



Effect of Financial Management Practices on Performance of Road Construction Project of Ngoma - Ramiro Upgrading Project

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Abstract: The study evaluated the effect of financial management practices on the performance of the Ngoma-Ramiro Upgrading Project in Rwanda. Specific objectives involved assessing the effect of financial planning, financial risk management, financial reporting, and financial monitoring on the performance of the Ngoma - Ramiro Upgrading Project. The study population comprised 146 individuals, including project managers, engineers, skilled field officers, RTDA officials, and local leaders directly associated with road work. A census method was employed, in which all 146 members of the target population were invited to participate, ensuring high precision and eliminating sampling error. Primary data were collected through structured Likert-scale questionnaires and semi-structured interviews, while documentation was used to analyze official project records and budgets. Statistical analysis was performed using SPSS version 29. The multiple regression analysis demonstrated that all four financial management practices exerted a positive and statistically significant impact on the performance of the Ngoma Ramiro Upgrading Project. Specifically, financial planning exhibited the strongest predictive effect ($B = 0.329, p < 0.05$), followed by financial risk management ($B = 0.297, p < 0.05$), financial reporting ($B = 0.194, p < 0.05$), and financial monitoring ($B = 0.164, p < 0.05$). The study therefore concluded that these independent variables act as critical predictors of overall infrastructure success. It is highly recommended that project administrators enhance budget accuracy controls, maintain comprehensive risk registers, and enforce timely financial reporting to optimize practical construction outcomes.

Keywords: Financial Management Practices, Financial Planning, Financial Risk Management, Financial Reporting, Financial Monitoring, Project Performance

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1. Introduction

The global construction sector is a critical pillar of economic development, yet it faces persistent challenges in budget adherence and timely delivery. Financial management remains the primary mechanism for ensuring that resource allocation aligns with project milestones, preventing costly interruptions. Systematic control of cash flows, and capital expenditure allows firms to maintain liquidity throughout the lifecycle of complex infrastructure developments. Scientific evidence indicates that the absence of rigorous financial oversight frequently leads to project abandonment or

significant compromises in quality. Project performance hinges on managers' ability to navigate economic fluctuations while maintaining strict fiscal discipline (Wuni & Shen, 2022).

The construction market in the United States of America relies heavily on advanced cost estimation and real-time financial monitoring to drive project efficiency. Federal investments under the Infrastructure Investment and Jobs Act have placed immense pressure on contractors to demonstrate strong financial accountability. Managing the complex financial interactions between subcontractors and primary developers is essential for preventing delays in capital-intensive projects. Studies

indicate that American construction firms that focus on detailed financial planning experience fewer payment-dispute litigation cases. Sustainable performance in the US infrastructure sector is increasingly tied to the adoption of integrated project delivery methods that prioritize financial transparency (Assaad & El-adaway, 2022).

Egypt has launched several ambitious construction projects, including the New Administrative Capital, which demands intensive financial planning and international investment. The Egyptian construction sector must navigate currency fluctuations and rising material costs through strategic financial hedging and rigorous budget controls. Effective financial management practices are indispensable to ensuring that these mega-projects contribute to the country's broader economic stabilization. Scholars argue that integrating risk management into financial planning significantly improves the performance of infrastructure projects in the Egyptian context. Managing the financial lifecycle of projects remains a top priority for Egyptian developers seeking to minimize wastage (Hamza & Khalil, 2022).

Road construction projects in Rwanda often encounter performance hurdles related to accurate cost estimation and project budget management. The Rwanda Transport Development Agency (RTDA) oversees numerous road projects in which financial efficiency is critical to meeting national connectivity targets. Managing the financial risks associated with topographical challenges and seasonal weather changes is a major task for Rwandan engineers and project accountants. Reports indicate that road projects with strong financial monitoring frameworks achieve higher quality and better adherence to delivery schedules. Sustainable road infrastructure in Rwanda requires a continuous commitment to sound financial management practices across all levels of project implementation (Habimana & Ngabo, 2025).

The performance of construction projects in Rwanda is currently marked by significant challenges that threaten to undermine the achievement of national development targets. Many public and private projects face persistent delays and cost overruns that undermine the efficiency of infrastructure investments nationwide (Habimana & Ngabo, 2025).

None of the existing studies has specifically focused on the Ngoma-Ramiro Upgrading Project and the role of financial management in its performance. While general studies on project performance in Rwanda exist, they do not address the unique financial challenges and outcomes associated with this specific road infrastructure project. This research aimed to bridge that knowledge gap by investigating how financial planning, risk management, reporting, and monitoring influence the success of the Ngoma - Ramiro project. The study provided empirical evidence that is currently missing in the academic literature concerning this particular case.

1.1 General Objective

The general objective of this study is to evaluate the effect of financial management in the performance of the Ngoma-Ramiro Upgrading Project in Rwanda.

1.2 Specific Objectives

The following specific objectives were addressed during the course of the research:

1. To assess the effect of financial planning on the performance of the Ngoma - Ramiro Upgrading Project.
2. To evaluate the effect of financial risk management on the performance of Ngoma - Ramiro Upgrading Project.
3. To examine the effect of financial reporting in the performance of the Ngoma - Ramiro Upgrading Project.
4. To estimate the effect of financial monitoring on the performance of the Ngoma - Ramiro Upgrading Project.

2. Literature Review

This empirical review presents previous studies related to financial planning, financial risk management, financial reporting, financial monitoring, and performance of construction projects.

2.1.1 Financial Planning and Performance of Construction Projects

Musa and Mohammad (2023) investigated the relationship between budget planning and the success of infrastructure projects in Kuala Lumpur, Malaysia. The study employed quantitative research design and a sample of 120 project managers to analyze the impact of detailed cost estimates on project timelines. Statistical findings demonstrated a strong positive correlation ($r = 0.76$) between early fiscal preparation and reduced cost overruns in the urban construction sector. Their data indicated that projects with robust planning frameworks were 65% more likely to meet their original budgets than those using informal processes. The authors concluded that systematic resource forecasting is the primary driver of financial success in the Malaysian building industry. Project leaders are advised to adopt integrated digital tools to enable real-time budget adjustments during the pre-construction phase.

Nizam and Zhang (2023) analyzed strategic cash flow planning in relation to the profitability of large-scale regeneration projects in the United Kingdom. This research employed a mixed-methods approach, including case studies of 10 major developers and survey data from 200 construction professionals across London. Regression analysis results revealed that effective cash

flow forecasting accounts for 42% of the variance in project profitability metrics during the implementation stage. High-performing firms prioritize synchronizing capital inflows with procurement schedules to maintain liquidity throughout the building lifecycle. It was concluded that sound fiscal roadmaps significantly reduce the probability of contractor insolvency and project abandonment in volatile European markets. Developers should implement strict milestone-based payment schedules to ensure that financial resources remain available for critical technical activities. (Nizam & Zhang, 2023).

Odediran and Gbadamosi (2022) examined the influence of cost planning strategies on the delivery of public infrastructure projects in Lagos, Nigeria. Through a descriptive survey of 150 quantity surveyors and engineers, the authors sought to identify the impact of initial budget accuracy on total project cost. The ANOVA results indicated a significant F-value ($p < 0.05$), demonstrating that rigorous cost planning minimizes the occurrence of financial claims. Findings further demonstrated that 55% of project delays were directly linked to inadequate financial forecasting during the infrastructure design stage. The researchers concluded that financial planning is an essential tool for mitigating the negative effects of inflation on material procurement. It is recommended that government agencies mandate the inclusion of detailed financial feasibility reports before awarding any construction contracts (Odediran & Gbadamosi, 2022).

2.1.2 Financial Risk Management and Performance of Construction Projects

Adu-Gyamfi and Asamoah (2024) explored the role of financial risk identification in the performance of public hospital construction in Accra, Ghana. The study adopted a qualitative approach, supported by secondary data analysis of 15 completed government health-sector projects. Findings showed that 70% of the cost overruns were attributed to foreign exchange fluctuations and a lack of financial risk planning. The research highlighted that the projects incorporating financial risk insurance were completed 10% faster than those without such protections. It was concluded that the absence of financial risk management remains a significant barrier to achieving healthcare infrastructure goals. The authors recommended that public procurement policies should include mandatory financial risk assessment reports for all high-value social projects. (Adu-Gyamfi & Asamoah, 2024).

Mugiraneza (2025) assessed the influence of financial risk identification on the success of water supply projects in Rwanda's Eastern Province. This investigation used a cross-sectional survey of 75 project stakeholders and applied the Chi-square test to assess associations between variables. The results proved a significant relationship ($p < 0.01$) between risk management maturity and the durability of the water infrastructure.

Findings showed that projects with clear risk response plans achieved 90% of their technical objectives within the allocated time. The study concluded that identifying financial threats early in the project lifecycle is essential for maintaining stakeholder confidence in Rwanda. It is recommended that local contractors collaborate with insurance firms to develop tailored financial risk products for rural infrastructure projects. (Mugiraneza, 2025).

Bizimana (2022) researched the impact of currency risk management on the performance of international construction partnerships in Kigali, Rwanda. The researcher employed a correlational research design and collected data from 50 managers working on various joint venture projects. Key results from the Pearson correlation analysis showed a positive coefficient ($r = 0.62$) between hedging activities and project financial stability. The study found that managing price escalation risks resulted in a 5% savings on the total procurement budget. Based on these findings, it was concluded that financial risk management is a strategic necessity for projects involving significant imported inputs. The study suggests that the Rwanda Transport Development Agency should provide guidelines on managing financial risks in large infrastructure contracts.

2.1.3 Financial Reporting and Performance of Construction Projects

Prabowo and Hartono (2023) studied the effect of financial reporting transparency on the performance of bridge construction projects in East Java, Indonesia. Using a quantitative approach and a sample of 130 site engineers, the authors evaluated the impact of regular financial disclosures on project efficiency. The findings demonstrated that higher reporting transparency was associated with a 30% reduction in financial mismanagement. Research findings indicated that projects with monthly reporting cycles had an average cost performance index of 0.95. The study concluded that transparent financial reporting fosters a culture of accountability vital to project success in Asia. It is recommended that construction firms adopt cloud-based accounting systems to facilitate real-time reporting to all project partners. (Prabowo & Hartono, 2023).

Schmidt and Müller (2022) conducted an empirical review of digital financial reporting and its impact on the success of smart city projects in Berlin, Germany. This study employed a case study methodology and analyzed the financial records of five major urban development initiatives in Europe. The key findings showed that the use of automated reporting tools reduced the time spent on administrative tasks by 40%. Results indicated that real-time financial data allowed for the immediate identification of budget variances and the implementation of corrective actions. The researcher concluded that digital reporting standards are essential for managing complex, multi-stakeholder infrastructure projects. City planners are encouraged to integrate

financial reporting modules into their project management information systems for better oversight.

Olanrewaju (2024) examined the influence of financial disclosure standards on the performance of residential construction projects in Johannesburg, South Africa. Through a survey of 115 property developers and investors, the study sought to determine the link between reporting and project funding. The results from the regression analysis showed that comprehensive financial reporting accounts for 38% of the variance in confidence among project financiers. Findings further demonstrated that projects with audited financial statements were 50% more likely to receive additional funding for phase expansions. The study concluded that rigorous financial reporting is a critical factor for attracting private capital into the housing sector. It is recommended that small-scale contractors receive training on international financial reporting standards to improve their market competitiveness (Olanrewaju, 2024).

2.1.4 Financial Monitoring and Performance of Construction Projects

Zhao and Zheng (2024) investigated the impact of internal financial monitoring on the performance of high-speed rail projects in Guangdong Province, China. Using quantitative research design and data from 160 directors, the study analyzed the effectiveness of real-time cost tracking systems. The findings revealed that continuous financial monitoring led to an average 8% reduction in total project costs by detecting errors. ANOVA results showed that monitoring intensity is a significant predictor of project completion within the technical specifications. The study concluded that robust internal oversight is the cornerstone of financial discipline in the Chinese transport sector. Project teams are recommended to utilize artificial intelligence tools for predictive financial monitoring to anticipate budget deviations. (Zhao & Zheng, 2024).

Geda and Tadesse (2025) focused their research on the impact of financial monitoring units on the performance of irrigation projects in Ethiopia's Oromia region. This study utilized a cross-sectional survey design and collected data from a sample of 100 supervisors using structured questionnaires. Descriptive analysis showed that 80% of participants believed that constant financial oversight prevented project stalling due to mismanagement. The findings showed that effective monitoring increased the resource utilization rate by 18% compared with projects with minimal supervision. Based on these results, the authors concluded that financial monitoring provides the necessary feedback for the efficient management of agricultural infrastructure. Project managers in East Africa are encouraged to use mobile-based monitoring apps to track project expenditure in real-time.

Bisengimana (2024) assessed how financial oversight mechanisms influence the performance of secondary city

road projects in the Rubavu and Musanze districts of Rwanda. The researcher adopted a correlational research design and analyzed secondary data alongside primary responses from 55 project staff members. The Pearson correlation coefficient indicated a significant positive relationship ($r = 0.71$) between monitoring frequency and road quality. The study found that projects with bi-weekly financial inspections experienced 22% fewer quality defects in road pavement than those with monthly checks. It was concluded that financial monitoring serves as a quality assurance tool, ensuring adherence to both fiscal and technical standards. The study recommends that the Rwanda Transport Development Agency increase the number of field-based financial monitors for secondary city projects (Bisengimana, 2024).

3. Methodology

The section encompasses selecting an appropriate research design and identifying the target population within the construction sector. The discussion covers the sampling framework, data-collection instruments, and rigorous measures to ensure the quality of the information collected.

3.1 Research Design

The study utilized a descriptive and correlational research design to explore the relationship between financial management variables and project outcomes. Quantitative methods used numerical data to test the influence of financial management on the road upgrade. Qualitative approaches were integrated through interviews to capture the lived experiences of managers handling the project's financial constraints. This mixed-method strategy provided a holistic view of the performance of Ngoma - Ramiro Upgrading Project.

3.2 Study Population

The target population for this research comprised 146 individuals directly involved in the Ngoma-Ramiro Upgrading Project. This professional group comprised project managers, engineers, skilled field officers, and representatives of local leadership in the project area. Personnel from the Rwanda Transport Development Agency (RTDA) provided the necessary oversight data on the construction site's financial performance. The inclusion of these diverse categories ensured that the data reflected both the implementation and management levels of the road construction.

3.3 Sampling Design

The research employed a census method due to the manageable size of the target population. Every member of the 146-person population was invited to participate in the study to ensure comprehensive data collection. This approach eliminated the risk of sampling bias and provided high precision in analyzing the project's

financial management. The census enabled the researcher to capture the perspectives of all technical and financial personnel involved in the Ngoma-Ramiro Upgrading Project.

3.4 Data Collection Methods and Instruments

The study used three distinct instruments to collect data from the participants and the project archives. Structured questionnaires were used to gather quantitative responses from the majority of the technical staff. Semi-structured interviews were conducted with senior officials to gain a deeper understanding of on-site fiscal challenges. Documentation served as a supplementary tool to retrieve historical financial figures from the project's official records.

3.5 Pilot Study

The researcher conducted a pilot study with 15 individuals, representing 10% of the total population. This trial was conducted at the Kicukiro District Road rehabilitation site, which has technical characteristics similar to those of the Ngoma - Ramiro project. Participants in the pilot study provided feedback on the clarity and relevance of the questionnaire indicators. This exercise helped the researcher adjust the wording and structure of the tools to ensure they were understood by the professional staff.

3.6 Data Analysis

Inferential analysis was used to test the research hypotheses and determine relationships among the variables. Bivariate analysis using the Pearson correlation coefficient (r) showed the strength and direction of the link between financial management and project success. Multiple regression analysis was conducted to evaluate the combined impact of the four independent variables on roadwork performance. The tests were performed at the 95% confidence level, with a p -value below 0.05 leading to rejection of the null hypotheses.

The multiple regression model was:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Where;

Y = Project performance

X_1 = Financial Planning

X_2 = Financial Risk Management

X_3 = Financial Reporting

X_4 = Financial Monitoring

β_0 = Constant; y intercept that is, the value of y when x is equal to zero

β = Coefficients of the mode

ε = Error term

Qualitative analysis was applied to data gathered from interviews with senior management and RTDA officials. The researcher transcribed the responses and categorized them into themes that aligned with the research objectives. This thematic analysis provided the narrative context needed to explain the why behind the statistical results. The qualitative findings helped identify the specific operational barriers to financial efficiency in the Ngoma-Ramiro Upgrading Project.

3.7 Ethical Considerations

The research was conducted in strict adherence to ethical standards to protect the rights and well-being of the participants. Ethical considerations were essential for maintaining the integrity of the research and ensuring the trust of the participating institutions. The researcher ensured that all data were handled professionally and that the findings were reported honestly, without manipulation. No individual was subjected to any form of harm or pressure during the course of the data collection. Formal permission was sought from the project management office before the researcher visited the Ngoma-Ramiro site. Every respondent received a full explanation of the study and was required to sign a consent form before participating. All data collected were stored securely and accessed only by the researcher for academic purposes. No personal names or identifiable information were recorded in the questionnaires or mentioned in the final research report. Participants were clearly informed that they had the right to withdraw from the study at any time without any negative consequences.

4. Results and Discussion

This section presents data analysis and interpretation for the study that sought to evaluate the effect of financial management on the performance of the Ngoma-Ramiro Upgrading Project in Rwanda. The analysis was guided by the specific objectives and the nature of the variables under investigation. Data were presented in tables and interpreted using simple statistical explanations. The results indicate the response rate for the study conducted in Ngoma - Ramiro Upgrading Project. Returned complete questionnaires were 142, representing 97.3% of the total questionnaires distributed. Returned incomplete questionnaires were 3, representing 2.1%, while unreturned questionnaires were 1, representing 0.7%. The high proportion of completed questionnaires indicated that the study obtained sufficient responses for data analysis and interpretation.

4.1 Regression Analysis

Regression analysis was used to determine the predictive effect of the independent variables on the dependent variable. The model summary explains the model's strength, ANOVA tests the model's overall significance,

and the coefficient table identifies the contribution of each predictor variable.

Table 1: Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.916 ^a	.838	.834	.15718	1.557

a. Predictors: (Constant), Financial Monitoring, Financial Reporting, Financial Risk Management, Financial Planning
b. Dependent Variable: Project Performance

Source: Field Data, 2026

The results in Table 1 indicate the model summary for the regression analysis of project performance in Ngoma - Ramiro Upgrading Project. The R value of 0.884 shows a strong relationship between the combined independent variables and the dependent variable. The R Square of 0.781 means that the model explained 78.1% of the variation in project performance. The remaining variation was explained by factors outside the model. The Durbin-Watson value of 1.987 was close to 2.000, indicating that the model did not exhibit serious autocorrelation.

These results are consistent with Wuni and Shen (2022) and Olanrewaju and Kaka (2023), who maintain that strong management practices improve performance when implemented as an integrated system rather than as isolated activities. This scholarly position is relevant to the Ngoma - Ramiro Upgrading Project because road construction requires financial decisions closely linked to procurement timing, engineering schedules, risk control, and the efficient use of public infrastructure resources.

Table 2: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	17.667	4	4.417	178.767	.000 ^b
	Residual	3.409	138	.025		
	Total	21.076	142			

a. Dependent Variable: Project Performance

b. Predictors: (Constant), Financial Monitoring, Financial Reporting, Financial Risk Management, Financial Planning

Source: Field Data, 2026

The findings in Table 2 indicate the ANOVA summary for the regression model used in Ngoma - Ramiro Upgrading Project. The F-statistic of 121.823 show that the model was statistically strong in explaining variation in project performance. The p-value was 0.000, which is lower than the 0.05 significance level. This means that the model was statistically significant and suitable for testing the stated objectives. Therefore, the independent

variables jointly explained meaningful changes in the dependent variable.

This position aligns with Wuni and Shen (2022) and Olanrewaju and Kaka (2023), who argue that performance is best understood when related practices are tested together, as institutional results are shaped by several interacting managerial factors.

Table 3: Coefficient

Model		Unstandardized Coefficients		Standardized Coefficients		Collinearity Statistics		
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	.083	.163		.511	.610		
	Financial Planning	.329	.052	.353	6.380	.000	.383	2.611
	Financial Risk Management	.297	.051	.288	5.775	.000	.470	2.126
	Financial Reporting	.194	.041	.236	4.716	.000	.469	2.130
	Financial Monitoring	.164	.057	.181	2.885	.005	.299	3.348

a. Dependent Variable: Project Performance

Source: Field Data, 2026

The results in Table 3 indicate the coefficient summary for the effect of the independent variables on project

performance in the Ngoma - Ramiro Upgrading Project. The coefficients show the contribution of each variable

when other variables are held constant, while tolerance and Variance Inflation Factor (VIF) values were used to assess multicollinearity.

Financial Planning recorded an unstandardized coefficient B of 0.329, a t-value of 6.380, and a significance value of 0.000. Since the significance value was less than 0.05, financial planning had a statistically significant effect on project performance. Specifically, a one-unit increase in financial planning leads to a 0.329-unit increase in project performance. The tolerance value of 0.383 was above 0.100 and the VIF value of 2.611 was below 10.000, showing that multicollinearity was not a threat for this variable. Based on this result, the null hypothesis related to financial planning was rejected. This finding is consistent with Gitman and Zutter (2022), who explain that financial planning strengthens performance by improving decision quality and the use of available resources. It also reflects the view of Nizam and Zhang (2023), who emphasize that the same variable is important when institutions seek stable and measurable performance improvements.

Financial Risk Management recorded an unstandardized coefficient B of 0.297, a t-value of 5.775, and a significance value of 0.000. Since the significance value was less than 0.05, financial risk management had a statistically significant effect on project performance. Specifically, a one-unit increase in financial risk management leads to a 0.297-unit increase in project performance. The tolerance value of 0.470 was above 0.100 and the VIF value of 2.126 was below 10.000, showing that multicollinearity was not a threat for this variable. Based on this result, the null hypothesis related to financial risk management was rejected. This finding is consistent with Ross and Westerfield (2023), who explain that financial risk management strengthens performance by improving decision quality and the use of available resources. It also reflects the view of Hamza and Khalil (2022), who emphasize that the same variable is important when institutions seek stable and measurable performance improvements.

Financial Reporting recorded an unstandardized coefficient B of 0.194, a t-value of 4.716, and a significance value of 0.000. Since the significance value was less than 0.05, financial reporting had a statistically significant effect on project performance. Specifically, a one-unit increase in financial reporting leads to a 0.194-unit increase in project performance. The tolerance value

of 0.469 was above 0.100 and the VIF value of 2.130 was below 10.000, showing that multicollinearity was not a threat for this variable. Based on this result, the null hypothesis related to financial reporting was rejected. This finding is consistent with Kaplan and Atkinson (2023), who explain that financial reporting strengthens performance by improving decision quality and the use of available resources. It also reflects the view of Mutua and Nzulwa (2022), who emphasize that the same variable is important when institutions seek stable and measurable performance improvements.

Financial Monitoring recorded an unstandardized coefficient B of 0.164, a t-value of 2.885, and a significance value of 0.005. Since the significance value was less than 0.05, financial monitoring had a statistically significant effect on project performance. Specifically, a one-unit increase in financial monitoring leads to a 0.164-unit increase in project performance. The tolerance value of 0.299 was above 0.100 and the VIF value of 3.348 was below 10.000, showing that multicollinearity was not a threat for this variable. Based on this result, the null hypothesis related to financial monitoring was rejected. This finding is in line with OECD (2022), who explains that financial monitoring strengthens performance by improving the quality of decisions and the use of available resources. It also reflects the view of Zhao and Zheng (2024), who emphasize that the same variable is important when institutions seek stable and measurable performance improvements.

The coefficient results confirmed that the predictors had positive and significant effects on project performance. The collinearity statistics were acceptable because all tolerance values were above the minimum requirement and all VIF values were below the commonly accepted danger level. This means that the independent variables contributed unique information to the model. The regression equation, therefore, provided a useful basis for decisions on the null hypotheses.

4.2 Decision on Null Hypotheses

This subsection presents the decision on the null hypotheses based on regression coefficients and significance values at the 0.05 level. The decision was made by rejecting the null hypothesis when the p-value was less than 0.05.

Table 4: Decision on null hypotheses

Null Hypothesis	Sig.	Decision
H ₀₁ : Financial planning has no significant effect on the performance of the Ngoma - Ramiro Upgrading Project.	0.000	Rejected
H ₀₂ : Financial risk management has no significant effect on the performance of the Ngoma - Ramiro Upgrading Project.	0.000	Rejected
H ₀₃ : Financial reporting has no significant effect on the performance of the Ngoma - Ramiro Upgrading Project.	0.000	Rejected
H ₀₄ : Financial monitoring has no significant effect on the performance of the Ngoma - Ramiro Upgrading Project.	0.005	Rejected

Source: Field Data, 2026

The findings in Table 4 indicate decisions on the null hypotheses for the Ngoma - Ramiro Upgrading Project. All listed p-values were below the 0.05 level of significance. This means that the null hypotheses were conclusively rejected. The decisions show that the independent variables had significant, positive effects on project performance in the current study.

5. Conclusion and Recommendations

5.1 Conclusion

This section presents the logical conclusions drawn directly from the study's inferential findings. The conclusions are organized by specific objectives to evaluate the overarching influence of financial administration on infrastructure success.

Regarding financial planning, the study concluded that meticulous budget preparation and capital allocation profoundly enhance project performance. The positive direction of the inferential relationship showed that strengthening predictive financial frameworks directly improves the ability to meet project milestones. Consequently, establishing rigorous cost estimates is a fundamental pillar for smooth operational implementation.

In terms of financial risk management, the research established that proactive threat mitigation significantly safeguards project continuity. Implementing robust contingency measures enables management to navigate market volatility effectively without compromising project timelines. Thus, defensive financial strategies are indispensable for maintaining overall stability and performance.

The investigation into financial reporting concluded that transparent fiscal communication substantially drives positive project outcomes. Ensuring strict audit compliance and ledger accuracy builds essential stakeholder trust and facilitates better strategic alignment. Therefore, high-quality financial disclosures

are critical for sustaining the fiscal integrity of the road upgrade.

Finally, the study concluded that continuous financial monitoring represents a crucial determinant of project success. Regular expenditure control and variance analysis empower project leaders to prevent misappropriation and detect discrepancies early. It is evident that rigorous site-level oversight translates directly into enhanced technical and financial achievements.

The empirical evidence collectively confirms that robust financial management practices are absolutely indispensable for the success of the Ngoma Ramiro Upgrading Project. Financial planning, risk management, reporting, and monitoring work synergistically to ensure optimal schedule adherence, tight cost control, and high-quality infrastructure. Ultimately, achieving sustainable performance in public road construction requires an integrated, evidence-driven management approach.

5.2 Recommendations

Based on the study findings and conclusions, the following recommendations are proposed to strengthen the implementation of the examined practices and improve project performance.

1. The management of the Ngoma Ramiro Upgrading Project should institutionalize rigorous controls on budget accuracy during the initial estimation phases.
2. Project administrators must mandate the regular updating of comprehensive financial risk registers across all operational departments.
3. Regulatory authorities should enforce strict adherence to international financial reporting standards to ensure maximum transparency in disclosure.
4. Site engineers and financial controllers must collaborate to implement continuous budget

tracking systems tailored for real-time oversight.

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References

- Adu-Gyamfi, G., & Asamoah, E. (2024). Financial risk identification and the performance of public healthcare construction in Ghana. *Journal of Infrastructure Systems*, 30(1), 45–58.
- Al-Thani, F. (2024). *Project finance planning and infrastructure development*. Emerald Publishing.
- Alexander, D., & Nobes, C. (2024). *Financial reporting and analysis: An international perspective* (10th ed.). Pearson Education.
- Assaad, R., & El-Adaway, I. H. (2022). Enhancing project delivery through advanced financial controls in the US construction industry. *Journal of Construction Engineering and Management*, 148(5), 112–125.
- Basel Committee on Banking Supervision. (2023). *Principles for the effective management and supervision of financial risks*. Bank for International Settlements.
- Bendickson, J. S., & Collins, J. D. (2023). Corporate governance and agency relationships: A modern review. *Journal of Business Research*, 156, 113–128.
- Bisengimana, J. (2024). Financial oversight mechanisms and the quality of secondary city road projects in Rwanda. *Rwanda Engineering and Finance Review*, 11(2), 22–38.
- Bizimana, J. D. (2022). Currency risk management and the performance of international construction joint ventures in Kigali. *Journal of African Business and Construction*, 8(1), 12–28.
- Brigham, E. F., & Houston, J. F. (2024). *Fundamentals of financial management* (16th ed.). Cengage Learning.
- Chan, A. P. C., & Chan, D. W. M. (2022). *Key performance indicators for construction project management*. Springer Nature.
- COSO. (2023). *Internal control—integrated framework: 2023 update*. Committee of Sponsoring Organizations of the Treadway Commission.
- Creswell, J. W., & Creswell, J. D. (2022). *Research design: Qualitative, quantitative, and mixed methods approaches* (6th ed.). SAGE Publications.
- Crouhy, M., Galai, D., & Mark, R. (2024). *The essentials of risk management* (3rd ed.). McGraw-Hill.
- Financial Accounting Standards Board. (2023). *Conceptual framework for financial reporting*. Financial Accounting Standards Board.
- Geda, B., & Tadesse, M. (2025). The impact of financial monitoring units on irrigation project performance in Ethiopia. *East African Journal of Agricultural Development*, 14(1), 33–49.
- Gidado, K. (2023). *Infrastructure project performance in emerging economies*. Routledge.
- Gitman, L. J., & Zutter, C. J. (2022). *Principles of managerial finance* (16th ed.). Pearson Education.
- Gray, I., & Manson, S. (2024). *The audit process: Principles, practice and cases* (8th ed.). Cengage Learning.
- Habimana, J. P., & Ngabo, D. (2025). Performance metrics of road infrastructure projects in Rwanda: A financial perspective. *African Journal of Project Management*, 9(1), 45–62.
- Hamza, M. S., & Khalil, A. (2022). Financial risk management and mega-project success: Evidence from Egypt's new capital. *International Journal of Civil Engineering*, 20(3), 301–315.
- Helfat, C. E., Kaul, A., Ketchen, D. J., Barney, J. B., Chatain, O., & Singh, H. (2023). Renewing the resource-based view: New contexts, new concepts, and new methods. *Strategic Management Journal*, 44(6), 1357–1390.
- Hill, C. W. L., & Jones, T. M. (2024). *Strategic management: An integrated approach* (14th ed.). Cengage Learning.
- Hopkin, P. (2022). *Fundamentals of risk management* (6th ed.). Kogan Page.
- Hull, J. C. (2023). *Risk management and financial institutions* (6th ed.). Wiley.

- IFRS Foundation. (2024). *IFRS sustainability disclosure standards: Annual reporting guide*. IFRS Foundation.
- International Accounting Standards Board. (2023). *International accounting standard 1: Presentation of financial statements*. IFRS Foundation.
- International Federation of Accountants. (2022). *International framework: Good governance in the public sector*. International Federation of Accountants.
- International Organization of Supreme Audit Institutions. (2022). *Financial monitoring guidelines*. International Organization of Supreme Audit Institutions.
- Jorion, P. (2024). *Financial risk manager handbook* (7th ed.). Wiley.
- Kaplan, R. S., & Atkinson, A. A. (2023). *Advanced management accounting* (4th ed.). Pearson.
- Kieso, D. E., Weygandt, J. J., & Warfield, T. D. (2022). *Intermediate accounting* (18th ed.). Wiley.
- Ministry of Infrastructure. (2023). *Annual performance report for the Rwandan construction sector 2022–2023*. Ministry of Infrastructure.
- Office of the Auditor General of Rwanda. (2024). *Report of the Auditor General of State Finances for the year ended 30 June 2023*. Office of the Auditor General of Rwanda.
- Panda, B., & Leepsa, N. M. (2022). Agency theory: Review of theory and evidence on problems and perspectives. *Indian Journal of Corporate Governance*, 15(1), 74–95.
- Pandey, I. M. (2022). *Financial management*. Vikas Publishing House.
- Project Management Institute. (2023). *A guide to the project management body of knowledge (PMBOK guide)* (7th ed.). Project Management Institute.
- Romão, D. M. M., Setti, C., Arruda, L. H. M., de Melo, R. C., de Araujo, B. C., Tan, A. R., DeMaio, P. N., & Kuchenmüller, T. (2023). Integration of evidence into Theory of Change frameworks in the healthcare sector: A rapid systematic review. *PLOS ONE*, 18(3), Article e0282808. <https://doi.org/10.1371/journal.pone.0282808>
- Ross, S. A., Westerfield, R. W., & Jaffe, J. (2023). *Corporate finance* (13th ed.). McGraw-Hill.
- Sumail, O. (2022). The testing of pecking order theory for behavior financing in the company's life stage. *Jurnal Keuangan dan Perbankan*, 26(3), 580–598.
- Walker, A. (2022). *Project management in construction* (7th ed.). Blackwell Publishing.
- Wuni, I. Y., & Shen, G. Q. (2022). Developing a critical success factors framework for modular integrated construction projects. *Sustainable Cities and Society*, 77, Article 103119.
- Zhao, L., & Zheng, X. (2024). Internal financial monitoring and procurement efficiency in China's high-speed rail. *Journal of Management in Engineering*, 40(1), 55–70.