

Influence of Project Governance on Performance of a Road Construction Project: A Case Study of Kibugabuga-Shinga-Gasoro Road Connecting Bugesera and Nyanza Districts, Rwanda

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Abstract: Road construction projects are critical to Rwanda's infrastructure and economic development; however, delays, cost overruns, quality concerns, and inconsistent project performance continue to affect successful project delivery. This study examined the influence of project governance mechanisms on the performance of the Kibugabuga-Shinga-Gasoro road construction project connecting Bugesera and Nyanza Districts, Rwanda. Specifically, it assessed governance structure, stakeholder engagement, risk management, and accountability and transparency. A descriptive and correlational research design was adopted, involving all 81 respondents through census sampling. Data were collected using structured questionnaires and analyzed using descriptive statistics, Pearson correlation, and multiple regression in SPSS Version 27. The findings revealed that project governance mechanisms jointly explained 80.4% of the variation in project performance ($R^2 = 0.804$). Accountability and transparency had the strongest significant positive influence ($\beta = 0.454$, $p = 0.001$), followed by risk management ($\beta = 0.305$, $p = 0.014$), whereas stakeholder engagement ($\beta = 0.223$, $p = 0.127$) and governance structure ($\beta = -0.042$, $p = 0.759$) were not significant predictors. The study concluded that accountability, transparency, and effective risk management were critical to improved road project performance. It recommends strengthening transparent reporting, accountability mechanisms, and systematic risk management throughout the project lifecycle to enhance project outcomes and sustainable road infrastructure development in Rwanda.

Keywords: Project Governance, Governance Structure, Stakeholder Engagement, Risk Management, Accountability and Transparency, Project Performance, Road Construction.

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I. INTRODUCTION

Road infrastructure plays a critical role in economic development by facilitating the movement of people and goods, improving market accessibility, and supporting national and regional connectivity. This role is particularly important in Rwanda, a landlocked country where road transport remains the dominant mode of transportation for passengers and freight. Rwanda has consequently continued to invest in road infrastructure as part of its long-term development agenda. Efficient road infrastructure contributes to economic competitiveness and trade, while inadequate transport infrastructure can increase transportation costs and constrain investment and economic activities (Foster et al., 2023; Luttermann et al., 2020). Rwanda's infrastructure development priorities are also aligned with Vision 2050 and the National Strategy for Transformation, which emphasize

improved transport connectivity as an important foundation for economic transformation.

The benefits associated with road infrastructure, however, depend substantially on the successful performance of individual construction projects. Project performance generally reflects the extent to which a project achieves predetermined objectives relating to time, cost, quality, scope, and stakeholder satisfaction (Unegbu et al., 2022). Road construction projects are expected to be delivered according to planned schedules, approved budgets, and required technical and quality standards because deficiencies in these dimensions can reduce the socioeconomic value generated by infrastructure investments (Santoso, 2020). Despite substantial investment in infrastructure, road construction projects continue to experience challenges such as schedule delays, cost overruns, quality deficiencies, and dissatisfaction

among stakeholders. These challenges have increased attention to the governance arrangements through which infrastructure projects are directed, controlled, monitored, and held accountable.

Project governance provides the structures, processes, responsibilities, and decision-making arrangements through which projects are directed and controlled. Effective governance establishes clear responsibilities, supports appropriate decision-making, promotes accountability, manages risks, and facilitates interaction among project stakeholders (Turner, 2020). Governance mechanisms such as governance structure, stakeholder engagement, risk management, accountability, and transparency have therefore been associated with successful project delivery (Musawir et al., 2024; Alsenosy et al., 2022). In road construction specifically, effective governance is important for ensuring compliance with technical requirements, controlling project risks, coordinating contractors and public institutions, and addressing the expectations of financiers, government agencies, communities, and other stakeholders throughout the project lifecycle (Ametepey, 2022).

Previous research has established a relationship between project governance and project performance (Khan et al., 2021; Fareed & Su, 2022; Song & Hao, 2023). Nevertheless, much of the existing literature has examined governance in general project environments, private-sector organizations, or information technology projects (Haq et al., 2019; Young et al., 2020). Consequently, empirical evidence remains limited regarding how individual governance mechanisms influence the performance of public road infrastructure projects, particularly in developing-country contexts such as Rwanda. Moreover, treating project governance as a broad construct may obscure differences in the contribution made by specific mechanisms, including governance structure, stakeholder engagement, risk management, and accountability and transparency.

This gap is particularly relevant to the Kibugabuga–Shinga–Gasoro road project connecting Bugesera and Nyanza Districts. The civil works contract was signed on May 22, 2019, with an initial rehabilitation period of 30 months ending in November 2021, followed by a five-year maintenance period. However, reported project progress stood at 76.42% in October 2022 and 79.59% in October 2023, while construction of approximately 10 km had not commenced because of unresolved expropriation issues (OAG, 2022; OAG, 2023; World Bank, 2025). Such implementation difficulties, together with broader concerns regarding delays, land acquisition, funding constraints, contract management, contractor performance, and quality control in Rwandan road projects, demonstrate the importance of understanding whether and how governance mechanisms contribute to project performance.

Against this background, this study examined the influence of project governance mechanisms on the performance of the Kibugabuga–Shinga–Gasoro road construction project in Rwanda. Rather than considering project governance as a single general construct, the study

evaluated four mechanisms individually: governance structure, stakeholder engagement, risk management, and accountability and transparency. Project performance was assessed in relation to time, cost, quality, and stakeholder satisfaction. By examining these mechanisms within a public road infrastructure project, the study sought to provide empirical evidence that could support stronger governance practices and improved delivery of future road construction projects in Rwanda.

➤ *The Study was Guided by the Following Specific Objectives:*

- To analyze the influence of governance structure on the performance of the Kibugabuga–Shinga–Gasoro road construction project.
- To assess the influence of stakeholder engagement on the performance of the Kibugabuga–Shinga–Gasoro road construction project.
- To determine the influence of risk management on the performance of the Kibugabuga–Shinga–Gasoro road construction project.
- To evaluate the influence of accountability and transparency on the performance of the Kibugabuga–Shinga–Gasoro road construction project.

➤ *The Following Null Hypotheses were Tested:*

- H01: Governance structure has no significant influence on project performance.
- H02: Stakeholder engagement has no significant influence on project performance.
- H03: Risk management has no significant influence on project performance.
- H04: Accountability and transparency have no significant influence on project performance.

II. LITERATURE REVIEW

This section reviews literature related to project governance and project performance. It focuses on governance structure, stakeholder engagement, risk management, and accountability and transparency as the main governance mechanisms examined in the study. The section further presents the theoretical foundations, empirical evidence, conceptual framework, and research gap.

➤ *Conceptual Review*

• *Governance Structure*

Governance structure refers to the arrangement of roles, responsibilities, authority, and decision-making processes through which projects are directed and controlled. Effective governance structures clarify reporting relationships and responsibilities among project sponsors, managers, contractors, consultants, and other actors (Young et al., 2020). Clear structures enhance coordination, oversight, resource allocation, and timely decision-making, whereas poorly defined structures may result in role ambiguity, delayed decisions, and weak accountability (Wang et al., 2024). In

infrastructure projects, appropriate governance structures are therefore important for maintaining project control and supporting performance in terms of time, cost, quality, and stakeholder satisfaction (Musawir et al., 2024).

- *Stakeholder Engagement*

Stakeholder engagement involves identifying, communicating with, consulting, and involving individuals or groups that influence or are affected by project activities. Effective engagement promotes information sharing, trust, participation, conflict resolution, and alignment of stakeholder expectations with project objectives (PMI, 2021). In road construction projects, stakeholders include government institutions, contractors, consultants, local authorities, communities, and road users. Early and continuous involvement is particularly important in addressing issues such as land acquisition, expropriation, and community concerns. Effective stakeholder engagement can therefore reduce resistance and implementation challenges while improving stakeholder satisfaction and overall project performance.

- *Risk Management*

Risk management is the systematic identification, assessment, response, monitoring, and control of uncertainties that may affect project objectives. Construction projects are exposed to financial, technical, contractual, environmental, schedule, and stakeholder-related risks that may contribute to delays, cost overruns, and quality problems (PMI, 2021). Effective risk management enables project teams to anticipate potential threats, assess their likelihood and impact, and establish appropriate mitigation measures. Continuous risk monitoring also supports timely corrective actions when project conditions change. Effective risk management is therefore important for protecting project resources and improving the likelihood of achieving planned time, cost, and quality objectives.

- *Accountability and Transparency*

Accountability refers to the obligation of project actors to take responsibility for their decisions, actions, resource utilization, and outcomes, while transparency involves openness and accessibility of project-related information. These mechanisms strengthen oversight through clear responsibilities, reporting, disclosure, monitoring, and communication. In public infrastructure projects, accountability and transparency are particularly important because substantial public resources are involved. Transparent information and effective accountability mechanisms can reduce information asymmetry, strengthen stakeholder confidence, improve resource management, and facilitate timely corrective decisions. Consequently, accountability and transparency can contribute to improved project performance and public confidence in infrastructure delivery.

- *Project Performance*

Project performance refers to the extent to which a project achieves its planned objectives and expected outcomes. Performance has traditionally been evaluated through time, cost, and quality, although stakeholder

satisfaction has increasingly become an important measure of successful project delivery (Unegbu et al., 2022). Time performance concerns completion according to schedule, cost performance relates to adherence to the approved budget, and quality performance assesses compliance with specified standards. Stakeholder satisfaction reflects the extent to which project outcomes meet stakeholder expectations. These indicators were used in this study to assess the performance of the Kibugabuga–Shinga–Gasoro road project.

➤ *Theoretical Review*

- *Agency Theory*

Agency Theory, developed by Jensen and Meckling (1976), explains relationships in which principals delegate responsibilities to agents who undertake activities on their behalf. Differences in interests and access to information may create agency problems, making monitoring, accountability, and transparency important governance mechanisms. In construction projects, project owners rely on managers, contractors, consultants, and other agents to deliver expected outcomes. The theory therefore supported this study by explaining how clearly defined responsibilities, monitoring, reporting, and transparency can reduce information asymmetry and improve project performance.

- *Stewardship Theory*

Stewardship Theory emphasizes that managers and project actors can behave as responsible stewards whose interests are aligned with organizational and project objectives. The theory emphasizes trust, collaboration, empowerment, responsibility, and collective achievement rather than excessive control. Within road construction projects, stewardship-oriented governance can encourage project managers, contractors, consultants, and other actors to prioritize successful project delivery. The theory therefore helped explain how responsible leadership, collaboration, and commitment to shared objectives may contribute to better project performance.

- *Stakeholder Theory*

Stakeholder Theory, developed by Freeman (1984), emphasizes that organizations and projects should consider the interests of all parties that influence or are affected by their activities. Road construction projects involve government institutions, contractors, consultants, local authorities, communities, and road users whose interests may differ. Effective identification, communication, consultation, and participation of these stakeholders can reduce conflicts and strengthen project acceptance. Stakeholder Theory therefore provided the foundation for examining how stakeholder engagement could influence project performance and stakeholder satisfaction.

- *Organizational Theory*

Organizational Theory explains how organizational structures, authority, coordination, communication, and institutional arrangements influence performance. Clearly defined structures facilitate information flow, resource allocation, supervision, and timely decision-making, while poorly designed arrangements may create bureaucracy,

duplication, and coordination problems. The theory was relevant to this study because road construction projects involve multiple institutions and actors requiring clearly defined responsibilities and effective coordination. It therefore supported the examination of governance structure as a mechanism influencing project performance.

➤ Empirical Review

• Governance Structure and Project Performance

Previous studies have associated effective governance structures with improved project performance through clearer responsibilities, better decision-making, stronger oversight, and improved coordination. Musawir et al. (2024) indicated that effective project governance contributes to successful project delivery, while Wang et al. (2024) emphasized the importance of governance arrangements in strengthening control and decision-making. However, the influence of governance structures can vary according to project complexity and institutional context. Much of the existing evidence has focused on general project environments rather than public road construction projects, creating a need to assess the specific influence of governance structure on road project performance in Rwanda.

• Stakeholder Engagement and Project Performance

Empirical studies have shown that stakeholder engagement can enhance project performance by improving communication, trust, participation, and alignment of stakeholder expectations. Early engagement can facilitate problem identification and reduce conflicts and resistance during project implementation. This is particularly relevant in infrastructure projects involving land acquisition, affected communities, contractors, government institutions, and other stakeholders. Nevertheless, stakeholder engagement has frequently been examined as part of broader project management practices rather than as an independent

governance mechanism. Limited evidence therefore exists regarding its specific influence on the performance of public road projects in Rwanda.

• Risk Management and Project Performance

Studies have demonstrated that risk management contributes to project performance by enabling project teams to identify threats, assess their consequences, and implement mitigation measures before they significantly affect project objectives. Effective risk management can reduce exposure to schedule delays, unexpected costs, contractual problems, and technical difficulties. Conversely, inadequate risk identification and monitoring can increase project vulnerability to disruptions. Although risk management has been widely associated with project success, its effectiveness depends on project characteristics and institutional conditions. Empirical examination within Rwanda's public road construction context was therefore necessary.

• Accountability and Transparency and Project Performance

Previous studies have linked accountability and transparency with improved project implementation through stronger reporting, monitoring, information sharing, and responsible use of resources. Transparent decision-making can strengthen stakeholder confidence, while accountability ensures that project actors remain answerable for their responsibilities and outcomes. These mechanisms are especially important in public infrastructure projects where public resources and multiple institutions are involved. However, relatively limited empirical research has isolated the specific contribution of accountability and transparency to road construction project performance in Rwanda, providing justification for their inclusion in the present study.

➤ Conceptual Framework

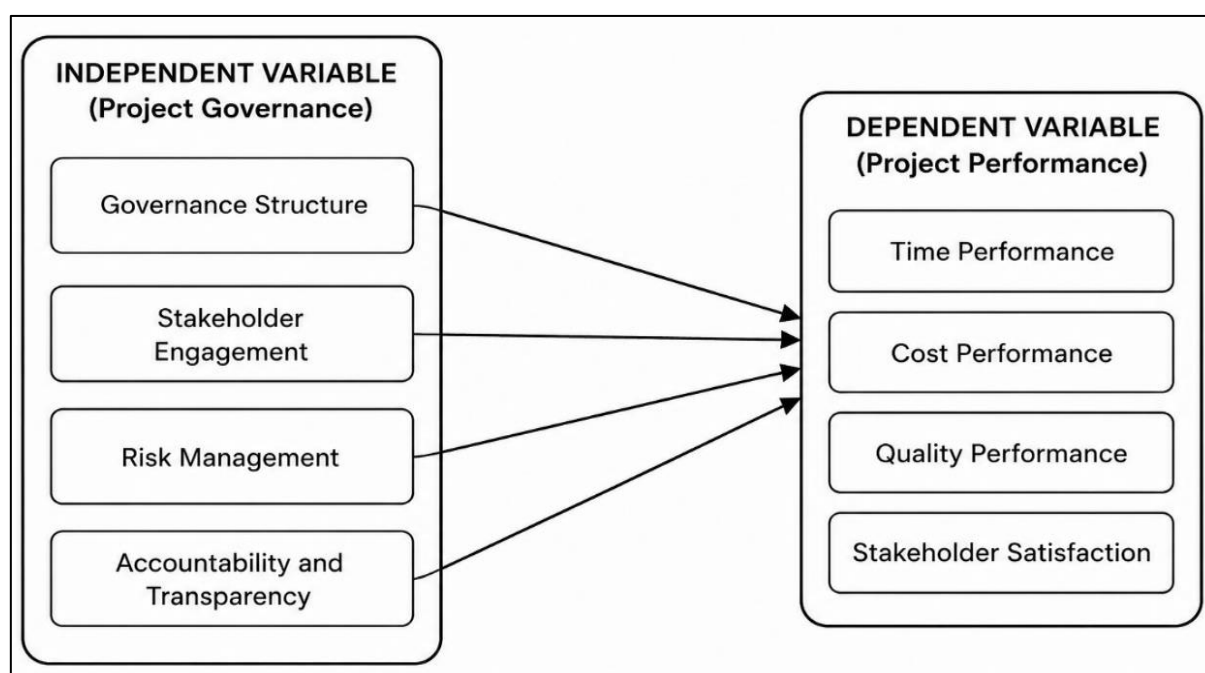


Fig 1 Conceptual Framework

➤ Research Gap

Existing studies have demonstrated the importance of project governance in improving project outcomes; however, much of the literature has examined governance broadly or focused on private-sector, information technology, and general project environments (Haq et al., 2019; Young et al., 2020). Limited empirical evidence has examined how specific mechanisms—governance structure, stakeholder engagement, risk management, and accountability and transparency—individually influence public road construction project performance in Rwanda. This study addressed this contextual and empirical gap by assessing the individual and combined influence of these four governance mechanisms on the performance of the Kibugabuga–Shinga–Gasoro road construction project using time, cost, quality, and stakeholder satisfaction as performance indicators.

III. METHODOLOGY

➤ Research Design:

The study employed descriptive and correlational research designs to examine the influence of project governance mechanisms on the performance of the Kibugabuga–Shinga–Gasoro road construction project in Rwanda. The descriptive design was used to describe existing governance practices and project performance, while the correlational design assessed relationships between governance structure, stakeholder engagement, risk management, accountability and transparency, and project performance.

➤ Population and Sampling:

The target population comprised 81 respondents involved in the planning, implementation, supervision, and oversight of the road project, including project engineers, project managers, site engineers, site supervisors, consultants, quality control and assurance engineers, project support staff, local government officials, local community representatives, and RTDA client representatives. Due to the manageable population size, a census approach was adopted, whereby all 81 eligible respondents were included in the study.

➤ Data Collection:

Primary and secondary data were used. Primary data were collected through a structured closed-ended questionnaire based on a five-point Likert scale ranging from strongly disagree to strongly agree. Secondary data were obtained through documentary review of project progress reports, audit reports, and other relevant project documents. The use of both sources enabled the study to combine respondents' perceptions with documented evidence on project governance and performance.

➤ Validity and Reliability:

Content validity of the questionnaire was assessed through reviews by academic supervisors, research scholars, and project management personnel to ensure clarity, relevance, and adequacy of the items. Reliability was assessed using Cronbach's Alpha, with a coefficient of 0.70 or above considered acceptable. The reliability results are presented in Table 1.

Table 1 Reliability Analysis

Study Variable	Number of Items	Cronbach's Alpha	Interpretation
Governance Structure	5	0.918	Excellent
Stakeholder Engagement	5	0.933	Excellent
Risk Management	5	0.946	Excellent
Accountability and Transparency	5	0.952	Excellent
Project Performance	5	0.913	Excellent

Source: Field Data, 2026

All Cronbach's Alpha coefficients ranged from 0.913 to 0.952 and exceeded the recommended threshold of 0.70, indicating excellent internal consistency of the questionnaire and confirming its suitability for subsequent statistical analysis.

➤ Data Analysis:

Completed questionnaires were checked, coded, cleaned, and entered into SPSS Version 27 for analysis. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarize the data. Pearson correlation analysis was employed to determine relationships between project governance mechanisms and project performance, while multiple regression analysis was used to establish the individual and combined influence of the four governance mechanisms on project performance. Statistical significance was assessed at the 5% level ($p < 0.05$).

• The Multiple Regression Model was Expressed as:

where Y represented project performance; X_1 represented governance structure; X_2 represented stakeholder engagement; X_3 represented risk management; X_4 represented accountability and transparency; β_0 represented the constant; β_1 – β_4 represented the regression coefficients; and ϵ represented the error term. The dissertation explicitly used these four predictors in its regression model.

➤ Ethical Considerations:

Ethical principles were observed throughout the study. Authorization was obtained from the university, respondents were informed about the purpose of the research and the voluntary nature of participation, and informed consent was obtained. Confidentiality and anonymity were maintained, personal identifiers were not collected, and study data were securely stored and used exclusively for academic purposes.

IV. RESULTS AND DISCUSSION

➤ Response Rate

Of the 81 questionnaires distributed, 78 were successfully completed and returned, representing a response rate of 96.3%. Only three questionnaires (3.7%) were not returned. The high response rate provided an adequate basis for examining the influence of project governance mechanisms on the performance of the Kibugabuga–Shinga–Gasoro road construction project.

➤ Descriptive Findings

Table 2 summarizes respondents' perceptions of the four project governance mechanisms and project performance. All governance mechanisms recorded mean scores above 3.50, indicating generally positive perceptions. Accountability and transparency recorded the highest overall mean ($M = 3.836$), followed by governance structure ($M = 3.824$), stakeholder engagement ($M = 3.782$), and risk management ($M = 3.596$). Overall project performance recorded a mean of 3.636.

Table 2 Summary of Descriptive Statistics

Variable	N	Mean	Std. Deviation	Interpretation
Governance Structure	78	3.824	0.973	High
Stakeholder Engagement	78	3.782	1.032	High
Risk Management	78	3.596	1.064	High
Accountability and Transparency	78	3.836	1.088	High
Project Performance	78	3.636	1.033	High

Source: Field Data, 2026

The findings indicate that respondents generally perceived governance mechanisms as being implemented within the project. Accountability and transparency emerged as the most highly rated governance dimension, while risk management recorded the lowest mean, suggesting comparatively greater room for improvement in risk identification, assessment, mitigation, monitoring, and contingency planning. Project performance was also rated positively overall; however, the relatively large standard deviations indicate differences in respondents' experiences and perceptions.

An important finding concerned time performance. Although the overall project performance mean was 3.636, the statement concerning completion within the planned schedule recorded only $M = 3.24$, lower than the ratings for

budget performance ($M = 3.65$), quality ($M = 3.69$), stakeholder satisfaction ($M = 3.73$), and achievement of intended objectives ($M = 3.87$). This suggests that schedule performance constituted a comparatively important challenge.

➤ Documentary Evidence on Project Performance

The documentary review provided further evidence concerning the actual performance of the project. The Design stage was completed within its planned six months; however, the Build/Upgrading stage increased from the planned 24 months to 64.1 months, representing a delay of 40.1 months. Consequently, the total contract duration increased from 102 months to 142.1 months. Project costs also increased from Rwf 43.89 billion to Rwf 57.88 billion, representing a cost overrun of Rwf 13.99 billion.

Table 3 Summary of Actual Project Performance

Performance Indicator	Planned	Actual	Variance
Design Stage	6.0 months	6.0 months	0.0 months
Build/Upgrading Stage	24.0 months	64.1 months	+40.1 months
Total Contract Duration	102.0 months	142.1 months	+40.1 months
Overall Project Cost	Rwf 43.89 billion	Rwf 57.88 billion	+Rwf 13.99 billion

Source: RTDA, 2025

These findings demonstrate that despite positive respondent perceptions of several project outcomes, documentary evidence revealed substantial schedule delays and cost overruns. This distinction is important because it provides an objective complement to the questionnaire findings and reinforces the need for effective governance mechanisms throughout road project implementation.

➤ Correlation between Project Governance and Project Performance

Pearson correlation analysis revealed strong and statistically significant positive relationships between all four governance mechanisms and project performance. Accountability and transparency showed the strongest relationship with project performance ($r = 0.868$), followed by stakeholder engagement ($r = 0.848$), risk management ($r = 0.836$), and governance structure ($r = 0.807$). All relationships were statistically significant at $p < 0.01$.

Table 4 Correlation Between Governance Mechanisms and Project Performance

Governance Mechanism	Pearson's r	p-value	Relationship
Governance Structure	0.807	<0.001	Strong positive
Stakeholder Engagement	0.848	<0.001	Strong positive
Risk Management	0.836	<0.001	Strong positive
Accountability and Transparency	0.868	<0.001	Strong positive

Source: Field Data, 2026

The correlation results indicate that stronger governance practices were associated with higher project performance. Accountability and transparency demonstrated the strongest bivariate relationship, suggesting that financial accountability, information disclosure, regulatory compliance, performance reporting, and oversight were particularly closely associated with successful project outcomes. However, correlation alone does not establish the independent contribution of each mechanism when the other governance variables are considered simultaneously; this was therefore examined through multiple regression.

➤ Regression Analysis and Hypothesis Testing

The multiple regression model produced $R = 0.897$, $R^2 = 0.804$, and adjusted $R^2 = 0.794$. Thus, governance structure, stakeholder engagement, risk management, and accountability and transparency jointly explained 80.4% of the variation in project performance, while 19.6% was attributable to factors outside the model. The overall regression model was statistically significant, $F(4,73) = 74.993$, $p < 0.001$.

Table 5 Regression Results and Hypothesis Decisions

Predictor	B	β	t	p-value	Decision
Governance Structure	-0.045	-0.042	-0.308	0.759	Fail to reject H01
Stakeholder Engagement	0.217	0.223	1.543	0.127	Fail to reject H02
Risk Management	0.286	0.305	2.523	0.014	Reject H03
Accountability and Transparency	0.406	0.454	4.002	<0.001	Reject H04

Dependent Variable: Project Performance.

Source: Field Data, 2026.

The regression results identified accountability and transparency as the strongest significant predictor of project performance ($\beta = 0.454$, $p < 0.001$), followed by risk management ($\beta = 0.305$, $p = 0.014$). Governance structure ($\beta = -0.042$, $p = 0.759$) and stakeholder engagement ($\beta = 0.223$, $p = 0.127$) did not have statistically significant independent effects when all governance mechanisms were considered simultaneously. Accordingly, H01 and H02 were not rejected, whereas H03 and H04 were rejected.

➤ Discussion of Findings

The study found that accountability and transparency had the strongest statistically significant influence on project performance. This indicates that transparent decision-making, financial accountability, information sharing, performance reporting, regulatory compliance, and independent oversight are particularly important for improving road construction project outcomes. The finding supports Bello et al. (2024), who emphasized the contribution of accountability and transparency to project performance through stronger governance and resource management. It is also consistent with Agency Theory, which emphasizes monitoring and accountability as mechanisms for reducing information asymmetry between principals and agents.

Risk management also had a significant positive influence on project performance. This suggests that identifying and assessing risks, implementing mitigation strategies, continuously monitoring risks, and developing contingency measures contribute to improved project outcomes. The result is consistent with Su and Khallaf

(2022), who highlighted the importance of effective risk management in reducing uncertainties affecting construction project success. Given the documented 40.1-month delay and Rwf 13.99 billion cost increase, the finding emphasizes the practical importance of proactive risk management in controlling uncertainties capable of affecting project schedules and costs.

Stakeholder engagement showed a strong positive correlation with project performance ($r = 0.848$) but did not remain statistically significant in the multivariate regression model ($\beta = 0.223$, $p = 0.127$). This distinction suggests that stakeholder engagement was closely associated with project performance at the bivariate level, but its unique contribution became weaker after controlling for the other governance mechanisms. The result does not imply that stakeholder engagement is unimportant; rather, its contribution may overlap with accountability, communication, risk management, and other governance processes.

Similarly, governance structure was strongly correlated with project performance ($r = 0.807$) but was not a significant independent predictor in the regression model ($\beta = -0.042$, $p = 0.759$). This suggests that formal roles, responsibilities, decision-making structures, and governance committees alone may not guarantee improved performance unless they are translated into effective governance practices. The finding therefore highlights an important distinction between the existence of governance structures and their effective operational implementation.

Overall, the results demonstrate that project governance mechanisms collectively played an important role in explaining road construction project performance, accounting for 80.4% of its observed variation. However, their contributions were not equal. Accountability and transparency and risk management emerged as the mechanisms with significant independent effects, while governance structure and stakeholder engagement showed strong correlations but nonsignificant unique regression effects. This provides a more nuanced understanding of project governance by showing that having multiple governance mechanisms is important, but strengthening the mechanisms that directly promote accountability, transparency, and systematic risk control may yield greater improvements in road construction project performance.

V. CONCLUSION

The study concluded that project governance significantly influenced the performance of the Kibugabuga-Shinga-Gasoro road construction project. Although governance structure, stakeholder engagement, risk management, and accountability and transparency were all positively associated with project performance, regression results showed that only risk management and accountability and transparency had statistically significant independent effects. This indicates that effective risk identification, assessment, mitigation, monitoring, financial accountability, transparent information sharing, regulatory compliance, and audit oversight are particularly important for improving road project performance. Governance structure and stakeholder engagement remained important complementary mechanisms but did not independently predict performance when the other governance factors were considered. Overall, the study concludes that greater priority should be given to strengthening risk management, accountability, and transparency while continuing to improve governance structures and stakeholder engagement to support effective and sustainable road construction project delivery in Rwanda.

AREAS FOR FURTHER RESEARCH

Suggestion for further Researchers during the study, the researcher did not examine all factors that may influence the performance of road construction projects. Therefore, future researchers are encouraged to investigate additional aspects that were beyond the scope of the current study. Further studies may also be conducted on other project governance mechanisms that influence the performance of road construction projects in Rwanda and other infrastructure sectors to enhance the generalizability of the findings. In addition, future research should examine the influence of factors such as leadership, organizational culture, procurement practices, and institutional capacity on project performance, as well as their interactions with project governance mechanisms to provide a more comprehensive understanding of the determinants of successful road construction project performance.

REFERENCES

- [1]. Abeysinghe, S. (2022). Project quality management. In *Managing information technology projects: Building a body of knowledge in IT project management*, (pp. 245-281).
- [2]. Ahmadabadi, A. A., & Heravi, G. (2019). The effect of critical success factors on project success in Public-Private Partnership projects: A case study of highway projects in Iran. *Transport policy*, 73, 152-161.
- [3]. Akeem, L. B. (2017). Effect of cost control and cost reduction techniques in organizational performance. *International business and management*, , 14(3), 19-26.
- [4]. Akinboboye, O., Afrihyia, E., Frempong, D., Appoh, M., Omolayo, O., Umar, M. O., ... & Okoli, I (2021). A risk management framework for early defect detection and resolution in technology development projects. *International Journal of Multidisciplinary Research and Growth Evaluation*, 2(4), 958-974.
- [5]. Akpa, V. O., Asikhia, O. U., & Nneji, N. E. (2021). Organizational culture and organizational performance: A review of literature. *International journal of advances in engineering and management*,, 3(1), 361-372.
- [6]. Alemu, B. (2025). The Role of Project Management Principles in Supporting Sustainable Organizational Initiatives. . In *Scientia Moralitas Conference Proceedings*, (pp. 82-103). Scientia Moralitas Research Institute.
- [7]. Almanasreh, E., Moles, R., & Chen, T. F. (2019). Evaluation of methods used for estimating content validity. *Research in social and administrative pharmacy*, 15(2), 214-221.
- [8]. Alsenosy, A. I., Albattat, A., & Talib, Z. (2022). The impact of organizational governance critical success factors on project performance. *Academy of Entrepreneurship Journal*, , 28, 1-11.
- [9]. Ametepey, S. O., Aigbavboa, C., & Thwala, W. D. (2022). Determinants of sustainable road infrastructure project implementation outcomes in developing countries. *Sustainable and Resilient Infrastructure*, 7(3), 239-251.
- [10]. Andrade, C. (2020). Sample size and its importance in research. *Indian journal of psychological medicine*,, 42(1), 102-103.
- [11]. Anil, A. P., & KP, S. (2019). TQM practices and its performance effects—an integrated model. *International Journal of Quality & Reliability Management*,, 36(8), 1318-1344.
- [12]. Baysinger, B. D., & Butler, H. N. (2019). Corporate governance and the board of directors: Performance effects of changes in board composition. In *Corporate governance*, (pp. 215-238).
- [13]. Bello, A., Abdulraheem, A. A., Afolabi, O. P., Aka, A., & Gbenga, P. O. (2024). Assessing the underlying factors affecting trust and transparency in the construction industry: a mixed method approach. *Construction Economics and Building*, 24(1-2), 9-28.

- [14]. Borsboom, D., Mellenbergh, G. J., & Van Heerden, J. (2004). The concept of validity. *Psychological review*, 111(4), 1061.
- [15]. Caldwell, C., Hayes, L. A., & Long, D. T. (2010). Leadership, trustworthiness, and ethical stewardship. *Journal of Business Ethics*, 96(4), 497-512.
- [16]. Costa, J. (2024). Mixed methods in educational large-scale studies: Integrating qualitative perspectives into secondary data analysis. *Education Sciences*, 14(12), 1347.
- [17]. Davis, J. H., Schoorman, F. D., & Donaldson, L. (1997). Toward a stewardship theory of management. *Academy of Management review*, 22(1), 20-47.
- [18]. Dodson, T. (2024). Accountability in projects: Project manager perspective (Doctoral dissertation). University of Glasgow.
- [19]. Doyle, L., McCabe, C., Keogh, B., Brady, A., & McCann, M. (2020). An overview of the qualitative descriptive design within nursing research. *Journal of research in nursing*, 25(5), 443-455.
- [20]. Eyinade, W., Ezeilo, O. J., & Ogundej, I. A. (2022). A Stakeholder Engagement Model for Strengthening Transparency in Corporate Financial Performance Reporting. *Shodhshauryam, International Scientific Refereed Research Journal*, 5(6), 236-251.
- [21]. Ezech, M. O., Ogbu, A. D., Ikevuje, A. H., & George, E. P. E. (2024). Stakeholder engagement and influence: Strategies for successful energy projects. *International Journal of Management & Entrepreneurship Research*, 6(7), 2375-2395.
- [22]. Fareed, M. Z., & Su, Q. (2022). Project governance and project performance: the moderating role of top management support. *Sustainability*, 14(5), 2516.
- [23]. Foster, V., Gorgulu, N., Straub, S., & Vagliasindi, M. (2023). The impact of infrastructure on development outcomes. Washington, DC: World Bank.
- [24]. Freeman, R. E. (2002). Stakeholder theory. A libertarian defense. *Business ethics quarterly*, 12(3), 331-349.
- [25]. Gao, J. (2020). P-values—a chronic conundrum. *BMC Medical Research Methodology*, 20(1), 167.
- [26]. Griffiths, P., & Needleman, J. (2019). Statistical significance testing and p-values: Defending the indefensible? A discussion paper and position statement. *International journal of nursing studies*, 99, 103384.
- [27]. Haq, S. U., Gu, D., Liang, C., & Abdullah, I. (2019). Project governance mechanisms and the performance of software development projects: Moderating role of requirements risk. *International Journal of Project Management*, 37(4), 533-548.
- [28]. Hauser, P. M. (1941). The use of sampling in the census. *Journal of the American Statistical Association*, 36(215), 369-375.
- [29]. Haveman, H. A. (2022). The power of organizations: A new approach to organizational theory. Princeton University Press.
- [30]. Herath, S., & Chong, S. (2021). Key components and critical success factors for project management success: A literature review. *Operations and supply chain management: An International Journal*, 14(4), 431-443.
- [31]. Holmes, A. G. (2023). The design and use of questionnaires in educational research: A new (student) researcher guide. *Innovare Journal of Education*, 11(3).
- [32]. Hwang, B. G., Shan, M., Zhu, L., & Lim, W. C. (2020). Cost control in megaprojects: efficacy, tools and techniques, key knowledge areas and project comparisons. *International Journal of Construction Management*, 20(5), 437-449.
- [33]. Jiang, C., & Fu, Q. (2019). A Win-win outcome between corporate environmental performance and corporate value: From the perspective of stakeholders. *Sustainability*, 11(3), 921.
- [34]. Khan, A., Waris, M., Panigrahi, S., Sajid, M. R., & Rana, F. (2021). Improving the performance of public sector infrastructure projects: Role of project governance and stakeholder management. *Journal of Management in Engineering*, 37(2), 04020112.
- [35]. Khatun, N. (2021). Applications of normality test in statistical analysis. *Open journal of statistics*, 11(01), 113-122.
- [36]. Kikasu, E. T., & Dorasamy, N. (2025). Promoting Accountability and Transparency to Ensure Effective Governance. In *Development in Post-Apartheid South Africa* (pp. 103-130). Routledge.
- [37]. Leung, M. Y., Ojo, L. D., & Ahmed, K. (2024). Exploring corruption factors inhibiting team decision-making on construction projects. *Journal of Management in Engineering*, 40(5), 04024045.
- [38]. Li, Y., Han, Y., Luo, M., & Zhang, Y. (2019). Impact of megaproject governance on project performance: Dynamic governance of the Nanning transportation hub in China. *Journal of Management in Engineering*, 35(3), 05019002.
- [39]. Luttermann, S., Kotzab, H., & Halaszovich, T. (2020). The impact of logistics performance on exports, imports and foreign direct investment. *World Review of Intermodal Transportation Research*, 9(1), 27-46.
- [40]. Mambwe, M., Mwanaumo, E. M., Nsefu, M. K., & Sakala, N. (2020). Impact of stakeholder engagement on performance of construction projects in Lusaka District. In *Proceedings of the 2nd African International Conference on Industrial Engineering and Operations Management*, Harare, Zimbabwe, (pp. 7-10).
- [41]. Mbonabihama, C. (2022). Influence of Project Management Practices on Timely Completion of Construction Projects in Rwanda Case Study: Norrsken House, Kigali. Kigali.
- [42]. Jensen, M. C., & Meckling, W. H. (1976). Theory of the Firm. Managerial behavior, agency costs and ownership structure, 3(4), 305-360.
- [43]. Mitchell, J. R. (2022). Stakeholder engagement, knowledge problems and ethical challenges. *Journal of Business Ethics*, 175(1), 75-94.
- [44]. Mitchell, R. K. (2019). Stakeholder identification and its importance in the value creating system of stakeholder work. *The Cambridge handbook of stakeholder theory*, 1, 53-73.

- [45]. Mitnick, B. M. (2019). Origin of the theory of agency: an account by one of the theory's originators. Available at SSRN 1020378.
- [46]. Müller, R. (2023). Principles of good governance. In *Research handbook on the governance of projects* (pp. 20-30). Edward Elgar Publishing.
- [47]. Müller, R., Drouin, N., & Sankaran, S. (2019). Modeling organizational project management. *Project Management Journal*, 50(4), 499-513.
- [48]. Musawir, A. U., Mohd-Danuri, M. S., & Abd-Karim, S. B. (2024). Making sense of project governance and its role in strategy implementation: A governance-as-practice perspective. *International Journal of Managing Projects in Business*, 17(1), 50-76.
- [49]. Nathan, R., Whyler, J., & Wilson, P. (2021). Risk of harm to others: Subjectivity and meaning of risk in mental health practice. *Journal of Risk Research*, 24(10), 1228-1238.
- [50]. Nderi, C. W. (2024). Organization Theory and Alignment of Organizations' Structure to Their Environment. *Journal of Human Resource & Leadership*, 8(2), 71-81.
- [51]. Negesa, A. B. (2022). Assessing the causes of time overrun in building and road construction projects: the Case of Addis Ababa City, Ethiopia. *Journal of Engineering*, 2022(1), 8479064.
- [52]. NTAMWIZA, J. M. (2019). Role of Transport Sector on Economic Growth in Rwanda. *Econometric Approach*.
- [53]. OAG. (2022). Annual Audit Report: For The Year Ended 30 June 2022. pp 29.
- [54]. OAG. (2023). Annual Audit Report: For The Year Ended 30 June 2023. pp 23.
- [55]. Oburu, A. O. (2020). Effective project time management. *International Academic Journal of Information Sciences and Project Management*, 3(6), 47-55.
- [56]. Omondi, K. E. (2020). Stakeholder participation and performance of road construction projects in Kilifi County, Kenya. *International Academic Journal of Information Sciences and Project Management*.
- [57]. Pajunen, K. (2006). Stakeholder influences in organizational survival. *Journal of management studies*, 43(6), 1261-1288.
- [58]. Pinto, J. K., & Slevin, D. P. (2021). Project stakeholder management: strategies and best practices. *Project Management Journal*, 52(1), 56-68.
- [59]. PMBOK. (2017). A guide to the project management body of knowledge (PMBOK guide). Pennsylvania: Project Management Institute.
- [60]. PMI. (2021). A guide to the project management body of knowledge (PMBOK® guide)–Seventh edition and the standard for project management. Project Management Institute.
- [61]. Pratiwi, R. I. Haliah, & Kusumawati, A. (2024). The Influence of Transparency, Governance, and Financial Accountability in Managing Financial Reporting in the Public Sector. *International Journal of Educational and Life Sciences*, 2(10), 1165-1180.
- [62]. Putri, L., Rezani, M. R., & Hermina, D. (2025). Correlational research design. *Jurnal Riset Multidisiplin Edukasi*, 2(6), 306-317.
- [63]. Rivera, L., Baguec Jr, H., & Yeom, C. (2020). A study on causes of delay in road construction projects across 25 developing countries. *Infrastructures*, 5(10), 84.
- [64]. Ronoh, D. K. (2020). Project Management Practices and Performance of Residential Construction Projects in Nairobi City County. Unpublished Msc thesis, Nairobi: Kenyatta University.
- [65]. RTDA. (2025). Final Completion Report of Upgrading Stage . Kigali City : Rwanda Transport Development Agency (December 2025).
- [66]. Sakyi, J. K. (2022). Developing KPI frameworks to enhance accountability and performance across large-scale commercial organizations. *Frontiers in Multidisciplinary Research*, 3(1), 593-606.
- [67]. Samad, A. W. (2025). Adaptive Strategies in HR Performance Management in Multinational Companies: Integration, Modernization, and Knowledge Sharing. *Journal of Center for Energy Policy and Human Resources Capacity Development*, 1(1), 18-27.
- [68]. Santoso, D. S. (2020). Critical factors affecting the performance of large construction projects in developing countries: A case study of Sri Lanka. *Journal of Engineering, Design and Technology*, 18(3), 531-556.
- [69]. Sharma, H. &. (2025). Crafting an effective questionnaire: An essential prerequisite of engaging surveys. *Perspectives in Clinical Research*, 16(3), 118-126.
- [70]. Shaukat, M. B. (2022). Revisiting the relationship between sustainable project management and project success: The moderating role of stakeholder engagement and team building. *Sustainable Development*, 30(1), 58-75.
- [71]. Shehu, S., & Shehu, R. (2023). Quality performance indicators of building construction projects in Nigeria. *Borneo Journal of Social Sciences & Humanities*, 5(2).
- [72]. Song, Y., & Hao, S. (2023). Influence of project governance mechanisms on the sustainable development of public-private partnership projects: An empirical study from China. *Buildings*, 13(10), 2424.
- [73]. Sophie, E. R. (2025). Schedule Performance Analysis using EVM and Critical Path Method (CPM).
- [74]. Srinivas, K. (2019). Process of risk management. Perspectives on risk, assessment and management paradigms, (10), 5772.
- [75]. Su, G., & Khallaf, R. (2022). Research on the influence of risk on construction project performance: A systematic review. *Sustainability*, 14(11), 6412.
- [76]. Taber, K. S. (2018). The use of Cronbach's alpha when developing and reporting research instruments in science education. *Research in science education*, 48(6), 1273-1296.
- [77]. Taherdoost, H. (2022). What are different research approaches? Comprehensive review of qualitative, quantitative, and mixed method research, their applications, types, and limitation. *Journal of*

- management science & engineering research, 5(1), 53-63.
- [78]. Thornhill, C. (2015). Accountability. *Administratio Publica*, 23(1), 77-101.
- [79]. Turner, R. (2020). How does governance influence decision making on projects and in project-based organizations?. *Project Management Journal*, 51(6), 670-684.
- [80]. Unegbu, H. C. O., Yawas, D. S., & Dan-Asabe, B. (2022). An investigation of the relationship between project performance measures and project management practices of construction projects for the construction industry in Nigeria. *Journal of King Saud University-Engineering Sciences*, 34(4), 240-249.
- [81]. Willie, M. M. (2022). Differentiating between population and target population in research studies. *International journal of medical science and clinical research studies*, 2(6), 521-523.
- [82]. World Bank. (2025). Lake Victoria Transport Program, SOP1, Rwanda. World Bank.
- [83]. Xie, L. L., Lin, G., & Luo, Y. (2025). Investigating the impact of multiple governance mechanisms on new infrastructure projects performance: evidence from China. *Engineering, Construction and Architectural Management*, 32(9), 6027-6044.
- [84]. YILMAZ, R. (2022). Evaluation of agency theory in organizational context. *Theory and Research in Social, Human and Administrative Sciences*.
- [85]. Young, R., Chen, W., Quazi, A., Parry, W., Wong, A., & Poon, S. K. (2020). The relationship between project governance mechanisms and project success: An international data set. *International Journal of Managing Projects in Business*, 13(7), 1496-1521.
- [86]. Zid, C., Kasim, N., & Soomro, A. R. (2020). Effective project management approach to attain project success, based on cost-time-quality. *International Journal of Project Organisation and Management*, 12(2), 149-163.
- [87]. Zwikael, O., Salmona, M., Meredith, J., & Zarghami, S. A. (2023). Enhancing project stakeholder communication under insufficient knowledge of project management concepts. *Engineering, Construction and Architectural Managemet*, 30(10), 5007-5029.