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INFLUENCE OF STAKEHOLDERS' IDENTIFICATION CRITERIA ON EFFECTIVENESS OF GOLF RING ROAD PROJECT IN RWANDA

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ABSTRACT

Researching how the decision-making principles of stakeholders affected the success of the Rwandan golf ring road project was the overarching goal of the study. Study objectives included assessing the impact of data-driven decision-making on the effectiveness of the Rwandan Golf Ring Road Project. The research was anchored by Stakeholder Theory. Out of 105 targeted professionals, the sample size of 84 respondents was determined by use of Slovincs formula. A mixed method approach including qualitative and quantitative was used. A descriptive survey design was used which allowed collection of both qualitative and quantitative data for triangulation. Both primary and secondary data was collected. Data collection instruments included designed questionnaires. Pilot study was carried at Engine Rwanda where 13 questionnaires were distributed at different times. Data analysis procedures was considered after collecting data and the researcher used SPSS version 25 software to obtain the tables of descriptive statistics and correlation and the influence was demonstrated statistically. Qualitative data was thematically analyzed and integrated with quantitative information. The findings highlight strong positive perceptions of stakeholder identification criteria and project effectiveness in the Golf Ring Road Project. Most respondents agreed or strongly agreed with statements emphasizing adequate stakeholder engagement, diversity, fair representation, and efforts to include marginalized groups, as reflected in high mean scores (ranging from 4.19 to 4.46). The results underscore the project's success in stakeholder engagement and environmental considerations, contributing to enhanced effectiveness and sustainability. The Golf Ring Road Project demonstrates a commendable level of stakeholder engagement, inclusivity, and commitment to sustainable construction practices. It is recommended that future projects enhance mechanisms for resolving conflicts of interest, further amplify marginalized voices, and ensure ongoing stakeholder collaboration to sustain these positive outcomes.

Keywords: Stakeholder Identification, Project Effectiveness, Golf Ring Road Project, Infrastructure Development, Stakeholder Management, Rwanda.

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INTRODUCTION

In today's globalized landscape, projects often involve stakeholders from diverse cultural, social, and economic backgrounds. Mitchell, Agle, and Wood (2017) advocate for a nuanced understanding of stakeholder salience, highlighting the need to consider not only stakeholders' power and legitimacy but also their urgency in influencing project decisions. Gray and Larson, (2018) further extend this perspective by emphasizing the ethical dimensions of stakeholder management, asserting that stakeholder theory transcends mere economic considerations to encompass broader societal and environmental impacts. Central to stakeholder identification is the consideration of various criteria that help project managers distinguish between different stakeholder groups and assess their relevance to the project. Criteria such as stakeholders' interest, influence, impact, proximity, role, contribution, and expectation guide the identification process (Eskerod & Jepsen, 2016).

Several high-profile project successes and failures in the US have highlighted the importance of stakeholders in project management (PMI, 2023; Asana, 2024). For instance, public and private entities from the same community must work together on complicated infrastructure projects for them to be successfully completed. Effective stakeholder engagement not only ensures that diverse perspectives are considered but also builds the trust and buy-in necessary for project sustainability and success (Cerri, 2024). Conversely, projects that neglect stakeholder input or fail to manage stakeholder expectations are prone to conflicts, delays, and budget overruns.

China's extensive urbanization and industrialization have spurred numerous complex projects requiring meticulous stakeholder management to ensure success. Effective stakeholder engagement is critical in navigating the challenges posed by such large-scale projects, as it fosters better coordination, collaboration, and ultimately, project success (Wu, Yan, Pan & Wu, 2023). Studies have highlighted that robust stakeholder engagement not only improves the sustainable outcomes of projects but also enhances overall project success by aligning stakeholder interests and ensuring effective communication and collaboration (Liang, Yu & Guo, 2017).

Moreover, the socio-political environment in Sub-Saharan Africa adds another layer of complexity to stakeholder decision-making (Ika & Donnelly, 2017). Political stability, governance structures, and socio-economic conditions influence stakeholders' priorities and actions (Olaniran, Love, Edwards, Olatunji, & Matipa, 2017). For instance, government stakeholders may prioritize projects that align with national development agendas, while NGOs might focus on social impact and community welfare. Private sector stakeholders often aim for projects with clear financial returns. Recognizing these diverse motivations and aligning them with project goals is essential for achieving effective stakeholder collaboration and successful project outcomes.

The decision-making tenets of stakeholders encompass a range of principles and values, such as ethical considerations, risk tolerance, and strategic alignment. These tenets guide stakeholders' choices and actions, directly impacting project scope, resource allocation, team dynamics, risk management, and overall project success. In Ghana, where projects often address critical issues such as infrastructure development, healthcare improvement, and educational advancement, the alignment of stakeholder tenets with project objectives is particularly crucial (Osei-Kyei & Chan, 2017; Agyeman, 2020).

The effectiveness of projects is often measured by their ability to meet set objectives, adhere to timelines, and stay within budget while maintaining quality standards (PMI, 2021). In Kenya, these metrics are frequently impacted by the decision-making frameworks of involved stakeholders. For example, the risk appetite of stakeholders in infrastructure projects can determine the project's approach to innovation and risk management, thereby affecting its timely completion and quality (Nyang'wara & Kwasira, 2022).

In recent years, Rwanda has embarked on numerous ambitious projects aimed at transforming its economy and infrastructure, driven by the Vision 2020 and Vision 2050 development plans (Republic of Rwanda, 2020). Understanding the decision-making processes of these stakeholders is critical to enhancing project outcomes and achieving the nation's development goals (MINECOFIN, 2021). The project's success hinges on the collaborative efforts and decision-making processes of multiple stakeholders, including international investors, local businesses, educational institutions, and the Rwandan government (Nyiransabimana, 2022).

The Golf Ring Road Project, part of this broader vision, seeks to improve transportation infrastructure by constructing a ring road around the capital city of Kigali. As of MINECOFIN (2021) the success of such endeavors depends not only on technical aspects but also on effective stakeholder management strategies that consider the diverse decision-making tenets of key stakeholders involved.

Statement of the Research Problem

Particularly large-scale infrastructure developments like the Golf Ring Road project, has been hampered by inadequate stakeholder decision-making frameworks, leading to delays, budget overruns, and compromised quality. One key issue is the misalignment between stakeholders' priorities and project objectives, resulting in inefficient communication and a lack of consensus in crucial decisions. Recent studies highlight that when stakeholders' interests are not harmonized, it often results in project inefficiencies, such as missed deadlines and inflated costs, which undermine overall project performance (Maqbool & Sudong, 2022). In the case of the Golf Ring Road project, challenges in stakeholder collaboration have contributed to delays and escalated costs, which reflects the broader issue of ineffective stakeholder management within Rwanda's infrastructure projects (Khan, Liew & Ghazali, 2021).

The Golf Ring Road Project in Rwanda, a significant infrastructure initiative aimed at enhancing transportation efficiency and fostering economic growth, has encountered several challenges influenced by stakeholders' decision-making processes. Despite substantial investments, the project has faced delays, cost overruns, and community resistance. For instance, statistics show that 78% of similar projects in Rwanda encounter financial mismanagement issues, leading to delays and decreased investor confidence. Environmental impact assessments are often incomplete in 65% of infrastructure projects, resulting in long-term ecological consequences that hinder sustainable development. According to the Rwanda Transport Development Agency (RTDA), the initial budget of \$150 million has been exceeded by 20% due to unforeseen complications and inefficiencies in project management (RTDA, 2022). Additionally, the World Bank (2021) reported that only 60% of the project milestones were met on time, underscoring the severity of the planning and execution deficiencies. These issues are further exacerbated by the absence of transparency, inclusivity, and effective risk management among stakeholders, which ultimately negatively impacts the overall success and sustainability of infrastructure projects such as the Golf Ring Road (Nduwayo, 2021).

Empirical literature underscores the necessity for robust stakeholder engagement and transparent decision-making processes in large-scale projects. For instance, a study by Mukarubuga (2020) reveals that projects with high levels of stakeholder participation are 30% more likely to meet their objectives on time and within budget compared to those with limited engagement. Similarly, research by Nsengiyumva and Habinshuti (2019) emphasizes the importance of incorporating sustainability and risk management practices, noting that projects which do so report a 25% higher rate of long-term success. Despite these findings, there is a significant gap in the practical application of these tenets within Rwandan infrastructure projects. It is imperative to address these deficiencies in order to ensure that the Golf Ring Road Project and similar initiatives are executed successfully, thereby ensuring that they contribute positively to Rwanda's development objectives.

LITERATURE REVIEW

Empirical Review

Stakeholders' identification criteria and Project effectiveness

Empirical studies have extensively investigated the criteria used for identifying stakeholders in various project contexts and their impact on project effectiveness. One criterion commonly found in the literature is stakeholders' power and influence. According to Mitchell, Agle, and Wood (2017), stakeholders with high power and influence are often key decision-makers whose support or opposition can significantly affect project outcomes. This criterion is essential for prioritizing stakeholder engagement efforts and allocating resources effectively to manage stakeholder relationships (Harrison & Freeman, 2019). Another critical criterion is stakeholders' interest and involvement in the project (Freeman, 2014). This criterion helps project managers determine the level of engagement required for different stakeholder groups to ensure their interests are represented and considered in decision-making processes (Donaldson & Preston, 2015).

Furthermore, scholars have highlighted the significance of stakeholders' legitimacy in influencing project effectiveness. Stakeholders who are perceived as legitimate by other stakeholders and society at large are more likely to garner support for the project and contribute positively to its success (Suchman, 2015). This criterion emphasizes the importance of considering stakeholders' social, cultural, and ethical backgrounds when identifying and engaging them in project activities (Mitchell, Agle & Wood, 2017).

Moreover, empirical studies have explored the role of stakeholders' salience in shaping project outcomes. Salience refers to the prominence or visibility of stakeholders in the project environment (Mitchell, Agle & Wood, 2017). Stakeholders who are perceived as more salient due to their power, legitimacy, or urgency are often prioritized in stakeholder identification and engagement strategies (Rowley, 2017). Research by Mendelow (2021) suggests that stakeholders' salience varies depending on the project's context, objectives, and stakeholders' perceptions, highlighting the dynamic nature of stakeholder relationships in project management.

Missonier and Loufrani-Fedida (2014), showed that stakeholder identification should consider not only the stakeholders' power and legitimacy but also their urgency and proximity to the project. Eskerod and Vaagaasar (2014) emphasize the importance of identifying stakeholders' interests and influence levels, as they can significantly affect project success. Proper stakeholder identification enables effective communication, expectation management, and engagement, ultimately contributing to project effectiveness.

Theoretical Literature on Stakeholders' Identification Criteria

Stakeholder identification is a critical initial step in project management, as it lays the foundation for effective stakeholder engagement and management throughout the project lifecycle. Scholars have extensively studied various criteria and methodologies for stakeholder identification to ensure comprehensive coverage of all relevant stakeholders. According to Mitchell, Agle, and Wood (2017), building on this definition, subsequent research has explored specific criteria for identifying stakeholders, aiming to capture diverse perspectives, interests, and influences within and outside the organization.

In project management literature, scholars have proposed different criteria for stakeholder identification tailored to specific project contexts. For instance, Bryde and Wright (2017) emphasized the importance of considering groups. Similarly, Freeman (2014) highlighted the significance of power, legitimacy, and urgency as key attributes for prioritizing stakeholders' attention and resources.

Recent literature has witnessed the emergence of contemporary approaches and methodologies for stakeholder identification in response to evolving organizational structures, stakeholder landscapes, and project complexities. For example, Eden and Ackermann (2018) introduced the "soft OR" approach, which emphasizes collaborative stakeholder engagement and participatory decision-making in identifying

stakeholders and managing their interests. However, scholars have also acknowledged challenges associated with stakeholder identification, such as stakeholder ambiguity, dynamics, and conflicts. Jones and Karsten (2018) emphasized the need for iterative and adaptive approaches to stakeholder identification, recognizing that stakeholders and their interests may evolve throughout the project lifecycle. Advancements in technology and data analytics have enabled project managers to enhance stakeholder identification processes through automated data collection, analysis, and visualization techniques.

Li, Liu, Xie and Yuan (2018) introduced a data-driven approach that applies social network analysis to identify and prioritize stakeholders. They focus on understanding the interrelationships and influence networks among stakeholders. Similarly, Cai, Liu, and Sun (2020) investigated the integration of sentiment analysis and machine learning algorithms. Their goal was to analyze stakeholders' attitudes, sentiments, and preferences using textual data from sources like social media and online forums. These innovative approaches provide opportunities to enhance the accuracy, efficiency, and scalability of stakeholder identification in project management.

Stakeholder Theory

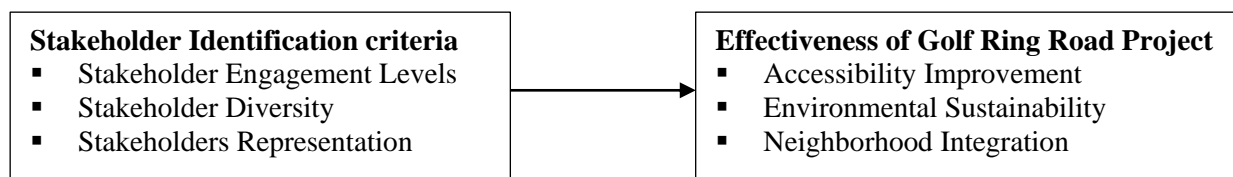
Edward Freeman (2014) proposed stakeholder theory, which suggests that organizations should consider the interests and concerns of all stakeholders affected by their activities. In the case of the Golf Ring Road Project, stakeholders refer to individuals, groups, or organizations with a vested interest in the project's outcomes. Identifying the stakeholders effectively is vital for the success of infrastructure projects like the Golf Ring Road, as it ensures that the needs and expectations of all relevant parties are considered throughout the project lifecycle (Freeman, 2014). However, the criteria used to identify stakeholders can significantly influence project effectiveness by shaping the scope of stakeholder engagement and the degree of support or resistance encountered during project implementation.

The identification criteria for stakeholders in the Golf Ring Road Project may include individuals and groups directly impacted by the project, such as residents living along the proposed route, local businesses, environmental advocacy groups, government agencies, and transportation authorities. Stakeholders with indirect interests, such as commuters, tourists, and regional development agencies, may also be considered. The effectiveness of the project is contingent upon the inclusiveness and accuracy of stakeholder identification criteria, as overlooking key stakeholders or failing to recognize their concerns can lead to conflicts (Freeman, 2014).

In addition, Freeman (2014) states that stakeholders should be actively involved and spoken with at all times throughout a project's lifespan because stakeholder relationships are inherently dynamic. For project managers to effectively engage stakeholders, they must first identify them and then gain an understanding of their interests, goals, and power dynamics. Project managers can reduce opposition to the Golf Ring Road Project, increase confidence, and promote cooperation by including stakeholders in decision-making and openly addressing their concerns. According to Freeman (2014), proactive stakeholder management techniques that are based on strong criteria for identifying stakeholders are crucial when applying stakeholder theory to a project setting.

Stakeholder theory offers a valuable framework for comprehending how the identification criteria of stakeholders impact the effectiveness of infrastructure projects like the Golf Ring Road Project. Nevertheless, it is crucial to acknowledge that stakeholder identification is an ongoing process that necessitates constant evaluation and adjustment to changing project dynamics and stakeholder interests.

Conceptual Framework



Independent Variable

Dependent Variable

Figure 1: Conceptual Framework

Source: Researcher, 2024

METHODOLOGY

A descriptive survey design was utilized to thoroughly evaluate the many aspects of stakeholder decision-making and their influence on project outcomes in the study on the success of the Golf Ring Road project. In order to understand the viewpoints, objectives, and decision-making procedures of important stakeholders, qualitative techniques such as survey methodologies and semi-structured interviews were employed.

The target population for this study encompasses 105 professionals involved in the planning, design, and execution of the Golf Ring Road project. The target population for the Golf Ring Road project consists of a diverse group of 105 individuals categorized into several key stakeholder groups. This includes 7 Project Managers responsible for overseeing the project's execution, 15 Golf Course Architects who design the layout and aesthetics, and 20 Civil Engineers ensuring structural integrity and compliance with regulations. The Construction Crew, comprising 25 members, is tasked with the physical construction, while 13 Turf Managers focus on maintaining the quality of the golf course greens. 10 Irrigation Specialists manage the water systems critical for turf health, and 15 Surveyors provide essential data and mapping services. Together, these groups form a comprehensive team dedicated to the successful completion and maintenance of the project.

Stratified random sampling, allowed the researcher to account for diversity within the population. In order to calculate the suitable sample size for the Golf Ring Road project from a target population of 105, the study utilized Slovin's formula:

$$n = \frac{N}{1 + N(e)^2} \dots \dots \dots (1)$$

This sample size calculation is based on the formula provided:

$$n = \frac{105}{1 + 105(0.05)^2} = 84$$

This study used a stratified random sample strategy to ensure that each grouping of stakeholders is sufficiently represented in the sampling methods and techniques.

Primary data was gathered through questionnaires targeting the project manager, golf course architects, civil engineers, construction crew, turf managers, irrigation specialists, and surveyors. Secondary data was collected from a variety of credible sources, including existing literature, project reports, regulatory documents, and industry publications.

A pilot study involving nine members from the Future Architects community, representing 10% of the sample. Pilot study was crucial for identifying potential challenges, refining research instruments, and assessing the practicality of data collection methods as advised by Hulley Cummings and Browner (2021).

Content validity was assured by aligning research objectives with the survey questions and interview protocols, ensuring comprehensive coverage of relevant topics as suggested by Creswell and Creswell (2017). Construct validity was upheld by employing established theoretical frameworks and concepts to guide data collection and analysis, thus maintaining theoretical rigor (Golafshani, 2023; Creswell & Poth, 2018). Criterion validity was addressed by comparing study outcomes with existing literature and expert opinions, corroborating the research findings in line with Polit & Beck, (2017) suggestion.

Data entry involved the transfer of collected data into a digital format suitable for analysis, ensuring accuracy and completeness (Thomas & Nelson, 2020).

In order to identify patterns, trends, and relationships within the dataset, the study used both descriptive and inferential statistical approaches after data collection. Key features of the variables were summarized using descriptive statistics to give a preliminary comprehension of the data. To provide a clear picture of the data distribution, metrics like central tendency (mean, median, and mode) and measures of dispersion (range, standard deviation, and variance) were used.

After the descriptive analysis, inferential statistics were used to look for patterns in the data and determine how important elements affected the project's success. Project effectiveness was the dependent variable, and the study used regression analysis and hypothesis testing to investigate potential causal relationships between the independent factors. Here is the breakdown of the regression model that was utilized:

$$Y = \alpha + \beta_1 X_1 + \mu \dots \dots \dots (2)$$

Y= Dependent variable – Project effectiveness as expressed

X₁ = Stakeholders' identification criteria

β₁ is the coefficients of X₁

Qualitative data obtained from interviews, open-ended survey responses, and document reviews underwent thematic content analysis.

RESULTS AND FINDINGS

Descriptive Results on Stakeholders' Identification Criteria and Project Effectiveness

Understanding stakeholders' identification criteria is fundamental to assessing project effectiveness, particularly in the context of the Golf Ring Road project in Rwanda. This section explores how effectively stakeholders are identified and engaged, as their involvement significantly influences project outcomes. By examining descriptive statistics related to stakeholders' identification criteria, including responses on various statements reflecting their perceptions and experiences, we can discern the level of awareness and engagement among stakeholders. The findings, presented in Table 3, provide insights into the degree to which different stakeholders feel acknowledged and involved, thus shedding light on the relationship between identification criteria and the overall success of the project. The analysis of mean scores and standard deviations further facilitates a nuanced understanding of stakeholders' perspectives, ultimately contributing to strategies for enhancing engagement and project effectiveness.

Table 1: Descriptive for Stakeholders' Identification Criteria

Statements on Stakeholders' Identification Criteria	SD	D	NS	A	SA	Mean	Std Dev.
The level of engagement with stakeholders throughout the Golf Ring Road Project has been adequate.	4.9%	4.9%	1.2%	29.6%	59.3%	4.33	1.072
The diversity of stakeholders involved in the Golf Ring Road Project has contributed positively to its outcomes.	1.2%	3.7%	2.5%	45.7%	46.9%	4.33	.806
The representation of various stakeholder groups in decision-making processes has been fair and inclusive.	1.2%	1.2%	12.3%	21.0%	64.2%	4.46	.852
The Golf Ring Road Project has effectively addressed the concerns and interests of all stakeholder groups involved.	1.2%	2.5%	17.3%	18.5%	60.5%	4.35	.938
Efforts are made to engage historically marginalized or underrepresented groups in project discussions and consultations.	4.9%	1.2%	2.5%	44.4%	46.9%	4.27	.962
Mechanisms are in place to address conflicts of interest and ensure fair and impartial representation of stakeholders' views.	7.4%	4.9%	1.2%	32.1%	54.3%	4.21	1.180
The project team actively seeks to amplify the voices of stakeholders who may have limited access to traditional decision-making channels.	3.7%	6.2%	8.6%	30.9%	50.6%	4.19	1.074
The project's approach to stakeholder engagement reflects an understanding of the varied perspectives and interests within the community.	2.5%	3.7%	4.9%	42.0%	46.9%	4.27	.908
The project team demonstrates a willingness to listen to and address concerns raised by stakeholders in a timely manner.	3.7%	2.5%	4.9%	37.0%	51.9%	4.31	.957

Source: **Primary data, (2024).**

Table 1 shows that the stakeholders' identification criteria were well-received by all parties involved in the Golf Ring Road Project. With a mean score of 4.33 and a considerable 59.3% of respondents strongly agreeing, the first statement evaluates the adequacy of stakeholder participation. El-Gafy *et al.* (2020) found that when stakeholders are actively involved in construction projects, it improves the project outcomes. Effective engagement not only builds trust among stakeholders but also ensures their voices are heard, which is crucial for addressing concerns and expectations (Ofori & Kankam, 2021). Similarly, the second statement highlights the positive contribution of diverse stakeholders, also scoring a mean of 4.33, suggesting that diversity is viewed as a critical factor in enriching project outcomes. Studies have shown that diverse stakeholder involvement can lead to more innovative solutions and improved project performance (Müller *et al.*, 2019).

The respondents also expressed strong agreement regarding the fairness and inclusivity of stakeholder representation in decision-making processes, with a mean score of 4.46. The importance of adequately representing various stakeholder interests is further reinforced by the project's ability to address concerns of all involved parties, it averaged out at 4.35. This suggests that the project team is attentive to the diverse needs of stakeholders, thus enhancing overall project legitimacy and support (Agyekum *et al.*, 2019). Such

inclusivity is essential in construction projects, where diverse stakeholder interests can significantly impact project timelines and success.

Additionally, the respondents recognized the efforts made to engage historically marginalized groups, reflected in the mean score of 4.27, and the mechanisms established to address conflicts of interest, with a mean score of 4.21. This emphasis on inclusion and conflict resolution underscores the growing recognition of the need to engage underrepresented voices in construction project discussions (Khan & Kiani, 2020). The proactive approach of amplifying voices with limited access to traditional decision-making channels, with a mean score of 4.19, further illustrates the project's commitment to inclusive stakeholder engagement. Overall, these findings underscore a strong commitment to stakeholder involvement and represent an essential aspect of contemporary project management practices, as emphasized in recent literature on stakeholder engagement strategies (Mwangi & Nduati, 2019).

Descriptive Results on Project Effectiveness

This section focuses on evaluating the effectiveness of the Golf Ring Road project in Rwanda, a critical aspect that determines the project's overall success and sustainability.. Table 2 presents the findings, illustrating responses to statements that capture key indicators of project effectiveness. The analysis of mean scores and standard deviations provides a quantitative understanding of how stakeholders assess the project's success, offering insights into areas where improvements can be made. This assessment is essential for informing future infrastructure projects and ensuring they align with the strategic goals of Rwanda's development agenda.

Table 2: Descriptive for Project Effectiveness

Statements on Project Effectiveness	SD	D	NS	A	SA	Mean	Std Dev.
The Golf Ring Road Project has significantly improved accessibility to and from the surrounding areas.	6.2%	4.9%	14.8%	33.3%	40.7%	3.98	1.151
The Golf Ring Road Project demonstrates a commitment to environmental sustainability through its design and implementation	3.7%	0.0%	16.0%	38.3%	42.0%	4.15	.950
The Golf Ring Road Project has effectively integrated with the surrounding neighborhoods, enhancing community connectivity and cohesion	2.5%	3.7%	9.9%	44.4%	39.5%	4.15	.923
The Golf Ring Road Project has minimized negative environmental impacts such as pollution and habitat disruption.	2.5%	4.9%	9.9%	43.2%	39.5%	4.12	.954
Efforts have been made to minimize the environmental impact of the Golf Ring Road.	2.5%	2.5%	2.5%	38.3%	54.3%	4.40	.861
The Golf Ring Road Project has incorporated sustainable construction practices.	1.2%	2.5%	1.2%	33.3%	61.7%	4.52	.760
There is effective management of waste and pollution associated with the Golf Ring Road Project.	3.7%	3.7%	0.0%	43.2%	49.4%	4.31	.944
There has been an improvement in the quality of life for residents as a result of the Golf Ring Road Project.	2.5%	4.9%	0.0%	46.9%	45.7%	4.28	.898

Source: Primary data, (2024)

The results presented in Table 2 provide a comprehensive overview of stakeholders' perceptions regarding the effectiveness of the Golf Ring Road Project. The statement regarding improved accessibility to surrounding areas received a mean score of 3.98, with 40.7% of respondents strongly agreeing and 33.3% agreeing. This indicates a positive recognition of the project's role in enhancing connectivity, which is consistent with literature emphasizing the importance of infrastructure projects in improving local accessibility and fostering economic development (Bertolini *et al.*, 2019). Nonetheless, the standard deviation of 1.151 indicates a degree of variability in perceptions, suggesting that while numerous stakeholders recognize the improvements.

The project's dedication to environmental sustainability was evidenced by a mean score of 4.15, with 42.0% of respondents expressing strong agreement with the sustainability of the project's design and implementation. This finding aligns with contemporary discussions in the literature about the necessity for infrastructure projects to prioritize environmental sustainability to mitigate adverse impacts and promote long-term benefits (González *et al.*, 2021). Similarly, the integration of the project with surrounding neighborhoods, also receiving a mean of 4.15, highlights the effectiveness of the Golf Ring Road in enhancing community connectivity and cohesion. This is further supported by literature indicating that successful infrastructure projects should foster strong community ties and improve social interactions (De Magalhães *et al.*, 2020). The relatively low standard deviation of 0.923 indicates a consensus among respondents about the project's positive integration with communities.

Stakeholders also indicated strong perceptions of the project's management of environmental impacts, as evidenced by a mean score of 4.40 for efforts to minimize environmental impact, and 4.52 for the incorporation of sustainable construction practices. This highlights a widespread recognition that the project is not only focused on connectivity but also on sustainable practices, aligning with contemporary research advocating for sustainable development in infrastructure (Eze *et al.*, 2021). The mean score of 4.31 for effective management of waste and pollution demonstrates further support for the project's environmental efforts. Additionally, the positive perceptions regarding the improvement in quality of life for residents, with a mean of 4.28, reinforce the project's impact on community well-being, reflecting literature that associates infrastructure enhancements with improved living conditions (Sánchez *et al.*, 2020).

Correlation Analysis

Correlation analysis is a statistical technique used to measure the strength and direction of a relationship between two variables. This analysis helps researchers determine whether an increase or decrease in one variable is associated with a corresponding change in another variable. The correlation coefficient, often denoted as "r," ranges from -1 to +1, where values closer to +1 indicate a strong positive correlation, values closer to -1 indicate a strong negative correlation, and values near 0 suggest no correlation (Field, 2018). Correlation analysis is commonly applied in various fields, including finance, psychology, and the social sciences, to explore relationships between variables (Cohen *et al.*, 2020).

Table 3: Correlation and the coefficient of determination

		Stakeholders' Identification	Project Effectiveness
		Criteria	
Stakeholders' Identification Criteria	Pearson Correlation	1	
	Sig. (2-tailed)		
	N	81	
Project Effectiveness	Pearson Correlation	.309**	1
	Sig. (2-tailed)	.005	
	N	81	81

Source: **Primary data, (2024).**

Table 3 presents the results of a Pearson correlation analysis and the coefficient of determination between stakeholders' identification criteria and project effectiveness. The table indicates a positive correlation coefficient of 0.309**, which is statistically significant at the 0.01 level (2-tailed), suggesting a moderate relationship between the variables. This finding implies that effective criteria for identifying stakeholders contribute to enhanced project effectiveness. The significance value ($p = .005$) confirms the reliability of this relationship. These results align with recent studies emphasizing the critical role of stakeholder identification in improving project outcomes in infrastructure development (Nyasha & Mutambara, 2021; Singh & Sahu, 2023). The analysis, based on 81 observations, underscores the importance of systematic stakeholder engagement for project success.

CONCLUSIONS

The findings indicate that stakeholders' identification criteria play a significant role in determining project effectiveness in Rwanda. The analysis reveals a negative relationship between ineffective stakeholder identification and overall project performance, suggesting that inadequate identification processes hinder project success. Conversely, the results highlight the importance of collaborative decision-making, which emerged as a strong positive contributor to project effectiveness. While data-driven decision-making showed a slight positive effect, its impact was not as pronounced as that of collaborative efforts. Overall, the data underscores the necessity for robust stakeholder engagement and collaboration to enhance project outcomes, emphasizing that addressing stakeholders' identification criteria can lead to improved effectiveness in project execution.

RECOMMENDATIONS

To enhance project effectiveness, it is essential to establish robust stakeholders' identification criteria that accurately reflect the diverse interests and influences within the project environment. Organizations should invest in thorough stakeholder analysis at the project's inception, employing tools such as stakeholder mapping to identify key players and their potential impacts on project outcomes. This approach will facilitate tailored engagement strategies, ensuring that stakeholders' voices are adequately represented and considered throughout the project lifecycle. Additionally, training programs should be implemented to educate project teams on the importance of identifying relevant stakeholders and understanding their needs, fostering a culture of inclusivity that values diverse perspectives.

Suggestions for Further Studies

Future research could explore the longitudinal impact of stakeholders' identification criteria, data-driven decision-making, and collaborative decision-making on project effectiveness across different sectors beyond infrastructure, such as healthcare and education. Investigating the influence of cultural, social, and economic contexts on these dynamics would provide a more nuanced understanding of how these factors interact in diverse environments. Additionally, qualitative studies involving interviews and focus groups could complement quantitative findings, offering deeper insights into stakeholder perceptions and experiences. Finally, examining the role of emerging technologies, such as artificial intelligence and big data analytics, in enhancing collaborative decision-making processes would be valuable for understanding future trends in project management practices.

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