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INFLUENCE OF PROJECT INITIATION MANAGEMENT ON THE PERFORMANCE OF WATER, SANITATION AND HYGIENE PROJECTS IN RWANDA: A CASE OF BUSANZA NEIGHBORHOOD SANITATION PROJECT

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Abstract

This study investigates the influence of project initiation management on the performance of Water, Sanitation, and Hygiene (WASH) projects in Rwanda, specifically focusing on the Busanza Neighborhood Sanitation Project. The research highlights the critical components of project initiation management, including scoping, design, and feasibility assessments, and how these elements impact key performance indicators such as on-time completion, product quality, and adherence to budget constraints. The study employed a descriptive survey that incorporated both qualitative and quantitative methodologies. The intended population of the study consisted of 1260 representatives in the Busanza region. An initial sample size of 304 was calculated using Slovin's formula. Systematic stratified random sampling methods were used. In this investigation, both primary and secondary data were utilized. Data collection was conducted using a questionnaire as the primary method, while secondary data sources including project reports, academic journals, government publications, and industry reports. A thematic analysis was conducted on qualitative data obtained from interviews and open-ended survey responses. The data underwent coding to classify the responses and ascertain relevant concepts or ideas. This procedure facilitates the organization of qualitative data for further analysis. Statistical analysis was conducted on quantitative data obtained from closed-ended survey questions, utilizing descriptive statistics including frequencies, percentages, means, and standard deviations. To strengthen the validity of the results, qualitative and quantitative data were triangulated to support the findings. The interpretative analysis of the data was conducted in consideration of the research objectives and theoretical framework. The findings reveal distinct influences of various project management phases on overall project performance. Project Monitoring Management has the most substantial positive effect, with a coefficient of 0.877 (Beta = 1.014, p = 0.000), indicating its critical role in enhancing project outcomes. These results emphasize the importance of thorough planning and stakeholder engagement in the initiation phase to ensure successful implementation and sustainability of WASH projects. The study concludes with suggestions for further research to

explore long-term impacts and the role of technology in improving project management practices in the WASH sector.

Keywords: Project Initiation Management, Water, Sanitation, and Hygiene (WASH), Project Performance, Stakeholder Involvement, Rwanda.

1.1 Background of the Study

The performance of Water, Sanitation, and Hygiene (WASH) projects globally has significant implications for public health, economic development, and environmental sustainability (UNICEF, 2022). Effective project life-cycle management is crucial for ensuring that WASH projects meet their intended goals and deliver lasting benefits to communities. According to the World Health Organization (WHO), inadequate access to clean water and sanitation contributes to approximately 829,000 deaths each year from preventable diarrheal diseases, underscoring the critical need for well-managed WASH initiatives (WHO, 2023). According to Kaseva and Mshana (2023) integration of systematic project management practices throughout the life cycle of these projects—spanning planning, implementation, monitoring, and maintenance—is essential for enhancing their performance and achieving positive health outcomes.

Achieving intended results and guaranteeing project sustainability in the US has become increasingly dependent on the efficient management of the project life cycle, from planning and execution to monitoring and closing (Project Management Institute, 2023). This importance is particularly evident in complex and high-impact projects, such as those related to infrastructure, healthcare, and environmental management (Kerzner, 2022). Effective life-cycle management ensures that these projects are not only implemented efficiently but also achieve sustainable outcomes that improve community health and well-being (UNICEF, 2022). For instance, incorporating stakeholder feedback during the planning phase and employing rigorous monitoring techniques during implementation can lead to better alignment with community needs and enhanced project effectiveness (Smith & Anastasopoulos, 2021).

In China, rapid urbanization and industrial growth have placed significant pressure on water and sanitation infrastructure, highlighting the need for efficient project management to ensure sustainable and high-performing WASH initiatives (Wang & Zhang, 2023). Planning, carrying out, overseeing, and finally wrapping up a project are all parts of the project life-cycle management methodology, is crucial for optimizing the performance of these projects and addressing the diverse challenges encountered in various geographic and socio-economic contexts (Zhao & Li, 2021). Effective project management practices, including rigorous monitoring and evaluation, are necessary to adapt to challenges and ensure that projects meet their objectives (Wang & Li, 2021). The integration of these practices into the project life cycle helps in addressing issues such as resource allocation, community involvement, and sustainability, which are crucial for the overall effectiveness of WASH initiatives (Liu & Yang, 2024).

The efficacy of Water, Sanitation, and Hygiene (WASH) initiatives in Sub-Saharan Africa is a significant issue, given the ongoing difficulties related to water scarcity, insufficient sanitation infrastructure, and substandard hygiene practices (Smith & Ndungu, 2022). Effective management during the project life cycle is crucial for addressing these issues and improving project outcomes

(Sullivan, 2022). The successful implementation and sustainability of WASH initiatives are influenced by various factors including planning, stakeholder engagement, and resource management (Nkengasong & Sagnia, 2023). Inadequate life-cycle management can lead to issues such as resource misallocation, incomplete infrastructure, and low community engagement, which undermine the effectiveness of WASH interventions (Mann & Rees, 2022).

The project life-cycle management approach in South Africa's WASH sector involves several stages, including planning, implementation, monitoring, and evaluation, each critical to project success (Van der Merwe, 2024). The country's diverse socio-economic landscape and varying levels of infrastructure development necessitate a nuanced approach to project management that addresses local needs while ensuring efficient resource use (Muller, 2023). Effective planning ensures that projects are well-aligned with community needs and regulatory requirements, while implementation phases demand rigorous adherence to timelines and budgets (Nkosi & Moyo, 2023). Monitoring and evaluation, integral to life-cycle management, provide crucial insights into project performance and effectiveness, enabling timely adjustments and ensuring that project goals are met (Peters, 2023).

Effective project life-cycle management plays a pivotal role in ensuring these projects meet their intended goals and deliver sustainable outcomes (Karanja & Mwangi, 2023). Recent studies have highlighted that the success of WASH projects in Kenya is closely linked to the rigorous application of life-cycle management principles, including planning, implementation, monitoring, and maintenance (Wangari & Wanjiru, 2023). As Kenya continues to grapple with challenges related to water scarcity and sanitation infrastructure, optimizing project performance through comprehensive management strategies is essential for achieving equitable and lasting improvements in community health (Njenga, 2024).

As Rwanda, continues to experience rapid population growth and urbanization, the demand for efficient and reliable water and sanitation services has intensified (Kiboga, 2023). To guarantee that WASH projects achieve their performance goals and provide real benefits to communities, project life-cycle management—which includes planning, executing, monitoring, and evaluating is crucial (Gakenheimer, 2023). Effective planning and design are critical for aligning project goals with community needs and ensuring the optimal use of resources (Ndayambaje & Mugenzi, 2022). In order to make real-time adjustments and make sure the project achieves its goals, monitoring and evaluation must be done during the implementation phase of the project. Another important thing is to focus on sustainability and maintenance so that the WASH infrastructure stays functional and keeps serving the community after the project is finished (Rugamba & Nyirabukeye, 2024).

This neighborhood has undergone various WASH interventions aimed at improving water access, sanitation facilities, and hygiene practices among its residents (Nkurunziza, 2023). Assessing these projects' performance within this context provides valuable insights into how life-cycle management strategies can affect project outcomes, sustainability, and overall community well-being (Rugamba, 2021). The insights gained from analyzing project performance in this specific neighborhood can contribute to the development of more effective project management

frameworks and strategies. Thus, this study provides a critical assessment of the life-cycle management approaches applied in Busanza and their implications for enhancing WASH project performance.

1.2 Statement of the Research Problem

The performance of water, sanitation, and hygiene (WASH) projects in Rwanda remains a critical concern, particularly in urban areas where rapid population growth exacerbates sanitation challenges. Despite significant investments in WASH initiatives, the effectiveness of these projects is often undermined by inadequate project initiation management practices, leading to poor planning, insufficient stakeholder engagement, and ineffective resource allocation (Munyaneza et al., 2021). For instance, a study by Ngabonziza and Nyirabizi (2023) reported that only 56% of WASH projects in Kigali met their intended objectives, primarily due to weaknesses in the project initiation phase. Furthermore, the lack of robust risk management strategies has resulted in project delays and budget overruns, negatively impacting the sustainability of water and sanitation services (Murekezi *et al.,* 2022). This situation highlights the urgent need to address the shortcomings in project initiation management to enhance the performance of WASH projects and improve the overall health and well-being of communities in Rwanda.

Empirical literature highlights critical gaps in the management of WASH projects that contribute to suboptimal performance. Studies reveal that inadequate planning and monitoring are significant issues, with many projects lacking comprehensive needs assessments and follow-up evaluations (Habimana, 2022). For instance, in Busanza, recent evaluations show that 40% of water supply systems and sanitation facilities fail to meet operational standards due to poor implementation and lack of sustained community involvement (Munyaneza, Rukundo & Uwizeye, 2023). Thus, addressing the shortcomings in project initiation management is essential to enhance the performance and sustainability of WASH projects in Rwanda, ultimately improving community health outcomes.

2.0 Literature Review

2.1 Empirical Review - Project Initiation Management on Project Performance

An exemplary study conducted by Khang and Moe (2018) examined the correlation between project initiation procedures and the achievement of project success within the construction sector. Employing a survey methodology, the researchers gathered data from a sample of 200 project managers and conducted an analysis using Structural Equation Modeling (SEM). The results indicated that well defined project goals, active involvement of stakeholders, and thorough feasibility study at the beginning stage were directly associated with the achievement of project success. The present study highlights the significance of comprehensive initiation procedures in augmenting the overall performance of a project.

In a separate empirical investigation, Choi and Lim (2017) examined the influence of several elements of project commencement on the performance of IT projects. This study utilized a mixed-methods methodology, integrating quantitative surveys with qualitative interviews. An examination of the survey data using regression analysis revealed that thorough scope definition and risk assessment at project beginning were significant indicators of project success.

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Furthermore, qualitative interviews yielded valuable insights on how early engagement of stakeholders contributed to more seamless project implementation. The research emphasizes the crucial need of thorough planning and effective management of stakeholders during the beginning phase in attaining positive project results.

The research conducted by Osei-Kyei and Chan (2017) specifically examined the influence of project commencement procedures on the financial success of public sector infrastructure projects. Employing a quantitative methodology, the researchers disseminated surveys to a sample of 150 project managers and examined the collected data using statistical methods such as factor analysis and multiple regression. The findings indicated that the implementation of robust project commencement procedures, such as well-defined objectives and comprehensive feasibility assessments, had a substantial impact on improving project performance indicators, including adherence to budget and schedule. This paper underscores the need of implementing systematic initiation procedures to guarantee the effective completion of projects, particularly in the public sector.

Gido and Clements (2018) undertook a research investigation on the impact of project initiation on project performance within the domain of engineering projects. Their study used a quantitative research methodology, including a survey of 120 project managers. The application of correlation and regression methods in data analysis shown a significant link between well stated project objectives and stakeholder consensus during project initiation and project success. Additionally, the study emphasized that initiatives with well-defined initiation procedures were more inclined to achieve their goals punctually and within the allocated budget. The results of this study provide evidence that proper initiation procedures are essential for attaining the intended project results.

A recent empirical study conducted by Crawford (2020) examined the impact of project commencement procedures on project performance specifically within the healthcare project setting. Employing a case study approach, the study analyzed multiple healthcare initiatives and carried out interviews with project managers and various stakeholders. The analysis revealed that projects that had well developed initiation procedures, which encompassed stakeholder involvement and risk management, saw fewer delays and achieved superior overall performance. The study's results indicate that meticulous planning and effective engagement of stakeholders during the commencement phase are crucial for attaining favorable project results in intricate and regulated settings such as healthcare.

2.2 Theoretical Literature on Project Initiation Management

Starting a project is the initial phase of any project management life cycle. The project's stakeholders, objectives, and purpose are detailed below, along with the project's scope and timeline. According to Larson and Gray (2022), laying a solid groundwork for a project's success begins with a solid beginning. At this point, the project manager should have everyone on board with the project's objectives, identified potential threats, and established a plan to mitigate them. These first stages are critical because they determine the course of the project and how resources

will be distributed during its lifetime. Project failure, scope creep, and budget overruns are all possible outcomes of ineffective management during the start phase.

Identifying and engaging stakeholders throughout the start phase is crucial. In order to connect the project with organizational goals, it is vital to understand the needs, expectations, and influence of stakeholders, according to a study by Eskerod and Jepsen (2019). Project managers can improve their understanding of the project's impact and encourage buy-in from those who will be most directly impacted by including key stakeholders in the planning stages. When working on complicated projects that need the cooperation of many different parties with different interests, this level of engagement is crucial to the project's success.

Before beginning a project, it is essential to conduct a risk assessment. Hillson (2021) asserts that one way to minimize uncertainty and be ready for difficulties is to anticipate possible risks and implement mitigation techniques during the beginning phase. Project teams may better manage resources and make well-informed decisions when they identify risks early on, which in turn reduces the possibility of project disruptions. If you want your project to be on schedule and under budget, Hillson says you need to implement risk management methods right now.

An additional step in starting a project is creating a project charter, which formally defines the scope of the project. An essential document that lays out the project's objectives, deliverables, and constraints is the project charter, according to Kerzner (2023). With this document as a guide, the project can make sure it doesn't veer off course from its initial objectives. In addition to outlining the project team's responsibilities and providing the project manager with authorization to use organizational resources, a project charter is crucial for maintaining focus and accountability throughout the project's duration.

The project's viability is lastly evaluated during the initiation phase. A comprehensive feasibility study, according to Meredith and Shafer (2020), should be carried out at this stage to ascertain the project's viability from a technical, financial, and operational standpoint. In order to make informed decisions and prevent expensive errors later on in the project, a well-executed feasibility study is essential. Organizations may make sure they invest in feasible projects that contribute to their long-term goals by carefully assessing the project's viability before they begin.

2.3 Resource-Based View

When it comes to being ahead of the competition and performing at a high level, the Resource-Based View (RBV) of the company is all about those resources and capabilities. According to research by Barney (2021), organizations are more likely to succeed when they have resources that are valued, unique, inimitable, and non-substitutable. From this vantage point, WASH programs in Rwanda can benefit from efficient project initiation management, which makes the most of available resources to boost project performance through careful planning, sufficient funding, and adaptation to local conditions.

In Rwanda, the effectiveness of project initiation management in WASH projects can be influenced by the availability and management of resources. According to a study by Nhamo, Muchena, and Maphosa (2020), successful initiation of WASH projects in Rwanda depends on the integration of local knowledge and stakeholder participation. The RBV framework suggests that leveraging local expertise and engaging stakeholders from the outset can enhance the relevance and effectiveness of WASH interventions. This approach ensures that the resources utilized are well-aligned with community needs and project objectives, thereby improving overall project performance.

Further, the RBV underscores the importance of organizational capabilities in project initiation. For WASH projects in Rwanda, organizational capabilities such as planning skills, risk management, and coordination are crucial for effective initiation. Research by Fiedler and Rooke (2017) highlights that organizations with strong planning and management capabilities are better equipped to handle the complexities of project initiation and execution. In the context of WASH projects, these capabilities contribute to better project design, risk assessment, and stakeholder engagement, leading to improved project outcomes.

Additionally, the RBV emphasizes the strategic management of resources to gain competitive advantage. In the WASH sector in Rwanda, managing financial resources effectively during the initiation phase can significantly influence project success. According to a study by Muriithi and Crawford (2022), projects with well-managed financial resources and robust funding strategies are more likely to achieve their objectives. This is particularly important for WASH projects in resource-constrained settings, where effective initiation can make the difference between project success and failure.

2.4 Conceptual Framework

The conceptual framework for this study on the influence of project initiation management on the performance of WASH projects in Rwanda encompasses several key components, including stakeholder engagement, project planning, and resource allocation, all of which significantly impact project outcomes. According to Elgendy and Elghamrawy (2022), effective stakeholder engagement during the initiation phase enhances collaboration and fosters a shared vision, which is crucial for project success. Moreover, comprehensive project planning is essential for identifying potential risks and ensuring efficient resource allocation (Chin et al., 2023). This framework posits that a systematic approach to project initiation management not only improves the performance of WASH projects but also contributes to their sustainability and the overall health outcomes of communities served (Kafunda et al., 2020). By integrating these elements, the framework provides a foundation for understanding how structured initiation processes can lead to successful implementation of sanitation projects in the Busanza neighborhood. This is shown in

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Figure 1.

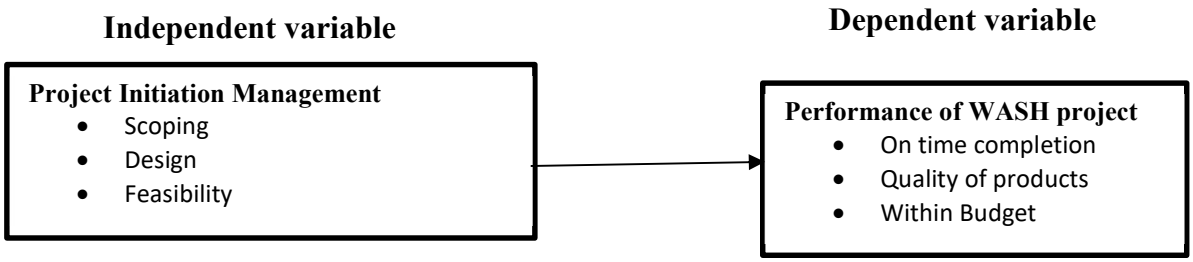

Figure 1: Conceptual framework

Source: Researcher, 2024

The conceptual framework for this study posits that effective Project Initiation Management—encompassing scoping, design, and feasibility—significantly influences the performance of Water, Sanitation, and Hygiene (WASH) projects, specifically in terms of timely completion, product quality, and budget adherence. Scoping involves identifying project goals and stakeholder needs, which lays the groundwork for a comprehensive design process that ensures alignment with community expectations (Bonsu et al., 2020). Furthermore, feasibility assessments determine the viability of proposed solutions, enabling project managers to allocate resources effectively (Osei et al., 2022). Research indicates that thorough initiation processes lead to improved project outcomes, including on-time delivery, enhanced quality of service, and reduced costs (Nkurunziza et al., 2023). Thus, the relationship between Project Initiation Management and WASH project performance is critical for achieving sustainable development goals in the water and sanitation sector.

3.0 Research Methodology

The research employed a descriptive survey design that integrates both qualitative and quantitative analysis approaches. The quantitative aspect of the study consisted of a predetermined questionnaire distributed to important individuals involved in the project, such as project managers, local government officials, and community representatives. The qualitative aspect of the study included conducting in-depth interviews and focus groups with individuals who were directly involved in the Busanza initiative. All components that satisfy the study's assimilation requirements comprise the target population (Hamed, 2016). The 1260 representatives in the Busanza area were the study's target population. To determine an appropriate sample size for a target population of 1,260, Slovin's formula can be employed. Slovin's formula is given by.

$$n = \frac{N}{1+N\,(e)^2} \quad \text{(Equation 3.1)}$$

Slovin's formula was used to compute the sample size within a population of 1260. Given a desired margin of error (e) of 5%, a regularly used value in several research projects, the computation may be performed as follows:

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$$n = \frac{1260}{1 + 1260(0.05)^2} \approx 303.6 = 304$$

Therefore, for a population of 1260, the sample size determined using Slovin's' formula with a 5% margin of error would be approximately 304.

Table 1: Sampling Frame

Stakeholder Group	Number of Stakeholders	Sample Size
Local Community Members	1100	265
Government Agencies	20	5
Non-Governmental Organizations (NGOs)	24	6
Private Sector Partners	36	9
Donor Agencies	80	19
Total	**1260**	**304**

Source: **Project manager Busanza WASH project, (2024)**.

In research on water, sanitation, and hygiene (WASH) projects, a common sampling technique is stratified random sampling, which ensures that various subgroups within the population are adequately represented. This study used a combination of primary and secondary data collecting techniques. Primary data was collected through structured interviews and surveys with key stakeholders, including project managers, local government officials, and community members involved in the Busanza Neighborhood Sanitation Project. Secondary data was sourced from project reports, academic literature, and governmental and NGO publications relevant to WASH projects in Rwanda. This data helped contextualize findings and compare the Busanza project's performance with similar initiatives.

The survey instrument employed in this study is formulated in straightforward language, facilitating the collection of essential data. Subsequently, a series of overlapping questions is organized in a positive order with the objective of collecting data from the sample size of the study. Fundamentally, it may pose closed-ended questions to the participants. Participants indicated their viewpoints by choosing from a range of possibilities while responding to closed-ended questions. A combination of face-to-face interviews and email surveys were utilized to engage busy managers effectively. In-person interviews offer a chance for thorough data gathering, enabling more detailed answers and prompt clarification of intricate inquiries (Yin, 2018). This method is particularly valuable for capturing detailed insights and fostering a deeper understanding of managerial perspectives on project life-cycle management. However, to accommodate the schedules of busy managers, email surveys were employed as a supplementary tool, enabling them

to provide input at their convenience while ensuring broad participation (Dillman, Smyth, & Christian, 2018).

Prior to the full-scale research, a pilot study was carried out in Niboye Sector to evaluate the efficacy of the survey instrument and methods. Following the recommendation of Kothari and Garg (2019), 31 questionnaires were distributed in this pilot project, accounting for 10% of the overall sample size.

Reliability of research instruments is crucial for ensuring the accuracy and consistency of data collected in studies on project life-cycle management. The test-retest technique is a popular tool for determining dependability; it entails giving the same test to the same people twice and then looking at how the results compare. The Cronbach's alpha coefficient, a measure of internal consistency, is another technique. A Cronbach's alpha coefficient of 0.7 or above is generally considered acceptable, indicating that the items within the instrument are consistently measuring the same construct (Tavakol & Dennick, 2021). These reliability assessments are essential for validating the instruments used in research on the performance of WASH projects, ensuring that findings are dependable and replicable.

Table 2: Reliability Statistics

Variable	Alpha (α)	Comments
Project Initiation Management	0.749	Reliable
Project Performance	0.805	Reliable

Source: **Pilot Results**, (2024).

Using Cronbach's alpha (α) as a measure of internal consistency, Table 2 displays the dependability statistics for several components of project life-cycle management and project performance. Table 2 presents the reliability statistics for the variables examined in this study, specifically Project Initiation Management and Project Performance. The Cronbach's alpha (α) values indicate the internal consistency of the measurement scales used for each variable. The reliability coefficient for Project Initiation Management is 0.749, suggesting a satisfactory level of reliability and indicating that the items measuring this variable are consistently reflecting the same underlying construct. In contrast, Project Performance shows a higher reliability coefficient of 0.805, which is considered excellent, confirming that the items assessing this variable are highly consistent and dependable. These findings are consistent with the current body of research, which highlights the importance of reliability in guaranteeing the accuracy of research tools (Tavakol & Dennick, 2021). High reliability, particularly in Project Monitoring Management ($\alpha = 0.911$), underscores the importance of consistent oversight in achieving successful project outcomes, as highlighted by Kerzner (2019).

Following the collection of respondents' completed questionnaires, the researcher coded each response, giving the descriptive data gathered for the study a symbolic meaning through the use of particular labels and codes. The Statistical Product and Service Solutions (SPSS) software Version 25.0 was used to analyze coded data from completed questionnaires. The results were

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displayed in the tables as frequencies, percentages, means, and standard deviations. The inquiry also used regression analysis:

$Y = \alpha + \beta_1 X_1 + \mu$……. (Equation 3.2)

Y= Dependent variable – Project performance as expressed

X_1 = Project initiation management

$\beta 1$ is this coefficient of X_1 and μ = Error term.

4.0 Results and Findings

4.1 Findings on Project Initiation Management

The analysis of respondents' views on project initiation management reveals insights into the effectiveness of the initial phase. Table 3 below provides a detailed overview of descriptive statistics related to essential statements concerning project initiation management, encompassing stakeholder involvement levels, clarity of project objectives, and the sufficiency of feasibility studies. The responses from participants were quantified using a Likert scale, which spanned from Strongly Disagree (SD) to Strongly Agree (SA). The analysis included mean values and standard deviations (Std Dev.) to reflect the central tendency and variability of the data collected. This examination offers a glimpse into the perceptions of respondents regarding the initiation phase of WASH projects, emphasizing both strengths and opportunities for enhancement.

Table 3: Respondents views on Project Initiation Management

Statement on Project Initiation Management	SD	D	N	A	SA	Mean	Std Dev.
The project effectively identified the sanitation needs of the community before initiation.	0.0%	0.0%	1.6%	36.6%	61.8%	4.60	.522
The project's objectives and scope were clearly defined and communicated to all stakeholders at the beginning.	0.0%	0.0%	0.4%	42.9%	56.7%	4.56	.505
Stakeholders were actively involved in the planning process from the outset.	0.0%	0.0%	1.6%	30.7%	67.7%	4.66	.506
The project team assessed and incorporated local capacity and resources into the initial project plan.	0.0%	0.0%	14.2%	22.8%	63.0%	4.49	.732
There was a thorough analysis of potential risks and challenges during the initiation phase.	0.0%	0.0%	1.6%	44.9%	53.5%	4.52	.531

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The project initiation phase included a comprehensive needs assessment involving local stakeholders.	0.0%	0.0%	3.9%	36.6%	59.4%	4.56	.572
Clear goals and milestones were established during the initiation phase to guide project development.	0.0%	0.0%	9.8%	34.3%	55.9%	4.46	.669
The project initiation provided a solid foundation for effective planning and implementation.	0.0%	0.0%	3.9%	43.3%	52.8%	4.49	.574
The initial project plan addressed the specific challenges related to sanitation and hygiene in the community.	0.0%	0.0%	9.1%	36.6%	54.3%	4.45	.656
Feedback from the initiation phase was used to refine and improve the project plan before moving to the next phase.	0.0%	0.0%	9.8%	34.3%	55.9%	4.46	.669

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

Table 3 above reflects respondents' views on various aspects of Project Initiation Management, with overwhelmingly positive feedback across all statements. The highest mean score of 4.66 (Std Dev. = .506) is attributed to stakeholder involvement in the planning process, indicating strong engagement from the outset, which is consistent with the literature emphasizing stakeholder participation as a critical factor in the success of development projects (Aaltonen & Kujala, 2016). The effective identification of community sanitation needs before project initiation (Mean = 4.60, Std Dev. = .522) further supports the importance of needs assessment in tailoring projects to local conditions, a practice that is widely endorsed in WASH literature for ensuring relevance and effectiveness (Fisher et al., 2020). Moreover, the clear definition and communication of objectives and scope (Mean = 4.56, Std Dev. = .505) and the thorough analysis of risks and challenges (Mean = 4.52, Std Dev. = .531) align with project management best practices, which argue that well-defined goals and risk assessments are vital for guiding project execution and mitigating potential issues (Kerzner, 2019). The consistency of high mean scores across all statements, with no respondents disagreeing or strongly disagreeing, suggests a robust project initiation phase that laid a solid foundation for subsequent stages, a factor often linked to overall project success (PMI, 2021).

The findings on Project Initiation Management reveal its significant role in shaping project success, as evidenced by the positive coefficient in the regression model (B = 0.132, Beta = 0.118, p = 0.001). Effective initiation involves defining clear project objectives, scope, and stakeholder roles, which sets a solid foundation for subsequent phases. Research supports that projects with a well-defined initiation phase tend to experience smoother execution and improved outcomes due

to better alignment with stakeholder expectations and resource availability (Müller & Turner, 2020; Kerzner, 2019).

The positive impact of Project Initiation Management is consistent with literature highlighting its foundational role in project success. Effective initiation processes typically include comprehensive needs assessments and stakeholder engagement, which help in mitigating risks and clarifying project objectives from the start (PMI, 2021). Studies show that projects which thoroughly address these aspects during initiation are better positioned to adapt to challenges and achieve their goals, as the early phase sets the trajectory for project planning and execution (Turner, 2014). By contrast, inadequate initiation can lead to misalignment of objectives and increased project risks, which underscores the necessity of robust initiation practices in achieving project success.

However, while Project Initiation Management is crucial, the results indicate that its impact, while positive, is less pronounced compared to other management phases like Project Monitoring Management. This suggests that while a strong initiation phase is important, its effectiveness is enhanced when complemented by rigorous planning, execution, and monitoring practices (Kerzner, 2019). Effective initiation alone may not suffice if subsequent phases are not managed well. This finding reflects the integrated nature of project management, where the success of one phase often depends on the effectiveness of others, highlighting the need for a holistic approach to project management that spans all phases (Müller & Turner, 2020).

5.0 Conclusions of the study

The findings on Project Initiation Management reveal that this phase plays a critical role in setting the foundation for project success, with a strong positive impact on overall project performance. Effective project initiation involves accurately identifying community needs, defining clear objectives, and engaging stakeholders from the outset, which significantly contributes to the project's ability to meet its goals. The emphasis on thorough needs assessments and risk analyses during initiation ensures that subsequent planning and execution phases are built on a solid understanding of the project's requirements and challenges. Consequently, well-managed initiation processes enhance the likelihood of achieving favorable project outcomes by aligning all phases of the project with its defined objectives and stakeholder expectations.

5.1 Recommendations of the study

To enhance the performance of water, sanitation, and hygiene (WASH) projects in Rwanda, it is crucial to strengthen project initiation management practices. The study highlights those thorough needs assessment, clear definition of project scope, and early stakeholder engagement are essential for setting a solid foundation. Therefore, it is recommended that project managers invest more resources and time in the initiation phase to ensure a comprehensive understanding of community needs and expectations. This involves conducting detailed needs assessments, engaging local stakeholders from the outset, and clearly communicating the project’s objectives and scope. Such efforts will likely improve alignment with community requirements and foster greater buy-in, ultimately leading to more successful project outcomes.

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5.2 Suggestions for Further Studies

Future research on the influence of project initiation management on the performance of Water, Sanitation, and Hygiene (WASH) projects in Rwanda could explore several avenues to build on the findings of this study. Firstly, longitudinal studies could be conducted to assess the long-term impacts of effective project initiation processes on WASH project sustainability and community health outcomes. Additionally, qualitative research could provide deeper insights into stakeholder perceptions and experiences regarding project initiation practices, revealing potential barriers and facilitators that quantitative studies might overlook. Comparative studies between different regions or countries could also enhance understanding of how contextual factors influence project management effectiveness in WASH projects. Furthermore, examining the role of technology and innovation in project initiation and management could shed light on modern practices that may improve project performance. By pursuing these areas, future studies could contribute to a more comprehensive understanding of how project management practices can be optimized to enhance the effectiveness of WASH initiatives.

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