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Effect of Stakeholders Management Practices on the Success of Road Construction Project: A Case of Nyamata-Gako-Ruhuha-Nyanza Road in Bugesera and Nyanza Districts, Rwanda (2021–2025)

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Abstract: This study assessed the effect of stakeholders' management practices on the success of the Nyamata-Gako-Ruhuha-Nyanza road project in Bugesera and Nyanza Districts, Rwanda (2021–2025). It examined stakeholder identification, stakeholder engagement, and stakeholder monitoring and evaluation as predictors of project success. A mixed-methods explanatory sequential design combined questionnaire data with stakeholder interviews and documentary evidence. From a target population of 323, a sample of 179 participants was selected through stratified sampling and Slovin's formula. Data were analyzed using Pearson correlation, multiple regression, and thematic analysis. Correlation analysis identified positive associations with project success for identification ($r = 0.456$), engagement ($r = 0.523$), and monitoring and evaluation ($r = 0.541$), all significant at $p < 0.01$. The combined model explained 32.1% of the variance in project success ($R^2 = 0.321$; $F = 27.577$, $p < 0.001$). Monitoring and evaluation was a significant predictor ($\beta = 0.289$, $p = 0.006$), followed by engagement ($\beta = 0.234$, $p = 0.015$), whereas identification was not independently significant ($\beta = 0.145$, $p = 0.178$). The study concluded that meaningful engagement and consistent monitoring are especially important for road project success. It recommended systematic grievance tracking, timely consultation, regular stakeholder-register updates, and transparent feedback mechanisms to strengthen project performance and community confidence. The findings further emphasized the need for stronger institutional accountability.

Keywords: Stakeholder Management Practices, Stakeholder Identification, Stakeholder Engagement, Stakeholder Monitoring and Evaluation, Project Success, Road Construction

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1. Introduction

Road infrastructure projects depend on the coordination of government agencies, contractors, affected residents, financiers, and other interested groups. Stakeholder management therefore extends beyond identifying interested parties to maintaining relationships, anticipating conflicts, and responding to changing concerns throughout implementation. The stakeholder perspective is particularly relevant for public infrastructure, where acceptance and continuity may determine whether constructed assets deliver lasting value (Freeman et al., 2021).

The effectiveness of stakeholder participation is influenced by the quality of engagement and the extent to which project managers respond to concerns.

Meaningful consultation, accessible communication, and collaboration are important where project decisions affect land access, livelihoods, safety, and local services. Stakeholder engagement research emphasizes a movement from one-way information delivery toward dialogue and shared problem-solving (Kujala et al., 2022).

In road construction, stakeholder concerns may influence project schedules, cost control, and the realization of benefits. The traditional project success measures of time, cost, and scope remain useful, but they do not capture all dimensions of stakeholder satisfaction, social acceptance, and sustainability. The study therefore assessed project success through effectiveness, efficiency, quality standards, sustainability, and impact, following the multidimensional approach developed in the dissertation (Atkinson, 2021).

Infrastructure studies have linked limited consultation and ineffective stakeholder coordination to project disagreements and delays. In Kenya, Kavishe and Chileshe (2022) considered stakeholder-related success factors in public–private partnership road development, while Gwaya et al. (2021) examined project-stakeholder management and road construction performance in Mombasa County. These studies demonstrate the importance of examining how management practices operate in specific institutional and community settings.

In Rwanda, participatory infrastructure governance is relevant where construction corridors intersect with residential settlements, local businesses, agricultural activities, and public facilities. Engagement and communication influence whether affected populations understand construction decisions and experience appropriate responses to their concerns. Evidence discussed in the dissertation highlights the potential contribution of community consultation and local participation to infrastructure acceptance (Gakeri & Kabando, 2023).

The Nyamata-Gako-Ruhuha-Nyanza Road project traverses Bugesera and Nyanza Districts. The dissertation describes stakeholder-related concerns involving consultation, communication about disruptions, grievance handling, and coordination during implementation. These concerns motivated a project-specific assessment of whether identification, engagement, and monitoring and evaluation were associated with success during 2021–2025. The research focused on the conditions observed along this particular road corridor rather than assuming that evidence from other infrastructure settings applied without qualification (World Bank, 2024).

Although previous work has considered stakeholder involvement in road and construction projects, evidence on the respective contributions of identification, engagement, and monitoring and evaluation within this Rwandan road project remained limited. The investigation therefore tested each dimension in a combined statistical model and complemented the results with interview evidence. This design allowed the assessment of whether identifying interested parties was sufficient or whether continued participation and systematic follow-up made additional contributions to project success (Mok et al., 2023).

1.1 General Objective

The general objective of this study was to assess the effect of stakeholders' management practices on the success of the Nyamata-Gako-Ruhuha-Nyanza (Busoro) road project.

1.2 Specific Objectives

The specific objectives identify the three stakeholder management practices examined in relation to road construction project success.

1. To assess the effect of stakeholder identification on the success of the Nyamata-Gako-Ruhuha-Nyanza road.
2. To determine the effect of the stakeholder engagement in project implementation on the success of the Nyamata-Gako-Ruhuha-Nyanza road.
3. To examine the effect of the stakeholder monitoring and evaluation on the success of the Nyamata-Gako-Ruhuha-Nyanza road.

2. Literature Review

The review considers theoretical explanations and empirical findings concerning stakeholder identification, stakeholder engagement, stakeholder monitoring and evaluation, and the success of road construction projects.

2.1 Theoretical Review

The theoretical review relates stakeholder relationships, external resource dependencies, project delivery constraints, and pathways of change to the study variables.

2.1.1 Stakeholder Theory

According to the Stakeholder Theory that was initially explained by R. Edward Freeman in 1984, organizations (and, accordingly, projects) should bring value to all parties that have an interest in its operations, and not just to shareholder profit. According to this ethical and management philosophy, sustainable success can be achieved by identifying and balancing the diverse and

usually competing interests of the different groups such as employees, communities, suppliers, regulators, and clients. The theory transforms the managerial gaze, which is inwards-oriented and is economic, to a wider responsibility that acknowledges the legitimacy of the external claims. The current project management practice of stakeholder analysis, engagement planning, and communication strategies is based on this theory and assumes that the active management of these relationships is not only a discretionary practice but also a strategic role that should be played in risk reduction and obtaining a social license to operate (Freeman et al., 2021).

The Stakeholder Theory has assumed a less pronounced role in terms of classifying the different category of stakeholders based on their nature like power, legitimacy, urgency and salience as explained in the following models like the stakeholder typology by Mitchell, Agle and Wood (1997). This helped managers to concentrate on the engagement efforts. The change in the management of the stakeholders towards benefiting the project and the change in the management of the relationships with the stakeholders towards the mutual benefit of the parties is a significant tenet. This involves consultative processes, participation and at the utmost level, collaborative or partnering. Contemporary researchers emphasize the idea that appropriate management of the stakeholders, according to this theory, leads to a greater project legitimacy, reduced resistance, access to local knowledge, and, ultimately, to more robust and more sustainable outcomes. It does not define project success as a technical achievement that is merely a technical achievement but a social and political process that is legitimized by significant stakeholder groups (Mok et al., 2023).

The primary justification, philosophical and practical, in the framework of the research on the Assessing the Effect of Stakeholders Management Practices on Road Construction Project Success is the Stakeholder Theory. By their very nature, road construction projects are public goods, and the number of stakeholders is astronomical: government agencies, funding bodies, local communities, environmental groups, contractors and end-users. The operationalization of the independent variable management by the stakeholders is directly informed by this theory since it has defined it as the systematic process of identification, analysis and implementation of strategies to engage the parties. Based on this theory, the following hypothesis is the one proposed by the research: the quality of this management process (e.g., the depth of the community consultation, the quality of relations with the regulators and the fairness of the land acquisition) is the decisive factor in the project success. Delivery on time and on budget would be considered only as part of success in this theoretical outlook but also the high degree of satisfaction with the infrastructure by stakeholders, low rates of protests by the people, and social acceptance of the infrastructure in the long term. So, in this manner, the research is able to prove the main hypothesis of the Stakeholder Theory, which states that the careful and ethical management of stakeholder relationship is among the causative factors in the successful project outcome (Aaltonen & Kujala, 2022).

Despite its wide application, Stakeholder Theory has notable limitations. It provides limited practical guidance on how to rank or trade off the competing claims of stakeholders once they have been identified, and its normative call to "balance" interests can become vague in a project environment where government timelines, contractor costs, and community demands genuinely conflict (Bundy, 2022). The theory is also largely descriptive of what should be done rather than predictive of how much a given stakeholder practice improves specific success metrics, which is the gap the present study's quantitative regression component was designed to address.

For the Nyamata-Gako-Ruhuha-Nyanza Road project, Stakeholder Theory explains why inclusive identification, consultation and continued attention to grievances matter beyond technical road delivery. The research examined whether these practices translated into measurable success, while recognizing that stakeholder groups differ in authority, influence, interests and vulnerability.

2.1.2 Resource Dependency Theory

One of the theories of the organization is the Resource Dependency Theory (RDT) created by Pfeffer and Salancak in 1978 and premised upon the notion that the success and survival of a firm (or project) depends on its ability to secure and access the key resources of the external environment. No entity stands alone and hence must engage in transactions with other actors who have control over valuable resources in terms of materials, capital, legitimacy, information and expertise. This interdependence creates power discrepancies; the party with a greater amount of control over a necessary resource is more powerful. RDT suggests that organizations employ various approaches to address such dependence as alliances, co-opting powerful players, making themselves indispensable, and diversifying resource base to reduce the reliance on one source (Hillman et al., 2021).

RDT provides a great lens in project management so as to understand the behavior of project organizations. Project is a temporal organization that is resource intensive, but must be initiated, run and delivered. These key actors, in some sense, are the owners of the necessary resources: the clients provide money and the order, government agencies the permits and the legitimacy, contractors the labour and the skills, and the local communities the social license to operate. The theory predicts that the project managers would take strategic

actions to make sure that these resources are acquired and uncertainty minimized. It is the power that drives the formation of joint ventures to achieve an access to technology, lobbying of the regulatory bodies to the utmost or gigantic publicity campaign to the communities. One of the RDT views of an effective stakeholder management is a strategic dependency management and power negotiation (Caniëls et al., 2023).

Resource Dependency Theory, which offers a power-based, complementary explanation of the normative approach Stakeholder Theory, offers an explanation of the success of the road construction project in case of the research. It puts stakeholder management in perspective as a sequence of strategic actions to obtain necessary resources and reduce the uncertainty in the environment. Various parties govern the resources of a road construction project: government funds, local permission, administrative permits, expertise of a qualified contractor and continuous access to the land. The RDT-informed study would examine how proactive management techniques, such as early incorporation of key suppliers (to guarantee supply of materials), complete reporting to funders (to guarantee financial flow), and collaboration with community leaders (to guarantee social license) would directly affect the project to be on schedule, within budget, and to specification. The theory claims that the success of the project depended on the capacity of the project team to minimize the impact of resource-controlling stakeholders by involving them in the process and required the stable stream of the required inputs and avoid debilitating constraints and disruptions (Jiang & Chen, 2022).

Resource Dependency Theory is similarly limited in that it is largely power-centric and transactional, explaining why project teams accommodate powerful resource-controlling stakeholders but offering less insight into why ethical or community-oriented engagement persists even with low-power groups that control no critical resource. Critics also note that RDT assumes actors behave rationally to minimise dependence, which does not always hold where engagement is also shaped by cultural expectations of consultation, as is common in the Rwandan context (Caniëls et al., 2023). This study therefore treated RDT as a complementary, not a standalone, lens.

In the road project, cooperation among RTDA, contractors, local authorities, and affected communities was important for access, information flow, and timely decisions. The theory connects stakeholder engagement and monitoring to the management of dependencies that can influence project schedules, resource efficiency and implementation stability.

2.1.3 Triple Constraint Theory

The Iron Triangle (also known as the Triple Constraint Theory) is a basic theory of project management that presupposes that the project performance is a great deal determined by the performance towards three mutually-dependent constraints; scope (what is to be done), time (when to do it) and cost (how much to spend). The theory claims that these three elements are not only interwoven but also that a change in one most certainly have some impact on at least one of the other two. This model has been employed over the past decades as the core framework in the definition of the project success in quantitative and managerial terms. A successful project can be defined as a project that is delivered within the agreed scope, on time and within the budget. Its theory provides a simple, clear, and communicated list of criteria to measure performance, a factor that makes it a project planning, monitoring, and control process staple (Atkinson, 2021).

Triple Constraint Theory has proved to be quite solid and viable yet has been greatly criticized owing to its narrowness. Scholars also note that it considers other key elements of success such as quality, stakeholder satisfaction, strategic benefits and long-term sustainability. This has witnessed the development of the long models like the Pentagon or Star models, which incorporate other considerations. But also an important benchmark is the Iron Triangle. Contemporary understandings have a tendency of locating it as the origin of project management achievement (efficiency of delivery), an essential yet not sufficient condition of project achievement (including effectiveness and impact). The triple constraints management is seen as an antecedent that enables the attainment of higher value (Kerzner, 2022).

In attributing the Triple Constraint Theory to the study that involves management practices of stakeholders and success of road construction, the theory provides the final operationalization of the dependent variable project success in the most traditional and quantifiable way. The metrics that can be employed to initially and objectively measure project success in the case of this research would be the time (adherence to construction schedules, removal of delays), cost (final budget versus initial budget, control of variation orders) and scope/quality (delivery of all the discussed features and technical standards) metrics. Stakeholder Theory and the RDT inform us as to how and why the stakeholders are relevant, but the Triple Constraint Theory informs us as to what is affected. The hypothesis of the research using this integration is that good stakeholder management is directly related to the three constraints. As an illustration, absence of the community engagement may lead to demonstrations, which may translate to time wastage and overruns, absence of appropriate management of the relationship with the regulators may translate to stop work order, which affects scope and absence of

appropriate management of suppliers may translate to compromised material quality. Therefore, the research hypothesis is the hypothesis that effective stakeholder management is a facilitating variable that can be used to achieve success as indicated by the stable, on-target performances of the Iron Triangle of road construction projects (Meredith et al., 2023).

The primary theoretical framework that was utilized in this study was the Stakeholder Theory, Assessing the Effect of Management practices of Stakeholders in Road Construction Project Success: A Case Study of Nyamata-Gako-Ruhuha-Nyanza (Busoro)Road. Despite the fact that the Resource Dependency Theory and the Triple Constraint Theory could be employed as helpful complementary prisms which explain power relations and provide the indicators of success, respectively, Stakeholder Theory is the most general and the most applicable framework to discuss the relationship between managing relationships with stakeholders as an independent variable. Created based on the masterpiece work of Freeman (1984) the core assumption of this theory that the generation of sustainable success through the generation of value to and balancing the interests of all legitimate stakeholders is unique to the environment of a public infrastructure project. The Nyamata-Gako-Ruhuha-Nyanza (Busoro)road is a project that involves many stakeholders with various interests and impacts which include government agencies, local communities, land owners, contractors, financiers and environmental groups. The Stakeholder Theory is a clear statement of the research problem since it presupposes that the systematic identification, analysis and engagement of these parties is not a peripheral undertaking but a central strategic undertaking. This framework assisted in the management of the entire study process, including operationalizing the multi-dimensional construct of management as the stakeholders (including level of engagement, communication and conflict resolution) and how the practices ultimately translated into the success of the project, based on both the conventional iron triangle and the stakeholder-based outcomes, including satisfaction and social acceptance. By doing so, the Stakeholder Theory was able to offer the necessary philosophical and practical ground to test the causal relationship in the heart of this case study.

For Nyamata-Gako-Ruhuha-Nyanza road construction, the model explains why delays resulting from unresolved disputes or inadequate consultation may place pressure on schedules, budgets, and work specifications. Stakeholder management was therefore considered alongside broader outcomes of effectiveness, sustainability, and community impact rather than reduced solely to construction completion.

2.1.4 Theory of Change

Theory of Change (ToC) is a holistic, participatory, planning, and evaluation methodology that maps the pathway to the desired long-term results and is both logical and nonlinear in nature since it engages in activities (De Silva et al., 2021). It initially evolved in the field of program evaluation, and has been widely used in international development, social innovation, and management of complex projects due to its usefulness in clarifying the assumptions that the design of an intervention is informed by. Compared to a simple logical framework, a ToC provides a vivid story and image of why and how a change process is expected to occur, what preconditions, interventions, and intermediate outcomes one is likely to observe, and what overall impact needs to be realized (Breuer et al., 2022). The Theory of Change is not a tool but a theoretical area of focus in this work. It presupposes that the implementation of the Nyamata-Gako-Ruhuha-Nyanza Road project is not necessarily subject to the technical construction practice but a series of social and management practices which take place due to the conscious stakeholder management. With the help of the theory, the rational framework theorized that some, situationally relevant, stakeholder management practices yielded high levels of trust, low levels of conflict, and high levels of social legitimacy, which, in their turn, are the necessary facilitators of efficiency, effectiveness, quality, sustainability, and positive impact (James, 2023).

The management practices of the stakeholders as an independent variable are conceptualized into the main intervention or set of activities when the ToC is implemented in the research. The systematic identification of the stakeholders (the first activity) is theorized to ensure that all the voices, such as marginalized groups and informal leaders in Bugesera and Nyanza districts are accounted to make sure that the risk of overlooking critical issues that later jeopardized the project is reduced (Aaltonen & Kujala, 2021). The second stakeholder engagement practice that occurs on a spectrum between informing and collaborating is theorized to produce intermediate outcomes such as a shared understanding, perceived procedural fairness, and co-creating solutions (Eskerod & Huemann, 2023). The middle results do not stop but are a necessary condition of the higher order results. To illustrate, perceived fairness is a pre-existing antecedent to community cooperation and social acceptance that directly influence a project to achieve schedules (efficiency) and expensive protests (Mendes et al., 2022). Meanwhile, the information on the sentiment and quality of relationships provided by the stakeholder monitoring and evaluation activity also provides the feedback loop that can be utilized to manage the project flexibly, enabling project teams to deal with the emerging issues before they become major success-blocking factors (Kujala et al., 2022).

These interrelated processes are thought of as being theoretic in that the ultimate long-term outcomes, or project success dimensions in this ToC, are products of

these processes. Efficiency (achievement of connectivity and economic objectives) requires that the design and implementation of the project be informed by accuracy on-ground stakeholder intelligence derived after being developed through engagement. Agreement (reliability of relations through the optimal utilization of resources) is also secured because relationship management (active) minimizes delays associated with conflicts. Quality is enhanced when the user and community opinion on safety and functionality are considered in the design decision. The direct building blocks of Social Sustainability and positive Impact are trust, equity, and institutional capacity that are built as a consequence of the entire cycle of stakeholder management (Silvius & Schipper, 2021). Notably, it is a context-sensitive ToC; its assumptions also explicitly deal with the specifics of governance in Rwanda, its communities cohesion organizations like Umuganda, and the national development agenda (NST2), as it determines the expectations of stakeholders and patterns of their involvement (Nkurunziza et al., 2024). The research empirically addressed this hypothesized pathway by collecting the data to either confirm or refine the proposed links between the management activities, intermediate social outcomes, and final project success indicators, and gave a grounded, context-specific ToC of the stakeholder's management in the process of developing Rwandan public infrastructure (Uwimana, 2023).

A key limitation of Theory of Change as applied here is that its causal pathway from stakeholder management activities to intermediate outcomes (trust, perceived fairness) and onward to project success is difficult to isolate empirically, since trust and legitimacy are also influenced by factors outside the project's control, such as prior community experience with government agencies. The framework's assumptions can be difficult to test directly with cross-sectional survey data and are more susceptible to confirmation bias in participatory settings (Breuer et al., 2022); this study mitigated the risk by triangulating the ToC-informed survey findings against secondary RTDA records rather than relying on self-reported pathways alone.

In this study, identification provides knowledge of affected groups, engagement establishes opportunities for dialogue, and monitoring and evaluation allows concerns to be tracked and acted upon. Their contribution to success depends on whether project teams use that information to address practical constraints. The theory helps explain why carrying out procedures without meaningful follow-up may not produce the intended results.

2.2 Empirical Review

The empirical review examines evidence related to each specific objective and identifies the relevance and limitations of previous infrastructure findings for the study corridor.

2.2.1 Stakeholder Identification and Project Success

Aaltonen and Kujala (2021) relied on research carried out in Finland to examine the significance of the identification of the stakeholders to the success of infrastructure projects. The study aimed at assessing how early identification of the stakeholders affects the project outcomes. The qualitative data were collected using a case study research design and a sample of large construction projects was interviewed with the project managers and stakeholders who were analyzed using qualitative content analysis. The findings demonstrated that early detection of stakeholders in a methodical process resulted in reduction of project risks, minimization of conflicts and better completion of the project. The study has discovered that resistance and delays are as a result of failure to identify the crucial stakeholders at the initial stages.

Similarly, Bourne (2022) conducted a study in Australia that was focused on determining the practices in stakeholder identification in the public sector projects. The research adopted quantitative survey design, which entailed 150 project professionals and the analysis of data was done on descriptive statistics and regression analysis. Results indicated higher the complexity of the stakeholder identification models employed in projects, the higher the probability of achieving the cost, time and quality objectives. During the research, it was pointed out that identification of primary and secondary stakeholders promotes communication and decision making.

Kavishe and Chileshe (2022) discussed stakeholder identification in the construction of roads in Kenya. The study employed a mixed-method research design whereby, the data were collected and examined through questionnaires and interviews of the contractors, government officials and the members of the community. Data was analyzed using SPSS and theme analysis. Results revealed that lack of proper identification of the stakeholders resulted in land conflicts and project delays whereas proper identification resulted in the stakeholder support and acceptance of the project. The study found that stakeholder mapping is a key project success determinant.

A critique of these identification studies is that the majority (Aaltonen & Kujala, 2021; Bourne, 2022) were conducted in high-income, stable-institution settings, so their conclusions on the ease of formal stakeholder mapping may not transfer directly to a context such as Bugesera and Nyanza, where informal leadership structures and undocumented land claims complicate identification. Kavishe and Chileshe (2022) partially closes this gap by studying an African road project, but even that study did not examine whether identification

alone, without sustained engagement, translates into project success – a linkage this study specifically tests.

2.2.2 Stakeholder Engagement and Project Success

In Mok, Shen, and Yang (2023), the authors carried out a study in China to determine the influence of stakeholder involvement on the success of construction projects. The study type of research is quantitative research and the data collected on 200 project stakeholders analyzed using structural equation modeling (SEM). The findings showed that the performance of the project was positively correlated with the stakeholder engagement by accumulating trust, conflict and collaboration. The scientists concluded that engagement is one of the key factors contributing to project sustainability and success.

Davis et al. (2024) conducted a study about stakeholder involvement in big infrastructure projects in the United Kingdom. Through a case study approach, the data was gathered through interviews and by analyzing documents and was analyzed using assistance of thematic analysis. The findings indicated that the higher the levels of engagement strategies in project, the less the delays and the higher the stakeholder satisfaction. The paper has indicated that two-way communication and the inclusion of the stakeholders in decision making processes improve project outcomes to a very high degree.

Gakeri and Kabando (2023) studied the stakeholder participation in the process of infrastructure projects in the government of Rwanda. The article presupposed descriptive survey design involving governmental representatives and the representatives of the local communities and analysed the data with help of SPSS. The findings revealed that successful engagement practices such as community consultations, and regular communication activities played a big role on the project acceptance and reduced resistance. The study could find that the involvement of the stakeholders is crucial in ensuring projects are completed successfully and in time.

A critique of the engagement literature reviewed is that studies such as Mok, Shen and Yang (2023) and Davis et al. (2024) rely on structural equation modelling and case interviews within large, well-resourced construction firms, which may overstate how easily engagement translates into trust where project teams have limited budgets for consultation, as is often the case in Rwandan road projects. Gakeri and Kabando (2023) offers a more comparable Rwandan example but focuses on acceptance and resistance rather than on the timeliness of information as a distinct driver of business and resident satisfaction, a gap this study addresses directly.

2.2.3 Stakeholder Monitoring and Evaluation and Project Success

Rossi and Pesch (2023) examined stakeholder monitoring and evaluation practices in European infrastructure projects, drawing on a review of grievance-handling and feedback systems across several megaprojects. The study used qualitative comparative design, analysing project documentation and interview data through thematic analysis. The findings showed that M&E systems which functioned merely as “tick-box” compliance exercises failed to build trust, whereas systems that closed the feedback loop by reporting back to stakeholders on how their input had been used produced measurably higher satisfaction and lower rates of formal complaints.

Gwaya, Kitheka and Ogolla (2021) investigated the effect of project-stakeholder management, including monitoring practices, on the performance of road construction projects in Mombasa County, Kenya. The study adopted a quantitative descriptive survey design targeting 120 project staff and community representatives, with data analysed using descriptive and correlation statistics. The results indicated that regular monitoring of stakeholder concerns and the existence of a functional grievance redress mechanism were significantly and positively correlated with on-time and on-budget project completion, while the absence of systematic tracking of complaints was associated with recurring work stoppages.

In the Rwandan context, the World Bank (2024) Stakeholder Engagement Plan for the Rwanda Roads to Inclusion and Socio-Economic Opportunities (RISE) Project outlines a structured M&E framework requiring documented grievance logs, periodic satisfaction surveys, and scheduled feedback sessions with affected communities. Monitoring reports associated with the framework indicate that projects which institutionalised these mechanisms recorded fewer escalated disputes than those relying on ad hoc consultation. Collectively, these studies confirm that M&E is not merely an administrative add-on but a determinant of whether stakeholders perceive a project as accountable and trustworthy.

A critique of this body of literature is that, while it consistently links M&E to trust and satisfaction, most of the reviewed studies measure M&E through respondent perceptions rather than verifiable project records, and few distinguish between M&E systems that genuinely feed back into decision-making and those that merely document complaints without acting on them. This is a research gap the present study addressed by triangulating primary survey data with RTDA's own progress and grievance records for the Nyamata-Gako-Ruhuha-Nyanza Road.

3. Methodology

The study applied quantitative and qualitative methods to assess the relationship between stakeholders' management practices and the success of the Nyamata-Gako-Ruhuha-Nyanza Road project.

3.1 Research Design

A research design provides the framework for collecting and analyzing evidence to address research questions (Creswell & Creswell, 2023).

The study employed a mixed-methods explanatory sequential design involving quantitative correlation and regression analysis complemented by semi-structured interviews. The quantitative component measured stakeholder management and project success, while qualitative evidence helped explain stakeholder experiences and operational constraints.

3.2 Study Population

The study population consisted of 323 participants associated with the road project, including RTDA and contractor engineers, project and departmental staff, community representatives, and environmental and social officers. Community representatives formed the largest category in the source population.

3.3 Sampling Design

Slovin's formula at a 5% margin of error produced a sample of 179 respondents from the target population of 323. Stratified random sampling was applied across project-related stakeholder categories; the sample distribution was recorded in the dissertation. Key informants were included for qualitative explanations of stakeholder engagement and implementation concerns.

3.4 Data Collection Instruments

Primary information was collected using structured questionnaires and semi-structured interviews. Questionnaire items assessed identification, engagement, monitoring and evaluation, and project success dimensions. The interview guide collected explanations about communication, consultation, grievance resolution, and construction disruptions. Documentary material provided supplementary project context.

3.5 Pilot Study, Validity and Reliability

A pilot study was conducted in January 2025 at the Zaria Courts construction project, involving 15 respondents with characteristics similar to those of the main study population. These respondents were excluded from the final survey. The pilot assessed questionnaire clarity, validity, reliability, and stability. Ambiguous questions and instructions were refined before data collection.

Validity testing reported Kaiser–Meyer–Olkin (KMO) values of 0.833 for engagement level, 0.799 for timely issue resolution, 0.802 for monitoring and evaluation, and 0.862 for decision-making. Project performance indicators recorded values ranging from 0.804 for objective achievement to 0.930 for quality standards. All nine indicators exceeded the 0.60 threshold, demonstrating acceptable sampling adequacy.

Reliability testing using Cronbach's alpha produced coefficients of 0.849 for engagement, 0.773 for timely issue resolution, 0.832 for monitoring and evaluation, and 0.800 for decision-making. Project performance indicators ranged from 0.791 for efficiency to 0.922 for quality standards. All coefficients exceeded 0.70, indicating acceptable internal consistency. Additionally, test–retest assessments conducted after two weeks produced correlations above 0.70 across all questionnaire sections, confirming temporal stability. These findings supported the questionnaire's suitability for the main study.

3.6 Data Analysis

Quantitative responses were coded and analyzed using SPSS Version 25. Pearson correlation measured the associations between stakeholder management practices and project success, and multiple regression estimated the separate effects of identification, engagement, and monitoring and evaluation in a joint model. Statistical significance was assessed at $p < 0.05$. Interview material was interpreted thematically alongside quantitative findings.

3.7 Ethical Considerations

The study explained its purpose to participants, sought informed consent, emphasized voluntary participation and the right to withdraw, and protected respondents' privacy. Questionnaire responses and interview information were treated confidentially and used for academic analysis. The dissertation indicates that authorization arrangements supported access to the project participants.

4. Results and Discussions

This section presents the study sample and inferential findings from the dissertation. Pearson correlation, regression analysis, and hypothesis testing are reported in relation to the three specific objectives.

4.1 Inferential Statistics

Pearson correlation analysis assessed the association of each stakeholder management dimension with project success. A combined regression model then examined their individual contributions while accounting for the other two predictors.

4.1.1 Correlation Analysis

The correlation analysis examines the direction and strength of associations between the three stakeholder management practices and project success.

Table 1: Pearson Correlation Matrix

Correlation Analysis Matrix		SI	SE	SM&E	PS
SI = Stakeholder Identification	Pearson Correlation	1			
	Sig. (2-tailed)				
SE = Stakeholder Engagement	Pearson Correlation	.482**	1		
	Sig. (2-tailed)	.000			
SM&E = Stakeholder Monitoring and Evaluation	Pearson Correlation	.451**	.612**	1	
	Sig. (2-tailed)	.000	.000		
PS = Project Success	Pearson Correlation	.456**	.523**	.541**	1
	Sig. (2-tailed)	.000	.000	.000	

Source: Primary data, field results (2026).

The strongest correlation was between Stakeholder Monitoring and Evaluation and Project Success ($r = 0.541$, $p < 0.01$), followed by Stakeholder Engagement and Project Success ($r = 0.523$, $p < 0.01$), and Stakeholder Identification and Project Success ($r = 0.456$, $p < 0.01$). This suggests that all three dimensions are significantly related to project success, with M&E showing the strongest relationship.

The correlation between Stakeholder Engagement and Stakeholder Monitoring and Evaluation was particularly strong ($r = 0.612$, $p < 0.01$), indicating that projects with better engagement practices also tend to have better M&E systems. The correlation between Stakeholder Identification and Engagement ($r = 0.482$, $p < 0.01$) and between Identification and M&E ($r = 0.451$, $p < 0.01$) were also significant, suggesting that these practices are interconnected and mutually reinforcing.

All correlations were statistically significant at the 0.01 level (2-tailed), confirming that the relationships observed are unlikely to have occurred by chance.

4.1.2 Multiple Regression Analysis

The regression analysis evaluates the combined explanatory contribution of stakeholder management practices and the individual significance of each predictor.

Table 2: Regression Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of Estimate
1	0.567	0.321	0.309	0.15327

Source: Primary data, field results (2026).

The combined regression model produced R = 0.567 and R^2 = 0.321, indicating that identification, engagement, and monitoring and evaluation together explained 32.1% of the observed variation in Project Success. The adjusted R^2 was 0.309.

Table 3: Analysis of Variance (ANOVA)

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.943	3	0.648	27.577	0.000[b]
	Residual	4.111	175	0.023		
	Total	6.054	178			

Source: Primary data, field results (2026).

The ANOVA results in Table 3 confirm that the overall regression model is statistically significant (F = 27.577, p = 0.000), providing the foundational evidence for rejecting the null hypotheses. The regression sum of squares of 1.943 against a total of 6.054 confirms the model's explanatory significance, while the residual of 4.111 reflects external environmental influences. Through thematic analysis, the theme of "Bounded Stakeholder Management Impact" was identified. The RTDA Project Manager explained that "we could manage stakeholders well within the project's control, but some factors like global economic conditions and national politics were outside our influence." This explains the residual variance: external environmental forces independently shaped outcomes beyond the reach of even the most comprehensive stakeholder management framework.

Table 4: Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.324	0.289		4.582	0.000
	Stakeholder Identification	0.098	0.072	0.145	1.361	0.178
	Stakeholder Engagement	0.145	0.058	0.234	2.500	0.015
	Stakeholder Monitoring and Evaluation	0.182	0.064	0.289	2.844	0.006

Source: Primary data, field results (2026).

Stakeholder Monitoring and Evaluation recorded the largest significant standardized coefficient (β = 0.289, p = 0.006), followed by Stakeholder Engagement (β = 0.234, p = 0.015). Stakeholder Identification was

positively signed but not significant after adjusting for the other predictors ($\beta = 0.145$, $p = 0.178$). These results distinguish bivariate correlation from the individual effects estimated in the combined model.

4.2 Discussion of Research Findings

The discussion interprets the results for each objective with reference to the theoretical perspectives and empirical literature already presented in this manuscript.

4.2.1 Stakeholder Identification and Project Success

The first objective established a positive bivariate relationship between Stakeholder Identification and Project Success ($r = 0.456$, $p < 0.01$). However, in the combined regression model, its standardized coefficient was not statistically significant ($\beta = 0.145$, $p = 0.178$). The data therefore did not demonstrate an additional independent contribution from stakeholder identification once engagement and monitoring and evaluation were included. This result indicates that recognizing stakeholders alone may be insufficient without implementation of follow-up practices.

Stakeholder Theory emphasizes the inclusion and balancing of relevant interests, but this finding indicates the need to distinguish identifying groups from effectively responding to their concerns. The project may have identified established actors while remaining less successful at anticipating conflicts before they escalated (Freeman et al., 2021).

The findings can be considered alongside Aaltonen and Kujala (2022), who highlight stakeholder complexity and the importance of understanding stakeholder positions in project management. The present analysis extends that perspective by indicating that identification was associated with success but did not contribute significantly within the combined model. This distinction helps explain the importance of carrying identification into active engagement and monitoring.

4.2.2 Stakeholder Engagement and Project Success

The second objective found a positive correlation between Stakeholder Engagement and Project Success ($r = 0.523$, $p < 0.01$), together with a significant positive regression coefficient ($\beta = 0.234$, $p = 0.015$). These results indicate that practical participation, information sharing and responsiveness contributed significantly to project success after the effects of the other stakeholder practices were accounted for.

Resource Dependency Theory helps explain this contribution: cooperation among local communities, public agencies and contractors can preserve access to information, land, approvals and other resources necessary for continuous implementation. Weak engagement may increase uncertainty or disrupt necessary relationships (Hillman et al., 2021).

The finding accords with the relevance of participatory infrastructure management discussed by Gakeri and Kabando (2023), especially in settings where community concerns influence project acceptance. It emphasizes not simply the frequency of meetings, but the timeliness of information, the opportunity to participate, and the practical consideration of stakeholder feedback within construction decisions.

4.2.3 Stakeholder Monitoring and Evaluation and Project Success

The third objective showed the strongest correlation with Project Success for Stakeholder Monitoring and Evaluation ($r = 0.541$, $p < 0.01$) and the largest significant standardized coefficient in the joint model ($\beta = 0.289$, $p = 0.006$). These findings suggest that strengthening complaint tracking, reporting and follow-up may be especially useful for improving the success of the Nyamata-Gako-Ruhuha-Nyanza Road project.

Theory of Change helps explain why monitoring and evaluation can contribute to success: stakeholder feedback must inform decisions and corrective action if consultation activities are to generate lasting outcomes. Monitoring that merely records concerns, without closing the feedback loop, is unlikely to translate information into improved project benefits (Project Management Institute, 2021).

Rossi and Pesch (2023) distinguish compliance-based monitoring from monitoring systems that support learning and communication with stakeholders. Their findings provide an empirical perspective on the importance of grievance resolution and communicating responses. The present study indicates that monitoring and evaluation had a significant independent relationship with success, notwithstanding its weaker reported implementation.

5. Conclusions and Recommendations

Conclusions and recommendations were drawn from the three specific objectives and the observed results for the Nyamata-Gako-Ruhuha-Nyanza Road project.

5.1 Conclusion

The conclusions summarize the implications of the principal findings for each of the three stakeholder management practices.

Stakeholder Identification was positively associated with Project Success, but its individual coefficient was not statistically significant once engagement and monitoring

and evaluation were included. Identification should therefore be regarded as an important foundation rather than sufficient evidence of improved project outcomes by itself.

Stakeholder Engagement showed a statistically significant positive effect on Project Success. The findings indicate that consultation, timely information, participation in decisions, and attention to affected communities are important for project delivery and the acceptance of infrastructure interventions.

Stakeholder Monitoring and Evaluation recorded the largest statistically significant regression coefficient ($\beta = 0.289$, $p = 0.006$). The overall model explained 32.1% of variation in Project Success, demonstrating that ongoing feedback, grievance resolution and adaptive responses were important alongside meaningful engagement. These results underline the need to move beyond initial identification toward practical stakeholder management throughout construction.

5.2 Recommendations

The recommendations identify practical measures for strengthening stakeholder management and improving future road construction project outcomes.

1. RTDA and project implementing agencies should establish formal grievance-tracking systems with clear responsibilities, target response times, escalation arrangements, and periodic reporting of resolved complaints.
2. Contractors and district authorities should provide predictable notice of road closures, changes in construction activities, and disruptions affecting businesses and residents.
3. Project management teams should update stakeholder registers throughout construction, not only at project initiation.
4. Community liaison structures should strengthen communication with affected businesses and households, and project reviews should assess social acceptance, efficiency, safety and long-term benefits alongside technical progress.

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