



Effect of Project Risk Management Practices on Performance of Digitalized Projects: A Case of Karame Twaje Project Hosted in I&M Bank

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Abstract: The study assessed the effect of risk management practices on the performance of digitalized projects in Rwanda, focusing on the Karame Twaje Project. Data were collected using questionnaires. The model explained 75.8% of the variation in performance of digitalized projects ($R^2 = 0.758$). Risk identification had a positive significant effect ($B = 0.371$, Std. Error = 0.067, Beta = 0.367, $t = 5.537$, $p = 0.000$); risk analysis was positive and significant ($B = 0.118$, Std. Error = 0.058, Beta = 0.120, $t = 2.034$, $p = 0.045$); risk mitigation was positive and significant ($B = 0.187$, Std. Error = 0.064, Beta = 0.180, $t = 2.922$, $p = 0.004$); and risk monitoring was also positive and significant ($B = 0.281$, Std. Error = 0.064, Beta = 0.294, $t = 4.391$, $p = 0.000$). The study concluded that systematic risk management strengthened the performance of the Karame Twaje Project and recommended continuous risk identification, documented risk analysis, timely risk mitigation measures, and routine risk monitoring of emerging digital risks. Management should formalize and periodically review the procedures used for risk identification so that responsibilities, timelines, evidence requirements, and follow-up actions remain clear to all relevant actors.

Keywords: Risk Identification, Risk Analysis, Risk Mitigation, Risk Monitoring, Performance of Digitalized Projects

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1. Introduction

Project risk management practices have become essential components of modern project management due to increasing technological complexity and uncertainty in digital transformation initiatives. Digitalization projects require systematic identification, evaluation, and management of risks to ensure successful implementation and sustainability of technological systems. Organizations across the world are investing significant resources in digital infrastructure, yet project outcomes frequently depend on the effectiveness of risk management processes implemented during project planning and execution stages. Effective project performance is often associated with structured approaches to identifying threats and implementing

preventive strategies within project environments (Zwikaël & Meredith, 2023).

Rwanda has prioritized digital transformation through national strategies promoting information technology infrastructure, electronic government services, and digital financial platforms. Government programs promoting digital innovation have encouraged financial institutions and public organizations to adopt advanced technological systems. Implementation of digital projects such as electronic payment systems and digital banking services has required strong project management frameworks to ensure successful delivery of technological solutions. Studies examining digital transformation initiatives in Rwanda indicate that effective project management practices contribute significantly to improved performance outcomes of

technology-based projects (Nsengimana & Habimana, 2023).

Rwandan financial institutions have increasingly invested in digital banking services aimed at expanding financial inclusion and improving accessibility of banking services. Implementation of digital financial systems requires careful management of operational risks, technological integration challenges, and cybersecurity threats associated with digital platforms. Projects such as mobile banking platforms and digital payment systems demonstrate the importance of effective project management practices in ensuring successful delivery of technological innovations. These initiatives highlight the growing need for structured risk management frameworks in digital projects implemented within Rwanda's financial sector (Rwanda Development Board, 2024).

Digitalization projects operate efficiently with strong project management structures, effective risk control mechanisms, and reliable technological systems that ensure timely delivery, cost control, and high-quality performance outcomes. Digital platforms are expected to function without disruptions, achieve seamless system integration, and support user adoption while meeting planned objectives. Effective governance, technical capacity, and continuous monitoring enable digital projects to deliver sustainable and reliable services across sectors (African Development Bank Group, 2023).

The gap therefore exists in the limited understanding and application of effective management practices, particularly risk management, in improving the performance of digitalized projects. While digital initiatives continue to expand, inadequate empirical evidence exists on factors influencing their success, especially within Rwanda's banking sector. Specifically, no study has examined how risk management practices affect the performance of the Karame Twaje Project implemented by I&M Bank in Nyarugenge District. The study therefore seeks to fill this gap by providing empirical evidence on how risk management practices influence digital project performance implemented by I&M Bank in Nyarugenge District.

1.1 General Objective

The general objective of the study was to assess the effect of risk management practices on performance of digitalized projects focusing on the Karame Twaje Project.

1.2 Specific Objectives

i. To examine the effect of risk identification on performance of Karame Twaje Project.

ii. To assess the effect of risk analysis on performance of Karame Twaje Project.

iii. To determine the effect of risk mitigation on performance of Karame Twaje Project.

iv. To evaluate the effect of risk monitoring on performance of Karame Twaje Project.

2. Literature Review

This section reviews the literature related to the study variables and objectives.

2.1 Theoretical Review

This section presents and discusses the theories that underpin the study. It explains the main assumptions and relevance of each theory and shows how the theories relate to the study variables and provides a basis for understanding the relationships examined in the research.

2.1.1 Contingency Theory

Contingency Theory was originally developed by Fred Fiedler in 1967 to explain how organizational effectiveness depends on the fit between management approaches and situational conditions. The theory argues that there is no single universal management method suitable for all organizations or projects. Instead, management strategies should be adapted to the specific context, environment, and operational conditions facing an organization. Contingency Theory therefore emphasizes flexibility and situational adaptation in decision making. Organizations implementing complex projects must adjust their management strategies according to environmental uncertainties and operational risks (Donaldson, 2022).

Contingency Theory supports the idea that identifying risks early enables managers to adjust project strategies based on contextual factors. In this study, Contingency Theory helped explain how systematic identification of potential risks contributes to improved performance of the Karame Twaje Project.

2.1.2 Stakeholder Theory

Stakeholder Theory was introduced by R. Edward Freeman in 1984 to explain how organizations should consider the interests of all individuals and groups affected by their activities. The theory proposes that organizations achieve better performance when they balance the expectations of different stakeholders including employees, customers, investors, regulators, and communities. Stakeholder relationships influence decision making and organizational performance outcomes. Organizations that effectively manage

stakeholder relationships often demonstrate stronger operational sustainability. Stakeholder Theory therefore emphasizes inclusive governance in organizational management (Freeman, 2022).

Stakeholder Theory emphasizes that successful project implementation depends on understanding the interests, expectations, and influence of various stakeholders involved in the project. Risk analysis enables project managers to evaluate how different risks may affect stakeholder interests, project resources, and project outcomes. Through careful analysis of risks, project teams can prioritize actions that protect stakeholder value and project success. The study therefore applied Stakeholder Theory to explain how analyzing project risks contributes to better performance of the Karame Twaje Project.

2.1.3 Agency Theory

Agency Theory was developed by Michael Jensen and William Meckling in 1976 to explain relationships between principals and agents within organizations. The theory focuses on situations where one party delegates decision making authority to another party responsible for performing tasks on their behalf. Agency relationships frequently exist between shareholders and managers or between organizations and project teams responsible for implementing strategic initiatives. The theory highlights potential conflicts of interest that may arise when agents pursue personal interests rather than organizational goals. Agency Theory therefore emphasizes the importance of monitoring and governance mechanisms to ensure accountability (Eisenhardt, 2022).

Agency Theory focuses on the relationship between principals such as organizational leaders and agents such as project managers who are responsible for executing project activities. The theory highlights the importance of mechanisms that ensure agents act in the best interests of the organization. Risk mitigation strategies such as preventive controls and corrective actions help reduce uncertainties that may arise during project execution. In this study, Agency Theory helped explain how effective mitigation of project risks contributes to improved performance of the Karame Twaje Project.

2.1.4 Theory of Change

Theory of Change was developed during the 1990s within the field of program evaluation to explain how planned interventions lead to desired outcomes through structured causal pathways. The theory describes how activities implemented within projects contribute to short-term outputs, intermediate outcomes, and long-term impacts. Theory of Change emphasizes the importance of clearly identifying assumptions and conditions necessary for successful implementation of development initiatives. Organizations use this

framework to plan, monitor, and evaluate projects by linking activities to expected results. The theory therefore provides a systematic approach for understanding how project interventions generate desired outcomes (Vogel, 2022).

Theory of Change explains how planned interventions and continuous monitoring contribute to achieving intended project outcomes. The theory emphasizes the importance of regularly tracking progress and adjusting strategies when challenges arise during project implementation. Risk monitoring provides project managers with continuous information on emerging risks and project performance. The study therefore applied Theory of Change to explain how continuous monitoring of project risks supports successful performance of the Karame Twaje Project.

2.2 Empirical Review

This section reviews previous empirical studies related to the variables and objectives of the study.

2.2.1 Risk Identification and Performance of Projects

Zhang and Li (2023) conducted a study in China to examine how risk identification practices influence performance of digital transformation projects in financial institutions. The study aimed to evaluate whether early identification of operational and technological risks improves project implementation efficiency. The researchers adopted a quantitative research design using survey data collected from 210 information technology project managers involved in digital banking projects. Regression analysis indicated that risk identification significantly improved project schedule performance with a coefficient value of $\beta = 0.41$ and $p < 0.05$. The study concluded that early identification of system integration risks reduces project delays and improves technological implementation outcomes. The researchers recommended that financial institutions strengthen risk identification frameworks during the planning stages of digital projects.

2.2.2 Risk Analysis and Performance of Projects

Kumar and Singh (2023) conducted research in India examining how risk analysis influences implementation performance of digital infrastructure projects. The objective of the study was to evaluate whether systematic evaluation of technological risks improves project delivery efficiency. Data were collected from 194 project managers working on national digital infrastructure initiatives. Regression analysis revealed that risk analysis significantly influenced project schedule adherence with $\beta = 0.44$ and $p < 0.05$. The findings showed that projects applying structured analytical risk assessment experienced fewer operational disruptions during implementation. The study concluded that

analytical evaluation of risks improves decision making during digital project planning.

2.2.3 Risk Mitigation and Performance of Projects

Schneider and Hoffmann (2022) conducted research in Germany investigating the influence of risk mitigation practices on performance of large-scale digital government projects. The objective of the study was to assess whether mitigation strategies reduce operational disruptions during implementation of electronic government systems. The researchers adopted a mixed-methods research design involving 176 project specialists working in national digitalization initiatives. Statistical results indicated that risk mitigation practices improved project schedule adherence by 21% compared to projects that lacked formal mitigation mechanisms. The study concluded that preventive planning and corrective response strategies significantly improve project stability in digital transformation programs. The researchers recommended that government institutions incorporate structured mitigation frameworks into project governance policies.

2.2.4 Risk Monitoring and Performance of Projects

Lee and Chen (2023) conducted research in Taiwan examining the influence of risk monitoring practices on performance of digital infrastructure projects. The objective of the study was to determine whether continuous monitoring improves operational stability of digital systems. Data were collected from 198 technology project managers involved in information technology infrastructure development. Regression analysis revealed that risk monitoring significantly influenced project performance with $\beta = 0.43$ and $p < 0.05$. Continuous monitoring mechanisms enabled project teams to detect emerging threats early and implement corrective actions before system disruptions occurred. The study concluded that monitoring frameworks strengthens reliability of digital project implementation.

2.3 Research Gap

Most empirical studies have therefore examined general project management practices affecting digital transformation initiatives without focusing specifically on risk management practices applied within digital banking projects. Limited empirical evidence exists regarding how risk identification, analysis, mitigation, and monitoring influence performance of digital projects implemented by financial institutions in Rwanda. The absence of empirical studies examining these variables within the Karame Twaje Project implemented by I&M Bank in Nyarugenge District therefore represents a significant knowledge gap.

The study addressed this gap by examining the effect of risk management practices on performance of digitalized

projects focusing on the Karame Twaje Project. The research provided empirical evidence explaining how risk identification, risk analysis, risk mitigation, and risk monitoring influence project performance outcomes within Rwanda's digital banking environment.

3. Methodology

This section describes the methodology that was used to conduct the study. It presents the research design, study population, sampling procedures, data collection methods and instruments, validity and reliability procedures, data analysis techniques, and ethical considerations.

3.1 Research Design

The study adopted a descriptive and correlational research design. The descriptive design allowed the researcher to describe the current status of risk management practices applied within digitalization projects. The correlational design enabled the study to examine the statistical relationship between risk management practices and project performance. Quantitative data was collected through questionnaires.

3.2 Study Population

The study population consisted of employees and stakeholders involved in the Karame Twaje Project implemented by I&M Bank in Nyarugenge District. These individuals include project managers, ICT specialists, banking officers, digital service administrators, and operational staff participating in digital banking initiatives. The estimated population involved in the project is 382 individuals.

3.3 Sample Size and Sampling

Therefore, the sample size for the study was 195 respondents. The study applied stratified sampling and simple random sampling techniques. Stratified sampling was first used to divide the population into groups based on their professional roles within the digital project. Each category of respondents did form a separate stratum to ensure representation of all project stakeholders. After stratification, simple random sampling was used to select respondents from each category. This approach ensured that each member of the population has an equal probability of being selected.

3.4 Data Collection Methods and Instruments

The study used questionnaires as primary instruments for collecting data. Questionnaires collected quantitative information from project staff regarding risk management practices applied within digital projects.

The study used structured questionnaires containing closed-ended questions measured using a five-point Likert scale ranging from strongly disagree to strongly agree. Questionnaires were distributed to project staff involved in the Karame Twaje Project. Respondents provided information regarding risk identification, risk analysis, risk mitigation, risk monitoring, and project performance indicators.

3.5 Validity and Reliability

The questionnaire contained 29 items, comprising 25 statements used to measure the study variables and four demographic categories. A Content Validity Index of 0.862 indicates that 86.2% of the questionnaire items were relevant to the intended constructs. Since this value exceeded the accepted threshold of 0.70, the instrument demonstrated strong content validity and was considered appropriate for data collection in Karame Twaje Project.

The study tested reliability using Cronbach's Alpha coefficient through SPSS software. A Cronbach Alpha value greater than 0.7 indicated acceptable reliability of the research instrument. Reliability testing ensured that questionnaire items measuring each variable are internally consistent.

The reliability analysis covered all study variables and produced the following Cronbach's Alpha coefficients: Risk Identification = 0.816, Risk Analysis = 0.828, Risk Mitigation = 0.736, Risk Monitoring = 0.799, Performance of Digitalized Projects = 0.832. Every coefficient exceeded the accepted threshold of 0.70, indicating good internal consistency among the questionnaire items. The instrument was therefore considered dependable for measuring the constructs examined in Karame Twaje Project. These results supported the use of the collected responses for descriptive and inferential analysis.

3.6 Data Analysis

The study analyzed quantitative data using SPSS Version 29. Statistical analysis included both descriptive statistics and inferential analysis in order to examine relationships between risk management practices and project performance.

Inferential analysis was conducted using correlation and regression analysis to determine relationships between independent variables and dependent variables. Pearson correlation analysis examined the strength of relationships between risk management practices and project performance.

Multiple regression analysis tested the effect of each independent variable on project performance.

Regression equation:

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

Where:

Y = Performance of digital project

X₁ = Risk Identification

X₂ = Risk Analysis

X₃ = Risk Mitigation

X₄ = Risk Monitoring

β₀ = Constant

β₁-β₄ = Coefficient of estimates

ε = Error term

3.7 Ethical Considerations

Ethical considerations are important guidelines that ensure research is conducted responsibly and respectfully toward participants. Ethical research practices protect rights and confidentiality of respondents participating in the study. The researcher obtained official permission from I&M Bank and relevant authorities before conducting data collection. Participants did receive clear information regarding the purpose of the study and did voluntarily agree to participate before completing questionnaires. Information collected from respondents remained confidential and did only used for academic research purposes. Respondents did not be required to provide names or personal identification information. Participation in the study was voluntary, and respondents was free to withdraw from the research at any time.

4. Results and Discussions

This section presents, analyses, and discusses the findings obtained from the data collected during the study.

4.1 Response Rate

Response rate was examined to establish the level of participation among the 195 respondents selected for Karame Twaje Project in Nyarugenge District. The assessment distinguished complete returned questionnaires, incomplete returns, and instruments that were not returned, because only complete questionnaires were retained for quantitative analysis and interpretation.

The study presents the questionnaire response rate for the current study. Complete questionnaires accounted for 96.4% of the selected sample, providing the cases used in the statistical analysis of Karame Twaje Project while 3.6% were not received from the selected participants. The high proportion of complete returns reduced the likelihood of non-response bias and strengthened the

adequacy of the evidence used to address the study objectives.

4.2 Correlation Analysis

Pearson correlation analysis examined the direction, strength, and statistical significance of the relationship

between each independent variable and performance of digitalized projects. The analysis addressed the study objectives separately and applied a 0.05 significance level to determine whether the observed relationships were meaningful within Karame Twaje Project.

Table 1: Correlation matrix

		Risk Identification	Risk Analysis	Risk Mitigation	Risk Monitoring	Performance of Digitalized Projects
Risk Identification	Pearson Correlation Sig. (2-tailed)	1				
	N	188				
Risk Analysis	Pearson Correlation Sig. (2-tailed)	.754**	1			
	N	188	188			
Risk Mitigation	Pearson Correlation Sig. (2-tailed)	.728**	.691**	1		
	N	188	188	188		
Risk Monitoring	Pearson Correlation Sig. (2-tailed)	.775**	.715**	.774**	1	
	N	188	188	188	188	
Performance of Digitalized Projects	Pearson Correlation Sig. (2-tailed)	.815**	.730**	.757**	.803**	1
	N	188	188	188	188	188

** . Correlation is significant at the 0.01 level (2-tailed).

Source: Field Data, 2026

Table 1 presents the Pearson correlation results. Risk Identification was positively related to Performance of Digitalized Projects ($r = 0.815$; $p < 0.05$). Because the probability value was below 0.05, the relationship was statistically significant. This means that changes in risk identification were associated with corresponding changes in performance of digitalized projects. The evidence confirms that the relationship examined under this objective was meaningful in Karame Twaje Project.

This relationship resonates with Zhang and Li (2023), whose study established that early identification of operational and technological threats improved implementation efficiency in digital banking projects. The author's evidence clarifies that the association is not merely procedural, because well-developed practices shape the conditions through which project teams coordinate work, respond to constraints, and achieve intended outputs.

Risk Analysis was positively related to Performance of Digitalized Projects ($r = 0.730$; $p < 0.05$). Because the probability value was below 0.05, the relationship was statistically significant. This means that changes in risk analysis were associated with corresponding changes in

performance of digitalized projects. The evidence confirms that the relationship examined under this objective was meaningful in Karame Twaje Project.

The relationship resonates with Kumar and Singh (2023), whose study established that structured evaluation of technological risks improved schedule adherence and decision quality in digital infrastructure initiatives. The author's evidence clarifies that the association is not merely procedural, because well-developed practices shape the conditions through which project teams coordinate work, respond to constraints, and achieve intended outputs.

Risk Mitigation was positively related to Performance of Digitalized Projects ($r = 0.757$; $p < 0.05$). Because the probability value was below 0.05, the relationship was statistically significant. This means that changes in risk mitigation were associated with corresponding changes in performance of digitalized projects. The evidence confirms that the relationship examined under this objective was meaningful in Karame Twaje Project.

The relationship resonates with Schneider and Hoffmann (2022), whose study established that preventive controls and contingency arrangements strengthened reliability in

digital transformation projects. The authors' evidence clarifies that the association is not merely procedural, because well-developed practices shape the conditions through which project teams coordinate work, respond to constraints, and achieve intended outputs.

Risk Monitoring was positively related to Performance of Digitalized Projects ($r = 0.803$; $p < 0.05$). Because the probability value was below 0.05, the relationship was statistically significant. This means that changes in risk monitoring were associated with corresponding changes in performance of digitalized projects. The evidence confirms that the relationship examined under this objective was meaningful in Karame Twaje Project.

The relationship resonates with Lee and Chen (2023), whose study established that continuous risk monitoring increased operational stability in technology infrastructure projects. The author's evidence clarifies that the association is not merely procedural, because well-developed practices shape the conditions through

which project teams coordinate work, respond to constraints, and achieve intended outputs.

All relationships tested under the specific objectives were positive, strong, and statistically significant. The correlation evidence established a consistent bivariate connection between the management practices and performance of digitalized projects, while the regression analysis was subsequently used to determine their individual and combined predictive effects.

4.3 Regression Analysis

Multiple linear regression was applied to determine how the independent variables jointly and individually predicted performance of digitalized projects. The model summary established combined explanatory power and error independence, ANOVA tested whether the model was statistically meaningful, and the coefficient table quantified the direction, magnitude, significance, and collinearity condition of each predictor.

Table 2: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.871 ^a	.758	.753	.18095	1.824

a. Predictors: (Constant), Risk Monitoring, Risk Analysis , Risk Mitigation , Risk Identification
b. Dependent Variable: Performance of Digitalized Projects

Source: Field Data, 2026

Table 2 provides the model summary for the regression of performance of digitalized projects on risk identification, risk analysis, risk mitigation, and risk monitoring. The combined association between the predictors and project performance was strong, as shown by $R = 0.871$. The model produced $R^2 = 0.758$, indicating that the four risk management practices explained 75.8% of the variation in performance of the Karame Twaje Project, while 24.2% was attributable to other conditions. The adjusted R^2 was 0.753 and the standard error of the estimate was 0.181, showing a stable model after adjustment for the predictors. A Durbin-Watson value of 1.824 was sufficiently close to 2.000 and supported acceptable independence of residual errors.

The explanatory pattern aligns with Zhang and Li (2023), which emphasized that early identification of operational and technological threats improved implementation

efficiency in digital banking projects. That literature shows that project outcomes are rarely produced by a single isolated practice; instead, performance emerges from coordinated management dimensions that reinforce one another across planning and execution. The strong combined relationship in the current study is therefore consistent with a multidimensional understanding of project management within Karame Twaje Project.

The evidence is also supported by Kumar and Singh (2023), whose research explained that structured evaluation of technological risks improved schedule adherence and decision quality in digital infrastructure initiatives. This perspective demonstrates why the predictors jointly accounted for a substantial portion of the dependent variable: each management dimension contributes a distinct capability while operating within the same project system. The model consequently reflects the practical interaction of organizational arrangements, resources, controls, and learning processes rather than a collection of unrelated factors.

Table 3: ANOVA Summary

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	18.804	4	4.701	142.455	.000 ^b
Residual	5.992	183	.033		
Total	24.796	187			

a. Dependent Variable: Performance of Digitalized Projects

b. Predictors: (Constant), Risk Monitoring, Risk Analysis , Risk Mitigation , Risk Identification

Source: Field Data, 2026

Table 3 presents the ANOVA results used to assess the overall fitness of the regression model. The decision criterion was that a probability value below 0.05 (p-value < 0.05) indicated that the model was statistically significant and fit the data, whereas a probability value above 0.05 (p-value > 0.05) indicated that the model was not statistically significant and did not fit the data. The findings showed an F-statistic of 142.455 with a significance value below 0.05. Therefore, the regression model was statistically significant and fit the data. This demonstrated that risk identification, risk analysis, risk mitigation, and risk monitoring jointly predicted the performance of the Karame Twaje Project. The result confirmed that the combined risk management practices had significant explanatory power in determining the performance of the digitalized project.

The model significance resonates with Schneider and Hoffmann (2022), who explained that preventive controls and contingency arrangements strengthened reliability in digital transformation projects. The

empirical position demonstrates that integrated management practices create a collective structure for controlling uncertainty, organizing project work, and protecting intended outputs. In the present setting, the joint statistical effect is therefore consistent with literature that treats project performance as the product of interconnected practices rather than a single managerial intervention.

The result is further supported by Marnewick and Marnewick (2023), whose work indicated that digital project performance depended on systematic management of technological uncertainty, operational continuity, and delivery constraints. That scholarship provides a useful explanation for the significance of the full model because success depends on alignment among project processes, stakeholder expectations, and implementation controls. The evidence from Karame Twaje Project consequently fits a broader empirical pattern in which coordinated management dimensions jointly account for meaningful differences in project outcomes.

Table 4: Regression Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients		Collinearity Statistics		
	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1 (Constant)	.150	.173		.867	.388		
Risk Identification	.371	.067	.367	5.537	.000	.304	3.291
Risk Analysis	.118	.058	.120	2.034	.045	.374	2.673
Risk Mitigation	.187	.064	.180	2.922	.004	.346	2.890
Risk Monitoring	.281	.064	.294	4.391	.000	.294	3.404

a. Dependent Variable: Performance of Digitalized Projects

Source: Field Data, 2026

Table 4 presented the regression coefficients for performance of digitalized projects. The constant was positive (B = 0.150, t = 0.867, p = 0.388), but its probability value exceeded 0.05 and therefore it was not statistically significant when all risk management scores were fixed at zero. Its positive direction was nevertheless consistent with the estimated regression function. The assessment of the specific objectives therefore focused on the four predictor coefficients, their statistical significance, and their collinearity conditions.

Risk Identification had a positive and statistically significant effect on Performance of Digitalized Projects (B = 0.371, t = 5.537, p = 0.000). A one-unit increase in risk identification increased performance of digitalized projects by 0.371 units when the other predictors were held constant. The tolerance value of 0.304 and VIF of 3.291 indicated acceptable collinearity. Since the probability value was below 0.05, the null hypothesis on risk identification was rejected. The result confirmed that systematic identification of technological, operational,

financial, and implementation risks made a meaningful independent contribution to performance of the Karame Twaje Project. This effect is supported by Müller and Klein (2022), who explained that systematic recognition of technological and financial risks supported reliable delivery of information-technology infrastructure.

Risk Analysis had a positive and statistically significant effect on Performance of Digitalized Projects (B = 0.118, t = 2.034, p = 0.045). A one-unit increase in risk analysis increased performance of digitalized projects by 0.118 units when the other predictors were held constant. The tolerance value of 0.374 and VIF of 2.673 showed acceptable collinearity. Since the probability value was below 0.05, the corresponding null hypothesis was rejected. The result confirmed a meaningful independent effect within the Karame Twaje Project. This effect is supported by Mensah and Boateng (2023), who explained that analytical assessment of financial and technological exposure supported performance within financial-technology projects.

Risk Mitigation had a positive and statistically significant effect on Performance of Digitalized Projects ($B = 0.187$, $t = 2.922$, $p = 0.004$). A one-unit increase in risk mitigation increased performance of digitalized projects by 0.187 units when the other predictors were held constant. The tolerance value of 0.346 and VIF of 2.890 showed acceptable collinearity. Since the probability value was below 0.05, the corresponding null hypothesis was rejected. The result confirmed a meaningful independent effect within the Karame Twaje Project. This effect is supported by Agyekum and Boateng (2024), who explained that operational safeguards and response planning improved the performance of digital financial-service initiatives.

Risk Monitoring had a positive and statistically significant effect on Performance of Digitalized Projects ($B = 0.281$, $t = 4.391$, $p = 0.000$). A one-unit increase in risk monitoring increased performance of digitalized projects by 0.281 units when the other predictors were

held constant. The tolerance value of 0.294 and VIF of 3.404 showed acceptable collinearity. Since the probability value was below 0.05, the corresponding null hypothesis was rejected. The result confirmed a meaningful independent effect within the Karame Twaje Project. This effect is supported by Osei and Mensah (2024), who explained that ongoing supervision and early-warning systems supported stable digital banking platforms.

Therefore, every independent variable retained a positive coefficient and a probability value below the 0.05 significance threshold. The coefficient pattern confirmed that each management practice made a distinct contribution after the effects of the remaining predictors were controlled. All null hypotheses were rejected, while the acceptable tolerance and VIF values showed that the individual effects were not undermined by serious multicollinearity.

Table 5: Decision on Null Hypotheses

Null Hypothesis	Sig.	Decision
H01: Risk identification has no significant effect on performance of Karame Twaje Project.	.000	Rejected
H02: Risk analysis has no significant effect on performance of Karame Twaje Project.	.045	Rejected
H03: Risk mitigation has no significant effect on performance of Karame Twaje Project.	.004	Rejected
H04: Risk monitoring has no significant effect on performance of Karame Twaje Project.	.000	Rejected

Source: Field Data, 2026

Table 5 summarizes the hypothesis decisions for the current study. Every predictor recorded a significance value below 0.05, leading to rejection of all null hypotheses. The decisions establish that each independent variable had a statistically significant effect on performance of digitalized projects in Karame Twaje Project. The hypothesis evidence is therefore consistent with both the correlation and coefficient results reported under the specific objectives.

5. Conclusions and Recommendations

This section presents the conclusions and recommendations derived from the major findings of the study.

5.1 Conclusion

The study concluded that risk identification made a positive contribution to performance of digitalized projects in Karame Twaje Project. The evidence shows that stronger application of this practice improved the conditions through which project activities were coordinated, controlled, and directed toward intended results. The corresponding null hypothesis was rejected, confirming that the effect was meaningful rather than incidental.

The study concluded that risk analysis made a positive contribution to performance of digitalized projects in Karame Twaje Project. The evidence shows that stronger application of this practice improved the conditions through which project activities were coordinated, controlled, and directed toward intended results. The corresponding null hypothesis was rejected, confirming that the effect was meaningful rather than incidental.

The study concluded that risk mitigation made a positive contribution to performance of digitalized projects in Karame Twaje Project. The evidence shows that stronger application of this practice improved the conditions through which project activities were coordinated, controlled, and directed toward intended results. The corresponding null hypothesis was rejected, confirming that the effect was meaningful rather than incidental.

The study concluded that risk monitoring made a positive contribution to performance of digitalized projects in Karame Twaje Project. The evidence shows that stronger application of this practice improved the conditions through which project activities were coordinated, controlled, and directed toward intended results. The corresponding null hypothesis was rejected, confirming that the effect was meaningful rather than incidental.

5.2 Recommendations

The management of the Karame Twaje Project should establish and regularly review clear procedures for identifying technical, operational, financial, and stakeholder-related risks before and during project implementation.

The management and technical personnel of the Karame Twaje Project should strengthen risk analysis by consistently assessing the likelihood, potential impact, urgency, and priority of each identified risk to support informed decision-making.

The management of the Karame Twaje Project should develop practical risk mitigation measures, assign responsible personnel, allocate adequate resources, and prepare contingency actions for risks that may affect the performance of the digitalized project.

The management and stakeholders of the Karame Twaje Project should maintain continuous risk monitoring through regular progress reviews, timely reporting, follow-up on corrective actions, and early identification of emerging risks.

5.3 Areas for Further Research

Future studies should extend knowledge in the same field by examining relationships that were outside the boundaries of the current investigation. The following topics are proposed for further empirical inquiry in comparable project and institutional settings: Cybersecurity risk identification and reliability of digital banking projects in Rwanda and financial risk analysis and cost performance of financial-technology projects.

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