



Influence of Stakeholder Engagement Dynamics on Project Performance: Evidence from SUNCASA Project in Kigali

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Abstract: Despite advances in project management frameworks, urban development projects, particularly multi-stakeholder nature-based initiatives, continue to experience challenges related to coordination, implementation efficiency, and stakeholder responsiveness, resulting in suboptimal project performance. These persistent challenges highlight the need to better understand how stakeholder engagement practices contribute to successful project implementation. This study examined the influence of stakeholder engagement dynamics on project performance in the SUNCASA Project in Kigali City. The study adopted a quantitative, explanatory cross-sectional case study design involving 135 stakeholders. Primary data were collected using a structured questionnaire based on a five-point Likert scale. Data were analyzed using descriptive statistics, Pearson correlation analysis, and multiple linear regression. The findings revealed that stakeholder engagement practices jointly explained 60.4% of the variation in project performance ($R^2 = 0.604$, $p < 0.001$). Stakeholder feedback integration emerged as the strongest predictor of project performance ($\beta = 0.354$, $p < 0.001$), followed by stakeholder participation and stakeholder communication, all of which exerted statistically significant positive effects. Conversely, stakeholder consultation exhibited a positive but statistically insignificant influence ($\beta = 0.144$, $p = 0.091$), suggesting that consultation alone does not directly enhance project performance unless stakeholder inputs are translated into implementation decisions. The study concludes that effective stakeholder engagement enhances project performance primarily through collaborative decision-making, adaptive management, and systematic integration of stakeholder feedback. It recommends institutionalizing participatory governance and formal stakeholder feedback management systems to strengthen the implementation and sustainability of urban resilience and nature-based projects in Rwanda.

Keywords: Stakeholder Engagement Dynamics, Stakeholder Communication, Stakeholder Participation, Stakeholder Consultation, Stakeholder Feedback Integration, Project Performance

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1. Introduction

Infrastructure and urban development projects are progressively moving toward sustainability-oriented and multi-stakeholder models, particularly with the implementation of nature-based solutions (NbS) to address climate risks, environmental degradation, and urban resilience issues. In this context, projects like SUNCASA (Scaling Urban Nature-Based Solutions for Climate Adaptation in Sub-Saharan Africa) reflect a

global shift away from traditional infrastructure delivery and toward integrated ecosystem-based planning approaches that combine climate adaptation, biodiversity conservation, and social inclusion (United Nations Environment Programme [UNEP], 2021; World Bank, 2022).

The SUNCASA Project in Kigali City aims to improve resilience to climate-induced flooding, landslides, and water-related risks by implementing NbS interventions such as afforestation, agroforestry, reforestation, buffer

zone restoration, and urban tree planting in Kicukiro, Nyarugenge, and Gasabo districts (SUNCASA, 2024). These initiatives are intrinsically challenging and require coordinated effort from a variety of stakeholders, including government institutions, international implementing partners, technical specialists, civil society organizations, and local communities. As a result, stakeholder engagement has emerged as a critical predictor of project implementation effectiveness and long-term viability.

Despite the rising use of modern project management methodologies and the growing awareness of stakeholder participation as an essential component of project governance, attaining consistent project performance remains a difficulty in infrastructure and urban development programs. Cost constraints, implementation delays, coordination failures, and challenges in reaching desired project outcomes continue to hamper development projects in a variety of institutional contexts. Recent development research suggests that these issues cannot be handled only through technical planning, financial management, and implementation processes; they are also dependent on the quality of collaboration and relationships among project delivery players (World Bank, 2023). This shows that stakeholder engagement should be viewed as a project-management tool that allows information, participation, consultation, and stakeholder input to impact implementation choices and project results.

In Rwanda, substantial attention has been given to participatory governance, coordinated development planning, and multi-actor implementation. Nevertheless, the presence of formal governance and participation mechanisms does not by itself establish how stakeholder engagement affects performance at the individual project level. This is particularly relevant for complex urban development interventions, where implementation requires coordination among public institutions, development partners, technical actors, civil society organizations, and local communities. The analytical issue, therefore, is whether and to what extent specific stakeholder-engagement practices are associated with project performance within an actual project setting.

This issue is particularly relevant to the SUNCASA Project in Kigali City, which brings together government institutions, international implementing partners, technical and environmental experts, civil society organizations, and community representatives. Such a multi-stakeholder structure makes effective information exchange, participation in decisions, structured consultation, and integration of stakeholder feedback important components of project implementation. Accordingly, this study operationalizes stakeholder engagement into four practices: stakeholder communication, stakeholder participation, stakeholder consultation, and stakeholder feedback integration, and examines their relationship with project performance,

measured through dimensions including timely implementation, adherence to approved budgets and resource plans, quality of outputs, implementation efficiency, and achievement of intended project objectives.

The specific empirical gap is that, despite the policy and practical emphasis placed on stakeholder engagement, there is limited project-level evidence in Rwanda showing whether these four engagement practices are individually and jointly associated with project performance in an urban nature-based development intervention. Existing policy commitments therefore do not provide sufficient empirical evidence about the mechanisms through which stakeholder engagement operates within a specific project. This study addresses that gap by examining the influence of stakeholder communication, participation, consultation, and feedback integration on project performance in the SUNCASA Project in Kigali City.

1.1 General Objective

The general objective of this study is to examine the influence of stakeholder engagement dynamics on project performance in the SUNCASA Project in Kigali City.

1.2 Specific Objectives

The study is guided by the following specific objectives:

1. To examine the influence of stakeholder communication on project performance in the SUNCASA Project in Kigali City.
2. To assess the effect of stakeholder participation on project performance in the SUNCASA Project in Kigali City.
3. To determine the influence of stakeholder consultation on project performance in the SUNCASA Project in Kigali City.
4. To evaluate the effect of stakeholder feedback integration on project performance in the SUNCASA Project in Kigali City.

2. Literature Review

This section summarizes the theoretical and empirical literature on stakeholder participation and project performance in development initiatives. It examines how stakeholder processes influence project outcomes in complex, multi-actor settings such as urban development and nature-based initiatives, and reviews evidence at international, regional and local levels.

2.1 Theoretical Review

This section covers the basic theoretical foundations for the study of stakeholder involvement and project performance. It applies stakeholder theory, communication theory, and project governance theory to explain how stakeholder-related processes like communication, participation, consultation, and feedback integration affect coordination, decision-making, and overall project outcomes in complex development projects.

2.1.1 Stakeholder Theory

Stakeholder Theory, created by R. Edward Freeman (1984), holds that organizations and projects are not isolated technological systems, but rather complex networks of connections including various actors who can influence or be influenced by project results. Within project environments, this theory shifts the emphasis away from solely technical success criteria (such as time, cost, and scope) and toward relational dynamics among stakeholders, whose interests, expectations, and influence greatly affect project performance results. The key idea is that in order to achieve long-term project success, competent management must balance the varied stakeholder interests.

In the context of this study, Stakeholder Theory provides the principal theoretical foundation for examining how stakeholder engagement practices influence project performance within the SUNCASA Project in Kigali City. The theory directly informs the study's key constructs by explaining why stakeholder communication (SCP), stakeholder participation (SPP), stakeholder consultation (SCP2), and stakeholder feedback integration (SFIP) are critical mechanisms through which diverse stakeholder interests are managed and aligned during project implementation. It further supports the proposition that effective balancing of stakeholder power, legitimacy, and urgency enhances coordination, reduces conflicts, and improves decision-making processes, which collectively contribute to improved project performance (PP) in terms of cost efficiency, timelines, quality of outputs, and stakeholder satisfaction.

2.1.2 Project Governance Theory

Project Governance Theory discusses how responsibility, decision-making structures, and control mechanisms are established and executed to ensure that projects achieve their goals efficiently. According to Human Resource Management in Project-Based Organizations, project governance is the set of rules, roles, and processes that regulate how project choices are made, monitored, and enforced throughout the project's lifecycle. Unlike traditional project management, which is primarily concerned with execution efficiency,

governance theory prioritizes institutional coordination, accountability frameworks, and stakeholder alignment.

In the context of this study, Project Governance Theory provides a framework for understanding how formal structures, roles, and decision-making processes influence stakeholder engagement practices within the SUNCASA Project in Kigali City. The theory supports the view that governance mechanisms shape stakeholder communication (SCP), participation (SPP), consultation (SCP2), and feedback integration (SFIP) through defined accountability and coordination systems, which in turn affect project performance (PP). However, the theory does not sufficiently explain how governance structures translate into measurable performance outcomes in complex, multi-stakeholder urban projects such as SUNCASA. This limitation justifies the need for empirical analysis to examine how governance arrangements interact with stakeholder engagement practices to influence project performance outcomes at the project level.

2.1.3 Communication Theory in Project Management

Communication Theory by Shannon and Weaver (1949) describes how information is transmitted, received, and interpreted by system actors, as well as how breakdowns in this process affect coordination, understanding, and results. The traditional Shannon-Weaver model views communication as a linear process that includes a sender, message, channel, receiver, and noise, which can distort meaning and degrade message clarity. While this model gives a basic understanding of communication flow, it has been heavily criticized for oversimplifying communication as a one-way transmission process rather than capturing the interactive and iterative nature of communication in complex organizational settings.

In the context of this study, Communication Theory provides the basis for examining how information exchange processes influence stakeholder engagement and project performance within the SUNCASA project in Kigali City. The theory supports the analysis of stakeholder communication (SCP) as a key mechanism through which coordination, clarity, and decision-making are enhanced among project actors, thereby contributing to improved project performance (PP). However, Communication Theory alone does not adequately explain how communication interacts with other engagement dimensions such as participation, consultation, and feedback integration to produce measurable project outcomes. This limitation justifies the need for empirical investigation to assess the combined effect of communication and other stakeholder engagement practices on project performance at the project implementation level.

2.1.4 Systems Theory

Systems Theory, originally advanced by Ludwig von Bertalanffy, views an organization or project as an integrated system composed of interdependent components that interact to achieve common objectives. The theory posits that the effectiveness of a system depends not only on the performance of its individual components but also on the quality of the relationships and interactions among them. In project management, this perspective emphasizes that project outcomes are shaped by the coordinated functioning of people, processes, resources, governance structures, and the external environment rather than by isolated technical activities. Contemporary project management literature adopts systems thinking as a fundamental principle for managing complexity, uncertainty, and stakeholder interdependence in projects (Project Management Institute [PMI], 2021; Kerzner, 2017).

In the context of this study, Systems Theory provides a holistic framework for understanding the SUNCASA Project as an interconnected system in which multiple stakeholders, government agencies, implementing partners, technical experts, and community actors continuously interact and influence project outcomes. The theory supports the view that stakeholder communication, participation, consultation, and feedback integration function as interdependent processes that enhance coordination, learning, and adaptive decision-making, thereby improving project performance (PP). However, Systems Theory does not specify the relative contribution of each stakeholder engagement dimension to project outcomes. This limitation justifies empirical analysis to determine how individual and combined stakeholder engagement practices influence project performance within the SUNCASA Project in Kigali City.

2.2 Empirical Review

This section reviews empirical studies on the relationship between stakeholder engagement and project performance. The review is organized around the four dimensions of stakeholder engagement examined in this study: stakeholder communication, stakeholder participation, stakeholder consultation, and stakeholder feedback integration. Evidence is drawn from international, African, East African, and Rwandan contexts, with emphasis on the research designs, findings, and limitations of previous studies. The section ends by identifying the empirical and contextual gaps that justify examining stakeholder engagement dynamics and project performance in the SUNCASA Project in Kigali City.

2.2.1 Stakeholder Communication and Project Performance

Similarly, Chen et al. (2023) investigated multi-stakeholder participation in engineering-procurement-construction projects and identified information communication and coordination among stakeholders as key factors affecting participation in design optimization. Their findings show that communication-related factors interact with organizational and technical conditions in shaping stakeholder involvement.

The existing evidence therefore establishes the importance of communication but leaves several issues unresolved. First, much empirical literature treats communication as one component of broader stakeholder management and does not isolate communication frequency, clarity, information-sharing mechanisms, and communication effectiveness as distinct dimensions. Second, most African and Rwandan evidence concerns conventional construction, infrastructure, or social-development projects, so little is known about how stakeholder communication operates in complex urban nature-based solution projects that involve government institutions, development partners, technical actors, and communities. This study addresses this contextual and measurement gap by examining stakeholder communication as a distinct dimension of stakeholder engagement in the SUNCASA Project in Kigali City.

2.2.2 Stakeholder Participation and Project Performance

Empirical research has consistently examined stakeholder participation as a mechanism through which stakeholders influence project decisions, implementation, monitoring, and outcomes. At the international level, Chen et al. (2023) investigated the factors influencing multi-stakeholder participation in design optimization in engineering-procurement-construction projects. Using DEMATEL and interpretive structural modelling, they identified subcontractor participation during design, design-management capacity, performance-evaluation mechanisms, and other stakeholder-related factors as important determinants of participation. The study is particularly relevant because it shows that participation is not simply the presence of stakeholders in a project but involves their active contribution to project processes. Nevertheless, its focus on design optimization leaves open whether similar dynamics influence broader measures of project performance during implementation.

Empirical literature therefore supports the importance of stakeholder participation but reveals three limitations. First, participation is often operationalized broadly, without distinguishing between participation in planning, implementation, decision-making, and monitoring. Second, many studies focus on conventional infrastructure or agricultural projects. Third, little

evidence exists on sustained stakeholder participation across the implementation lifecycle of urban nature-based solution projects. This study addresses these limitations by treating stakeholder participation as a distinct explanatory variable and relating it directly to project performance in the SUNCASA Project in Kigali City.

2.2.3 Stakeholder Consultation and Project Performance

Similarly, the Organisation for Economic Co-operation and Development (OECD, 2021) concluded that consultation contributes to project effectiveness when it supports adaptive management and organizational learning, while the PMI (2021) emphasizes that stakeholder consultation generates value only when stakeholder inputs are integrated into project governance and decision-making throughout the project life cycle.

Overall, the reviewed studies indicate that consultation is relevant to project implementation and performance, but important questions remain. Existing studies commonly measure consultation as part of a broader engagement construct and provide limited evidence on whether consultation is merely undertaken or whether stakeholder views are inclusive, responsive, timely, and influential in project decisions. Moreover, little empirical work has examined consultation in multi-actor urban nature-based solution projects in Rwanda. This study therefore treats stakeholder consultation as a distinct explanatory variable and examines its relationship with project performance in the SUNCASA Project.

2.2.4 Stakeholder Feedback Integration and Project Performance

Stakeholder feedback integration is a more specific dimension of engagement because it concerns what project managers do with information received from stakeholders after communication, participation, or consultation has taken place. Empirical research increasingly recognizes that collecting stakeholder views does not necessarily improve project outcomes unless those views are analyzed and incorporated into project decisions.

The reviewed evidence therefore suggests that stakeholder feedback can contribute to project responsiveness and performance, but the literature has not sufficiently separated feedback collection from feedback integration. Many studies treat feedback as an element of communication, consultation, monitoring, or general stakeholder engagement. As a result, there is limited evidence on whether the extent to which feedback is analyzed, incorporated into decisions, and translated into project adjustments independently influences project performance. This is an important empirical and measurement gap. The present study addresses it by treating stakeholder feedback integration

as a distinct explanatory variable and examining its relationship with project performance in the SUNCASA Project in Kigali City.

3. Methodology

This chapter discusses the methodology framework used to investigate the influence of stakeholder engagement dynamics on project performance at the SUNCASA Project in Kigali City. It details the research strategy, design, data collection methods, and analytical methodologies used to meet the study's objectives. The chapter also describes the study population, variable measurements, and processes for verifying validity, reliability, and ethical compliance, giving a formal foundation for empirical analysis.

3.1 Research Design

This study used a descriptive-explanatory research design to investigate the influence of stakeholder engagement dynamics on project performance at the SUNCASA Project in Kigali City. The descriptive component was used to systematically describe the current state of stakeholder engagement practices, specifically communication, participation, consultation, and feedback integration, as perceived by project implementation actors. This is especially important in the SUNCASA context because structured activities like community mobilization, consultation forums, and collaboration among implementing partners provide visible engagement practices that can be scientifically analyzed. Descriptive research designs are appropriate for accurately representing events in their natural context (Creswell & Creswell, 2018).

The study used a cross-sectional research approach, with data collected from respondents at a specific point in time via a standardized questionnaire. Cross-sectional designs are commonly employed in social science research to investigate interactions between variables over a specific time period (Bryman, 2016). This technique is appropriate given that the study collects stakeholder perspectives throughout the SUNCASA Project's active implementation phase (2024), when important engagement activities and performance outcomes may be seen concurrently.

3.2 Study Population

Based on this structured stakeholder mapping, the study established an operational population of 135 respondents who are directly involved in or have considerable involvement with stakeholder engagement procedures inside the SUNCASA Project. This population size is deemed adequate since it includes all key categories of actors participating in decision-making, implementation, consultation, and feedback processes, while staying manageable for thorough data gathering.

Given the population's small, well-defined, and accessible size, the study used a census approach in which all 135 specified stakeholders were engaged in the data gathering process. The census approach was useful in this situation because it removes sampling error, improves representativeness, and ensures that all stakeholder opinions at the institutional, technical, and community levels are captured. This is especially relevant for this study since stakeholder engagement techniques are relational and context-dependent, necessitating full coverage rather than partial depiction.

3.3 Sampling Design

To ensure analytical clarity and consistency with the questionnaire design (Section A: Respondent Profile), the population is divided into five stakeholder groups that mirror the functional structure of the SUNCASA Project. This classification ensures that the sample frame, data gathering instrument, and analytical techniques all match.

3.4 Data Collection Instrument

The major data collection tool for this study was a structured questionnaire that is directly aligned with the study objectives, hypotheses, and study variables (Creswell & Creswell, 2018). The questionnaire was designed expressly to gather stakeholder feedback on engagement strategies and project performance within the framework of the SUNCASA Project. The instrument was divided into five divisions, in accordance with the study variables and analytical framework (Appendix). All items were scored on a five-point Likert scale from 1 (Strongly Disagree) to 5 (Strongly Agree), allowing for quantitative analysis of stakeholder views and statistical testing of correlations between factors. Each questionnaire item was explicitly related to a specific indicator of the independent or dependent variables, ensuring uniformity in conceptualization, measurement, and analysis.

3.5 Pilot Study, Validity and Reliability

To ensure the research instrument's clarity, reliability, and validity, a pilot test was undertaken on a subset of respondents chosen among stakeholders with comparable characteristics to the study population but not included in the final dataset. The pilot sample typically represents about 10% of the target population, which provides adequate feedback for instrument improvement. The pilot testing procedure seeks to identify ambiguous or unclear questions, assess the relevance of items, evaluate the questionnaire's structure and flow, and estimate the time required for completion. Feedback from the pilot study was used to adjust phrasing, improve clarity, and ensure that all items captured the intended constructs.

Reliability refers to the degree to which a research instrument consistently measures the constructs it is intended to measure. A pilot study was conducted before the main data collection to assess the clarity, relevance, reliability, and suitability of the research questionnaire. The pilot study was conducted at Rwanda Green Fund (FONERWA), Kigali City, which was selected because its institutional and project environment is comparable to that of the SUNCASA Project. In particular, the institution operates within the broader green development and climate-related project environment and involves interactions among government institutions, development partners, technical actors, and other stakeholders. This provided an appropriate setting for pre-testing an instrument designed to measure stakeholder communication, participation, consultation, feedback integration, and project performance.

The pilot respondents (25) were selected from individuals with experience in project-related activities and stakeholder engagement comparable to the characteristics of the SUNCASA Project respondents. The pilot study was used to identify ambiguous statements, assess understanding of the questionnaire items, and determine whether the items adequately represented the study variables. The instrument was subsequently refined based on observations obtained during the pilot exercise.

The reliability of the questionnaire was assessed using Cronbach's alpha for stakeholder communication, stakeholder participation, stakeholder consultation, stakeholder feedback integration and project performance. All constructs recorded coefficients above the recommended threshold of 0.70, ranging from 0.834 to 0.891, while the overall reliability coefficient was 0.862. These results indicated acceptable internal consistency for the main study.

3.6 Data Analysis

Descriptive statistics were used to summarize responses across the study variables. Means and standard deviations described stakeholder communication, participation, consultation, feedback integration and project performance. Diagnostic tests assessed regression assumptions, including residual normality and multicollinearity of the independent variables, before interpretation of the inferential results.

3.6.1 Inferential Statistical Analysis

Pearson correlation analysis was used to determine the strength and direction of the relationships between each independent variable and project performance. Multiple linear regression then estimated the combined and individual effects of stakeholder communication, stakeholder participation, stakeholder consultation and stakeholder feedback integration on project performance. The regression approach allowed the relative

contribution of each predictor to be examined while controlling for the other variables in the model.

3.6.2 Hypothesis Testing

The study employed regression outputs to test four null hypotheses (H_{01} – H_{04}). Each hypothesis was evaluated at a 5% level of significance ($\alpha = 0.05$). A null hypothesis was rejected when the corresponding p-value was below 0.05; otherwise, it was not rejected. The findings were presented in statistical tables accompanied by interpretations of model fit, coefficients and significance levels.

3.7 Ethical Considerations

This study adhered to acknowledged ethical criteria for academic research, including honesty, integrity, confidentiality, non-discrimination and participant safety throughout its implementation as part of the SUNCASA Project in Kigali City. Before administering the questionnaire, the researcher explained the study's purpose to participants and obtained their consent. The

dignity of respondents and their freedom to answer or decline individual questions were respected.

4. Results and Discussion

This section presents and discusses the findings on the influence of stakeholder engagement practices on project performance in the SUNCASA Project in Kigali City. It begins with the response rate, then presents correlation and multiple regression analyses to examine the direction, strength and statistical significance of the relationships among the study variables. The findings are discussed in relation to the four objectives, theoretical foundations and empirical literature.

4.1 Response Rate

The response rate indicates the proportion of questionnaires successfully completed and returned by the targeted respondents. A high response rate enhances the reliability and representativeness of the study findings by minimizing the likelihood of non-response bias.

Table 1: Response Rate

Questionnaires	Frequency	Percentage (%)
Distributed	135	100
Returned	135	100
Not Returned	0	0

Source: Field Survey Data (2026).

As shown in Table 1, all 135 questionnaires administered to the selected respondents were successfully completed and returned, yielding a 100% response rate. This exceptionally high response rate indicates complete participation by the targeted stakeholders and provides a robust basis for subsequent statistical analyses. It also enhances the credibility, reliability, and representativeness of the study findings, as the analysis reflects the views of the entire sampled population.

4.2 Inferential Statistics

This section presents the regression analysis conducted to examine the relationship between stakeholder

engagement practices and project performance in the SUNCASA Project. Specifically, it summarizes the results of the Pearson correlation analysis, which assesses the strength and direction of the relationships among the study variables; the model summary, which evaluates the explanatory power of the regression model; and the multiple regression analysis, which determines the individual effect and statistical significance of stakeholder communication, stakeholder consultation, and stakeholder participation practices on project performance. Collectively, these analyses provide empirical evidence on the extent to which stakeholder engagement practices predict project performance and form the basis for testing the study hypotheses.

4.2.1 Correlation Analysis

Table 2: Correlation Results

		SC	SP	SCC	SFI	PP
SC	Pearson Correlation	1	.601**	.596**	.635**	.622**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	135	135	135	135	135
SP	Pearson Correlation	.601**	1	.650**	.657**	.658**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	135	135	135	135	135
SCC	Pearson Correlation	.596**	.650**	1	.706**	.646**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	135	135	135	135	135

SFI	Pearson Correlation	.635**	.657**	.706**	1	.716**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	135	135	135	135	135
PP	Pearson Correlation	.622**	.658**	.646**	.716**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	135	135	135	135	135

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

Source: Field Survey Data (2026).

The correlation analysis reveals that all stakeholder engagement practices are positively and statistically significantly associated with project performance at the 1% significance level ($p < 0.001$). This indicates that improvements in stakeholder engagement practices are consistently associated with improvements in project performance.

Among the four stakeholder engagement dimensions, stakeholder feedback integration (SFI) exhibits the strongest positive relationship with project performance ($r = 0.716$, $p < 0.001$), suggesting that projects which systematically incorporate stakeholder feedback into implementation decisions tend to achieve superior performance outcomes. This relationship is considered strong, implying that adaptive project management plays a critical role in enhancing implementation effectiveness. This is followed by stakeholder participation (SP) ($r = 0.658$, $p < 0.001$), indicating that greater stakeholder involvement in planning, implementation, and decision-making is associated with higher project performance. Stakeholder consultation (SCC) also demonstrates a strong positive relationship with project performance ($r = 0.646$, $p < 0.001$), while stakeholder communication (SC) records a similarly positive and statistically significant association ($r = 0.622$, $p < 0.001$).

The analysis further shows significant positive correlations among the independent variables themselves, ranging from 0.596 to 0.706. The strongest interrelationship occurs between stakeholder consultation and stakeholder feedback integration ($r = 0.706$, $p < 0.001$), indicating that projects characterized by effective consultation are also likely to integrate stakeholder feedback more systematically. Since none of the intercorrelations exceed the commonly accepted multicollinearity threshold of 0.80 (Hair et al., 2022), the results suggest that each stakeholder engagement dimension measures a related but conceptually distinct aspect of stakeholder engagement and can therefore be included simultaneously in the regression analysis.

4.2.2 Regression Analysis

Table 3 presents the model summary for the regression analysis examining the influence of stakeholder engagement practices on project performance. The model includes stakeholder consultation (SC), stakeholder participation (SP), stakeholder communication and coordination (SCC), and stakeholder feedback integration (SFI) as predictors of project performance (PP). The table presents the regression model statistics, including R, R Square, adjusted R Square, and the standard error of the estimate.

Table 3: Model Summary Results

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.777 ^a	.604	.592	.30388

a. Predictors: (Constant), SFI, SC, SP, SCC

Source: Field Survey Data (2026).

The model produced a multiple correlation coefficient of $R = 0.777$, indicating a strong positive linear relationship between the combined stakeholder engagement practices and project performance. This suggests that improvements in stakeholder engagement are strongly associated with improvements in overall project performance.

The coefficient of determination ($R^2 = 0.604$) indicates that 60.4% of the variation in project performance is jointly explained by stakeholder communication, stakeholder participation, stakeholder consultation, and stakeholder feedback integration. This represents

substantial explanatory power, demonstrating that stakeholder engagement practices are major determinants of project performance within the SUNCASA Project.

After adjusting for the number of predictors included in the model, the Adjusted R^2 decreases only marginally to 0.592, indicating that the explanatory power of the model remains robust and is not artificially inflated by the inclusion of multiple independent variables. The small difference between R^2 (60.4%) and Adjusted R^2 (59.2%) confirms that each predictor contributes meaningful explanatory information and that the regression model is stable. The Standard Error of the Estimate (0.30388) is

relatively low, suggesting that the predicted values of project performance closely approximate the observed values. This indicates good predictive accuracy and strengthens confidence in the regression model.

The statistical significance of the overall regression model was examined through the analysis of variance.

Table 4: ANOVA Results

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	18.332	4	4.583	49.630	.000 ^a
	Residual	12.005	130	.092		
	Total	30.337	134			

a. Predictors: (Constant), SFI, SC, SP, SCC
b. Dependent Variable: PP

Source: Field Survey Data (2026).

The ANOVA findings show that the multiple regression model is statistically significant ($F(4,130)=49.630$, $p<.001$). This finding implies that the stakeholder engagement variables—stakeholder communication, stakeholder involvement, stakeholder consultation, and stakeholder feedback integration, all provide statistically significant explanatory power for variances in project performance. The null hypothesis, that all four slope coefficients are simultaneously zero, is thus rejected.

The regression sum of squares was 18.332, vs a residual sum of squares of 12.005. This suggests that the model accounts for a significant amount of the observed variance in project performance compared to the unexplained variation. However, the ANOVA result should be viewed as evidence of the regression model's

overall statistical significance, rather than as confirmation that each individual predictor is significant or that the study is legitimate in all ways.

Nonetheless, the independent impact of each stakeholder engagement dimension must be evaluated using the regression coefficients and significance levels shown in the next section. The ANOVA result confirms the model's overall relevance; nevertheless, it does not establish the importance of stakeholder communication, engagement, consultation, or feedback integration.

Individual coefficients were then examined to determine the contribution of each stakeholder engagement practice.

Table 5: Multiple Regression Coefficients

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	T	Sig.
1	(Constant)	.067	.282		.238	.812
	SC	.194	.085	.175	2.286	.024
	SP	.238	.085	.227	2.821	.006
	SCC	.164	.096	.144	1.703	.091
	SFI	.388	.096	.354	4.048	.000

a. Dependent Variable: PP

Source: Field Survey Data (2026).

Table 5 presents the regression coefficients showing the individual contribution of stakeholder communication (SC), stakeholder participation (SP), stakeholder consultation (SCC), and stakeholder feedback integration (SFI) to project performance (PP) after controlling for the influence of the other stakeholder engagement variables.

The regression results demonstrate that three of the four stakeholder engagement practices exert statistically significant positive effects on project performance, while one variable does not make a statistically significant independent contribution after accounting for the effects of the other predictors.

Specifically, stakeholder feedback integration (SFI) exerts the strongest influence on project performance ($\beta = 0.354$, $t = 4.048$, $p < 0.001$). This indicates that a one-standard-deviation improvement in stakeholder feedback integration is associated with a 0.354 standard deviation increase in project performance, holding all other variables constant. This makes feedback integration the most influential determinant of project performance in the SUNCASA Project.

The second strongest predictor is stakeholder participation (SP) ($\beta = 0.227$, $t = 2.821$, $p = 0.006$), indicating that greater stakeholder involvement in planning, implementation, and decision-making significantly enhances project performance. Similarly,

stakeholder communication (SC) has a positive and statistically significant effect ($\beta = 0.175$, $t = 2.286$, $p = 0.024$), implying that improvements in communication among project actors contribute significantly to better project implementation.

In contrast, stakeholder consultation (SCC) exhibits a positive coefficient ($\beta = 0.144$) but fails to achieve statistical significance ($t = 1.703$, $p = 0.091$). Although consultation is positively associated with project performance, its independent contribution is not sufficiently strong after controlling communication, participation, and feedback integration. Consequently, consultation does not emerge as an independent predictor of project performance within the SUNCASA Project. These findings indicate that stakeholder communication, stakeholder participation, and stakeholder feedback integration significantly influence project performance, whereas stakeholder consultation does not independently

explain project performance after accounting for the other stakeholder engagement practices.

The findings reveal that not all stakeholder engagement practices contribute equally to project performance. While consultation is valuable for obtaining stakeholder views, the results suggest that projects derive measurable performance benefits primarily when consultation is translated into active participation and systematic integration of stakeholder feedback.

4.3 Decision on Null Hypotheses

Table 6 presents the summary of hypothesis testing results examining the effect of stakeholder engagement practices on project performance in the SUNCASA Project. The table shows the standardized coefficients (β), t-values, p-values, and decisions made for each hypothesis based on the regression results.

Table 6: Summary of Hypothesis Testing Results

Hypothesis	Hypothesis Statement	B	t-value	p-value	Decision
H ₀₁	Stakeholder communication have no significant effect on project performance in the SUNCASA Project.	0.175	2.286	0.024	Rejected
H ₀₂	Stakeholder participation have no significant effect on project performance in the SUNCASA Project.	0.227	2.821	0.006	Rejected
H ₀₃	Stakeholder consultation have no significant effect on project performance in the SUNCASA Project.	0.144	1.703	0.091	Failed to Reject
H ₀₄	Stakeholder feedback integration have no significant effect on project performance in the SUNCASA Project.	0.354	4.048	0.000	Rejected

Source: Field Data (2026).

The hypothesis testing results demonstrate that three of the four stakeholder engagement practices significantly influence project performance in the SUNCASA Project. Specifically, stakeholder communication ($\beta = 0.175$, $p = 0.024$), stakeholder participation ($\beta = 0.227$, $p = 0.006$), and stakeholder feedback integration ($\beta = 0.354$, $p < 0.001$) exert statistically significant positive effects on project performance, leading to the rejection of H₀₁, H₀₂, and H₀₄. Among all predictors, stakeholder feedback integration emerged as the strongest determinant, indicating that projects achieve the greatest performance improvements when stakeholder views are systematically incorporated into implementation decisions rather than merely collected.

Conversely, stakeholder consultation did not exert a statistically significant independent effect ($\beta = 0.144$, $p = 0.091$), and therefore H₀₃ failed to be rejected. This finding suggests that consultation alone is insufficient to improve project performance unless it results in meaningful stakeholder participation and effective integration of stakeholder feedback into project decisions.

4.4 Discussion of Research Findings

The findings are discussed according to the four study objectives and related to theoretical and empirical literature.

4.4.1 Stakeholder Communication and Project Performance

The first objective examined the influence of stakeholder communication dynamics/practices on project performance in the SUNCASA Project. The regression results revealed that stakeholder communication exerts a positive and statistically significant influence on project performance ($\beta = 0.175$, $p = 0.024$), leading to the rejection of the first null hypothesis. This finding demonstrates that effective information sharing, transparent reporting channels, and consistent communication among implementing partners contribute significantly to improved project implementation.

This perspective is congruent with Communication Theory, which sees successful information flow as a means for actors to build mutual understanding and coordinate their actions. The significant positive

correlation thus lends empirical credence to the idea that communication promotes coordination and collaborative action in complex project situations. It also supports Stakeholder Theory since good communication allows project managers to identify and address the interests and information needs of various stakeholder groups. Thus, the discovery is more than just a statistical relationship; it indicates how the theoretical mechanisms of information flow, stakeholder response, and coordination may be translated into better project performance.

These findings are in agreement with previous empirical studies. The Project Management Institute (2021) concluded that projects characterized by structured stakeholder communication consistently record higher implementation success than projects with fragmented communication systems. Similarly, the World Bank (2023) reported that effective communication significantly improves institutional coordination, transparency, and project implementation outcomes in complex development projects. The findings further support Communication Theory, which argues that efficient information exchange improves organizational coordination and collective action. Likewise, they reinforce Stakeholder Theory, which emphasizes that maintaining effective communication with stakeholders contributes directly to successful project delivery.

4.4.2 Stakeholder Participation and Project Performance

The second objective assessed the effect of stakeholder participation practices on project performance. The regression analysis established that stakeholder participation has a positive and statistically significant influence on project performance ($\beta = 0.227$, $p = 0.006$). Consequently, the second null hypothesis was rejected.

The findings indicate that involving stakeholders in planning, implementation, monitoring, and project decision-making enhances ownership, accountability, institutional commitment, and collective responsibility for project outcomes. Active participation allows stakeholders to contribute local knowledge, technical expertise, and practical experience, thereby improving implementation quality while strengthening acceptance of project interventions.

The findings strongly support Stakeholder Theory, which argues that organizations achieve superior performance when stakeholders actively participate in organizational decision-making. They also reinforce Project Governance Theory, which views participation as a governance mechanism that enhances accountability and collaborative implementation. More specifically, the significant positive relationship observed in this study provides empirical support for Stakeholder Theory's proposition that recognizing and incorporating stakeholder interests can improve organizational and

project outcomes. It also gives practical meaning to Project Governance Theory by showing that participation is not simply a procedural requirement but a governance mechanism through which stakeholders contribute information, accountability, and collective responsibility to project implementation.

Similarly, the African Development Bank (2024) reported that projects characterized by inclusive stakeholder participation exhibit stronger implementation performance and institutional coordination across African development programmes.

4.4.3 Stakeholder Consultation and Project Performance

The third objective determined the influence of stakeholder consultation practices on project performance. Although stakeholder consultation exhibited a positive coefficient, its influence was not statistically significant ($\beta = 0.144$, $p = 0.091$). Therefore, the third null hypothesis failed to be rejected.

This finding suggests that consultation meetings, institutional forums, and stakeholder dialogue, while important for information exchange and consensus building, do not independently improve project performance once communication, participation, and feedback integration are taken into account. In practical terms, consultation alone appears insufficient to produce measurable improvements unless the outcomes of consultation are translated into concrete implementation decisions and operational adjustments.

Recent studies on adaptive project governance have increasingly argued that consultation should be viewed as an enabling process rather than a direct determinant of project success. The SUNCASA findings therefore contribute new empirical evidence by distinguishing consultation from stakeholder influence, demonstrating that holding consultation meetings is fundamentally different from acting upon the information generated through those consultations.

Similarly, the Organisation for Economic Co-operation and Development (OECD, 2021) concluded that consultation contributes to project effectiveness when it supports adaptive management and organizational learning, while the PMI (2021) emphasizes that stakeholder consultation generates value only when stakeholder inputs are integrated into project governance and decision-making throughout the project life cycle.

4.4.4 Stakeholder Feedback Integration and Project Performance

The fourth objective evaluated the effect of stakeholder feedback integration practices on project performance. The regression results established that stakeholder feedback integration exerts the strongest positive and

statistically significant influence on project performance ($\beta = 0.354$, $p < 0.001$). Accordingly, the fourth null hypothesis was rejected.

The findings indicate that projects derive their greatest performance improvements not simply from engaging stakeholders but from converting stakeholder knowledge into management decisions. Feedback integration enhances adaptive management, improves implementation responsiveness, minimizes implementation errors, and strengthens institutional learning throughout the project lifecycle.

These findings are in strong agreement with recent empirical research. The PMI (2021) reported that adaptive stakeholder management and continuous stakeholder feedback are among the strongest predictors of successful project delivery. Similarly, the World Bank (2023) found that projects characterized by systematic feedback integration consistently outperform projects relying solely on consultation mechanisms. The findings also agree with the African Development Bank (2024), which concluded that adaptive governance systems capable of incorporating stakeholder feedback significantly improve implementation efficiency, accountability, and project sustainability across development programmes.

5. Conclusion and Recommendations

The study conclusions and recommendations are organized according to stakeholder communication, participation, consultation and feedback integration.

5.1 Conclusions

For Objective One, the study concludes that stakeholder communication constitutes a fundamental pillar of successful project implementation. Transparent information sharing, effective reporting systems, and continuous communication among project actors significantly improve coordination, implementation efficiency, and overall project performance. Communication therefore represents a strategic governance function rather than merely an administrative activity.

For the objective two, the study concludes that stakeholder participation significantly enhances project performance by increasing ownership, accountability, institutional commitment, and collaborative implementation. Projects that actively involve stakeholders throughout the project lifecycle are more likely to achieve their intended objectives than projects characterized by passive stakeholder involvement.

For objective three, the study concludes that stakeholder consultation alone does not guarantee improved project performance. While consultation remains essential for

inclusive governance and stakeholder legitimacy, its contribution depends upon whether consultation outcomes influence project decisions. Consultation therefore functions primarily as an enabling governance mechanism whose effectiveness depends upon implementation responsiveness.

For objective four, the study concludes that stakeholder feedback integration represents the most critical determinant of project performance. Projects generate the greatest implementation improvements when stakeholder concerns, monitoring findings, and implementation experiences are systematically incorporated into project decisions. Adaptive governance therefore constitutes the principal mechanism through which stakeholder engagement improves project outcomes.

5.2 Recommendations

This section presents recommendations derived from the findings and conclusions of the study. The recommendations are organized according to the four broad research objectives, ensuring direct alignment between each objective, the corresponding empirical finding, and the recommended action.

1. The City of Kigali, implementing partners, and development agencies should institutionalize integrated communication systems that facilitate timely information sharing, transparent reporting, and continuous coordination among stakeholders.
2. Stakeholders should be involved in project identification, planning, implementation, monitoring, and evaluation, with appropriate opportunities to contribute to project decision-making. Participation should therefore move beyond attendance at project meetings and provide stakeholders with meaningful opportunities to contribute knowledge, experience, priorities, and decisions.
3. Consultation outcomes should be systematically documented, reviewed, and communicated to project decision-makers, with clear mechanisms for determining which stakeholder concerns require action. The emphasis should therefore be placed on the quality and usefulness of consultation rather than simply increasing the number of consultation meetings.
4. Project managers should also ensure that relevant stakeholder feedback is incorporated into project planning, implementation, monitoring, and evaluation processes. This would strengthen adaptive management, responsiveness, and continuous improvement throughout the project lifecycle.

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