despite these criticisms, the benefits of systematic risk identification and mitigation are widely acknowledged.

This theory is directly applicable to project risk management as a variable. Implementing structured risk assessment and extenuation strategies allows project managers to anticipate possible challenges, minimize delays and cost overruns, and ensure project objectives are achieved. Effective risk management strengthens project performance by reducing uncertainty and enhancing decision-making capabilities (Lam, 2003; Hillson, 2009).

METHODOLOGY

Research Design

Descriptive research design (Bryman & Bell, 2018) was applied. It involved analyzing samples from a populace to ascertain the occurrence, distribution, and connections of sociological and psychological elements within large populations (Kerlinger & Lee, 2000). Parameters of a phenomenon were selected within a specific timeframe to accurately depict population characteristics regarding the study's "what, where, how, and when," thus justifying the use of this approach (Cooper & Schindler, 2003). It allows for the identification of interrelationships among study variables, permitting the simultaneous collection and comparison of multiple variables. A comprehensive analysis of variables and their correlation to a phenomenon will be conducted. In a nutshell, the researcher will look in-depth at adherence to project management practices as determinants of project performance.

Target Population

The target population were practitioners who were crucial to SGR project who included engineers, Chinese maintenance department, environmental environment, architectures, risk mitigation and finance departments as well as communications and public affair was crucial in assessing how project management practices influenced the success of the project.

Sampling Frame

This is a comprehensive enumeration of all elements or units within the target populace from which a sample is extracted (Creswell & Creswell, 2018). It serves as a conduit between the target population and the sample by guaranteeing that each individual or unit within the populace possesses a known and non-zero probability of selection (Saunders, Lewis, & Thornhill, 2019). A well-constructed sampling frame minimizes bias and enhances the representativeness of the sample, thereby improving the reliability and validity of research findings (Kothari, 2014).

The sampling frame consisted of professionals directly involved in the Standard Gauge Railway project from Mombasa to Nairobi. The justification for selecting this frame is that these categories of stakeholders have first-hand involvement in project planning, funding, risk management, and implementation, which are central to evaluating project management practices and their influence on project success.

Sample Size

A sample is a circumscribed subset derived from a reachable population (Mugenda & Mugenda, 2003). Sampling is the methodology employed by a researcher to collect individuals, locations, or objects for analysis (Kombo & Tromp, 2006). A sample size must be sufficiently large to accurately represent the entire populace (Kothari, 2012). Creswell (2014) emphasizes that the sample size selected by the researcher must provide sufficient information about the population and be amenable to analysis. To achieve favorable results, a sample must comprise at least 30 elements (Kombo and Tromp 2006). This study will employ census sample study where all the target population will be studied.

Sampling Techniques

Sampling techniques are procedures used to select a representative subset of a population, broadly categorized into probability and non-probability methods (Creswell & Creswell, 2018; Saunders, et al 2019). This study employed census sample where all members were each given an equal chance of inclusion, thereby improving the reliability and credibility of the findings (Kothari, 2014).

Data Collection Instruments

These are tools designed to collect data regarding the specific thematic study objectives. Structured questionnaires will serve as the exclusive data gathering device for this project. A structured feedback form is

a standardized tool designed with pre-determined questions and response options, which ensures uniformity in data collection and facilitates comparability across respondents (Creswell & Creswell, 2018). The choice of this instrument is appropriate given the relatively large and diverse target population, which includes contractors, subcontractors, engineers, architects, and designers involved in national government-funded projects. Structured questionnaires are efficient in collecting quantifiable data, reduce interviewer bias, and allow for statistical analysis, making them suitable for examining the relationship between project management practices—project planning, project funding, and risk management—and project performance (Saunders, Lewis, & Thornhill, 2019). The instrument will comprise closed-ended and Likert-scale items to systematically collect respondents' viewpoints.

Data Collection Procedures

Structured and semi structured questionnaires were the sole data collection instrument. Before commencement, the researcher will obtain an official release letter from Kenyatta University authorizing the fieldwork, as well as a research permit from the NACOSTI. These approvals were presented to Kenya Railways and relevant authorities in Nairobi Region to secure access to professionals working on national government-funded projects. Once permission was granted, the feedback form was distributed to the sampled responders through both physical drop-and-pick-later methods and electronic mailing. Respondents were assured of confidentiality and anonymity to encourage honest participation. To ensure clarity and validity of the tool, a pilot test was done on a small proportion of the target population before the main data collection. The researcher allowed a two-week response window, during which reminders were sent to non-respondents to maximize return rates. All completed questionnaires were collected, coded, and prepared for analysis.

Pilot Test Study

The piloting of research tools involved 14 responders from Metre Gauge Railway, as Kothari (2005) stipulates that the pilot sample should represent 10% of the study sample (10% of 140). The piloting of research instruments were conducted to validate their efficacy and to identify any challenges that may arise during the real study. The results was utilized to assess the respondents' comprehension of the questions, identify any ambiguities, and establish the veracity and accuracy of the tools. The participants in the pilot phase were excluded from the real data collection and final report to prevent bias.

Validity

To assess validity, items underwent analysis for content validity, wherein the researcher, assisted by specialists in construction management, to evaluate each item and the corresponding responses to determine if they yield the necessary information. Inadequate test items for generating the necessary information will be eliminated, and alternative items that are suitable for this purpose will be proposed. This aligns with Creswell's (2014) argument that researchers assess content validity by consulting a panel of experts to determine the correctness of the questions. Creswell (2014) defines validity as the extent to which an individual's scores from an instrument are coherent, significant, and allow the researcher to derive sound conclusions from the investigated sample to the broader population.

Content validity was chosen because it best ensures the structured questionnaire adequately represents the constructs of project management practices and project success in national government-funded projects. It emphasizes the relevance and coverage of items across all study variables, such as planning, funding, risk management, and performance (Taherdoost, 2016). Since the questionnaire is the sole instrument, expert review in construction management helps confirm clarity and appropriateness, reducing measurement errors and strengthening credibility (Creswell, 2014). This makes content validity suitable as it ensures the tool measures what it intends, producing meaningful and generalizable results.

Reliability

The reliability pertains to the stability and uniformity of a measurement tool in yielding identical results under comparable settings (Creswell & Creswell, 2018). Reliability of the structured questionnaire utilized

Cronbach's Alpha coefficient, which evaluates the internal consistency of questions within each construct. A Cronbach's Alpha value of 0.7 or higher is deemed acceptable, signifying that the items are adequately associated and assess the same fundamental notion (Tavakol & Dennick, 2011). Establishing reliability was crucial because it ensures that the instrument produces dependable results, free from random errors, thereby strengthening the credibility and replicability of the findings.

Data Processing, Analysis and Interpretation Procedures

After data collection, the questionnaires were first checked for completeness, consistency, and accuracy before coding and entry into the SPSS version 28 for analysis. Data processing will involve editing, coding, and cleaning to ensure quality and minimize errors. Descriptive statistics were employed to summarize demographic information and the distribution of responses across variables. The unit of observation were professionals involved in the implementation of the SGR project. Inferential statistics, including correlation and regression analysis, tested the relationship between project management practices and performance of national government-funded projects.. The regression model adopted will be of the form:

$$Y = \beta_0 + \beta_1 X_1 + \epsilon$$

Whereby: Y = Project Performance
 β_0 = Constant
 X_1 = Project Risk Management
 ϵ = Error term

FINDINGS AND DISCUSSION

Response Rate

The respondents were professionals directly involved in these projects, such engineers, maintenance department (chinese), environmental department, risk mitigation, finance department, communication and public affairs department out of 35 who were sampled respondents as pointed in table 2.

Table 2: Response Rate

Responses	Count	Percent
Actual responses	35	92.2
None response	3	7.8
Total target responses	38	100.00

Source: Researcher (2026)

Table 2 response was at 35 (92.2 %), and a none response rate of 3 (27.2%). Above 70% response rate agree with Mugenda and Mugenda (2003) guidelines. 104 questionnaires were filled and returned hence a prove of willingness for participation by the professionals

Qualitative and Descriptive Statistics

Project Risk Planning and Project Performance

Qualitative analysis highlighted various types of risks that were identified during the planning and implementation phases of the Standard Gauge Railway (SGR) project included financial risks of delayed disbursements, phased implementations which prolonged the implementation process, compensation frameworks which were affected dollar rate fluctuations, heavy rains that caused flooding hence obscuring the operations, technical risks where as well as health and environmental risks as a result of construction.

The unforeseen risks that emerged during the execution of the SGR project were delayed land acquisitions due to delayed payments. There were conflicts between wildlife habitat since the SGR had to pass through

the national park but proper management ensured to minimize these conflicts. There were cases of very heavy rains that had caused flooding these made the construction to stop for some days to wait the water to subside

Table 3: Project Risk Planning Descriptive Statistics

Statements	SDA			DA		N		A		SA		Mean	Std. Dev.
	N	F	%	F	%	F	%	F	%	F	%		
Project Management Tools and Methodologies substantially enhances the success of project implementation.	35	5	14.3	5	14.3	11	31.4	13	37.1	1	2.9	3.0	1.1
The absence of formal risk management frameworks for risk identification and mitigation is the reason for project delivery fail.	35											3.6	1.3
Utilizing a project management methodology may mitigate the expenditure of time and resources on inconsequential tasks.		1	2.9	10	28.6	5	14.3	6	17.1	13	37.1		
The absence of established risk management frameworks for recognizing and reducing risks is the root cause of project delivery failure.	35	0	0.0	12	34.3	13	37.1	9	25.7	1	2.9	3.0	0.9
An absence of project risk management competencies has led to delays and failures in project execution.	35	4	11.4	0	0.0	9	25.7	8	22.9	14	40.0	3.8	1.3
	35	0	0.0	5	14.3	8	22.9	12	34.3	5	14.3	3.3	1.1
Average												3.3	1.1

Source: Researcher (2026)

Table 3 indicate that the project risk planning statements were agreed at 3.3 mean and 1.1 std. Project management tools and methodologies substantially enhances the success of project implementation as pointed by 3.0 mean and 1.1 st where those who supported the statement were 13(37.1%) and 1(2.9%) while 11(31.4%) choose not to give their opinions and those who disagreed were 5(14.3%) and 5(14.3%). The absence of formal risk management frameworks for risk identification and mitigation are some of the reason for project delivery fail by 3.6 mean and 1.3 std. Those who agreed were 6(17.1%) and 13(37.1%) while those in opposition were 1(2.9%) and 10(28.6%) and the ones who were not decisive were 5(14.3%). It was conformed to a moderate level that utilizing a project management methodology may mitigate the expenditure of time and resources on inconsequential tasks by 3.0 mean and 0.9 std as supported by 1(2.9%) and 9(25.7%) while many respondent's opinions remained neutral at 13(37.1%) while those who did not agree were 12(34.3%). The absence of established risk management frameworks for recognizing and reducing risks is the

root cause of project delivery failure as supported by 3.8 mean and 1.3 std where 14(40%) and 8(22.9%) agreed, 9(25.7%) were moderate while those who disagreed were 4(11.4%). An absence of project risk management competencies has led to delays and failures in project execution as pointed by 3.3 mean and 1.1 std. Those who supported that risk management absence resulted to failures in project execution were 5(14.3%) and 12(34.3%) and those in disagreement were 5(14.3%).

These findings aligned with Alsadi et al (2021) who studied the impact of risk management practices on the success of construction projects. The findings demonstrated that the application of risk management significantly improves the execution of construction projects. Consequently, It is essential to engage proficient project managers with sufficient competence in risk management and its core operations.

Also, Gichohi, Iravo, and Muchelule (2024) investigated the impact of project risk management on the success of road construction projects in Kenya, as well as the moderating influence of organizational culture on the connection between project risk management and project success in this sector. The research indicated that project risk management has a favorable and significant correlation with the success of road construction projects in Kenya. Also, Mavuti, Kisingu, and Oyoo (2019) who investigated the effect of project management practices on the implementation of funded projects at the KPA. The research utilized a descriptive methodology and focused on a population of 364 participants. The authors concluded that effective project management is crucial for successful project execution; yet, it is often inadequately applied.

Project Performance

Project performance qualitative data revealed that the project performance of the Standard Gauge Railway (SGR) project was very beneficial to the Kenyan economy by enabling faster movement of people across the country hence more businesses have been done in short periods as opposed to before. There has been efficiency and improved performance on the railway transport sector. The key performance indicators (KPIs) were used to evaluate the progress and success of the SGR project were freight volumes and the increasingly number of passengers who commutes through SGR which has increased on transport safety due to reduction of road accidents and congestions.

The SGR project's goals and objectives achieved within the planned time and budget to a very great extent. There were minimal significant variances between planned and actual performance.

Table 4: Project Performance Descriptive Statistics

Statements		SDA		DA		N		A		SA		Mean	Std. Dev.
	N	F	%	F	%	F	%	F	%	F	%		
Project clients are satisfied	35	0	0.0	3	8.6	6	17.1	11	31.4	6	17.1	3.2	1.3
The projects meet time objective	35	0	0.0	2	8.2	10	28.6	8	22.9	4	16.7	3.1	1.1
Projects are delivered within set budget	35	3	8.6	0	0.0	11	31.4	19	54.3	2	5.7	2.8	1.0
Project realizes its benefits	35	2	8.2	5	14.3	0	0.0	19	54.3	2	5.7	2.7	0.9
Project beneficiaries are satisfied	35	3	8.6	12	34.3	11	31.4	5	14.3	4	11.4	2.5	1.1
Average												2.9	1.1

Source: Researcher (2026)

Table 4 indicate dissatisfaction in project performance statements that were considered in this study as indicated by 2.9 mean and 1.1 std. Project clients are slightly satisfied as pointed by 3.2 mean and 1.3 std where 6(17.1%) and 11(31.4%) agreed while those 3(8.6%) disagreed. The projects meet time objective 3.1 mean and 1.1 std where those who agree were 4(16.7%) and 8(22.9%) and those who disagreed were 2(8.2%) and 10(28.6%). Projects were not delivered within set budget as indicated by 2.8 mean and 1.0 std where 35(3%) and disagreed and 11(31.4%) remained neutral and those who agreed was 2(2.8%) and 19(54.3%). Project has not realized its benefits as pointed by 2.7 mean and 0.9 std. where 2(8.2%) and 5(14.3%) disagreed while those who agreed were only 2(5.7%) and 19(54.3%). Project beneficiaries are satisfied by 2.5 mean and 1.1 std as supported by 3(8.6%) and 12(34.3%). 11 931.4%) choose to remain silent on the matter.

Inferential Analysis

Multiple linear regression was opted to examine the effects project planning, project funding and project risk management on the project performance of the Standard Gauge Railway (SGR) in Kenya.

Overall Model Summary

Multiple regression results on project planning, project funding and project risk management on the project performance of the Standard Gauge Railway (SGR) in Kenya are in table 5.

Table 5: Overall Model Summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.856a	.732	.706	.38952

a. Predictors: (Constant), PROJECTRISKMANAGEMENT, PROJECTFUNDING, PROJECTPLANNING

Source: Researcher (2025)

Table 5 above point that R-squared value is 0.732 and it indicates that 73 percent on the project performance of the Standard Gauge Railway (SGR) in Kenya was influenced by on project risk management. The remaining 27 per cent is influenced by other variables not tested in this model. The model is fit for further inferential statistics.

ANOVA

The ANOVA outputs observed the regression model fitness. Table 6 Display the outputs

Table 6: ANOVA Results

ANOVAa					
Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	12.839	3	4.280	28.208	.000b
Residual	4.703	31	.152		
Total	17.543	34			

a. Dependent Variable: PROJECTPERFORMANCE

b. Predictors: (Constant), PROJECTRISKMANAGEMENT

Source: Researcher (2025)

Table 6 point that model fitted and the data are statistically significant at the F-ratio (3,31) of 28.208. The 0.000 probability value was below the threshold adopted hence a prove that project risk management had impact on project performance of the Standard Gauge Railway (SGR) in Kenya

Coefficients

The relationship between project planning, project funding and project risk management was analyzed as well as their effect on project performance of the Standard Gauge Railway (SGR) in Kenya displayed in table 7.

Table 7: Coefficients

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.193	.482	.653	-.400	.692
	PROJECTRISKMANAGEMNENT	.286	.095	.295	2.999	.005

a. Dependent Variable: PROJECTPERFROMANCE

Source: Researcher (2025)

The outputs in Table 7 points out that when project risk management are held at zero constant, project performance would be at 1.193.

The equation from the analysis is

$$Y = 1.193 + 0.286X + \epsilon$$

Where,

Y = business performance (outcome variable)

β_0 = constant

X – project risk management (predictor construct)

ϵ – error term

Project Risk Management

The focus was to evaluate the effect of project risk management on performance of funded projects in Kenya.

Table 7 points that $\beta = 0.286$, $t=2.999$, $p=0.005$. The value 0.286 means the effect of a sole unit shift of project risk management on the Standard Gauge Railway (SGR) project performance. The t-values ($t= 2.99$, $p<0.05$) are statistically significant and substantiate the effect of project risk management on the Standard Gauge Railway (SGR) project performance in Kenya.

These discoveries align with those of Alsadi et al (2021) who studied the Impact of risk management practices on the success of construction projects. The findings demonstrated that the application of risk management significantly improves the execution of construction projects. Consequently, It is essential to engage proficient project managers with sufficient competence in risk management and its core operations. Also, Gichohi, Iravo, and Muchelule (2024) who investigated the impact of project risk management on the success of road construction projects in Kenya, as well as the moderating influence of organizational culture on the connection between project risk management and project success in this sector.

CONCLUSION AND RECOMMENDATIONS

The objective was to evaluate the effect of project risk management on performance of funded projects in Kenya.

It was discovered that various types of risks were experienced during planning and implementation phases of the Standard Gauge Railway (SGR) project which included included financial risks of delayed disbursements, phased implementations which prolonged the implementation process, compensation frameworks, heavy rains, technical risks and health hazards. Project management tools and methodologies substantially enhances

the success of project implementation. , However, absence of formal risk management frameworks for risk identification and mitigation are some of the reason for project delivery fail .It was conformed that utilizing a project management methodology may mitigate the expenditure of time and resources on inconsequential tasks. The absence of established risk management frameworks for recognizing and reducing risks is the main root cause of project delivery failure as supported An absence of project risk management competencies led to delays and failures in project execution as pointed

The project was well funded by both the chinese and the Kenya government. The funds were disbursed in varioud stages of implementation to purchase all the required materials as well as pay the various suppliers. The funds were managed to the extend that they enabled the completion of the project. The fluctuation in the operational costs due to many factors challenged the project to some extend,however there were ways provided to curb the

The project management tools and methodologies substantially enhances the success of project implementation. The main risks that were experienced were both financial,health risks ,environmental risks as well as political risks.

For future projects to be undertaken, SGR project has proved that there should be thorough research on various areas that are directly involved with the intended project. All the stakeholders should always be involved from the initial stages upto the last stage. There should be a well structured risk management framework that will managed both forseen and unforeseeable risks.

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