JETIR.ORG ISSN: 2349-5162 | ESTD Year : 2014 | Monthly Issue
JOURNAL OF EMERGING TECHNOLOGIES AND INNOVATIVE RESEARCH (JETIR)
An International Scholarly Open Access, Peer-reviewed, Refereed Journal

# Monitoring and Evaluation Factors and Performance of ICT Sector Development Projects in Rwanda. A Case of ICT Projects under Rwanda Information Society Authority.

**[1]Cyurinyana Emerthe, [2]Malgit Amos Akims PhD & [3]Jubilee Leonard Kakwezi**
[1]School of Business and Economics Mount Kenya University
[2&3]School of Business and Economics Mount Kigali University

## Abstract

This study aimed at analyzing the effect of monitoring and evaluation factors on the performance of ICT sectoral development project in Rwanda. Specifically, this study explores the effects of monitoring and evaluation planning, team competency, and stakeholder participation to the performance of ICT sector development projects in Rwanda. Results may serve project managers, development practitioners, scholars as well as students involved in project monitoring and evaluation attempts. Results from this study serve as; helpful for Rwandan Information Society Authority, pertinent source of data for project management academicians, researcher's scholars, public policy makers, public and private institutions who may necessitate to deepen the level of understanding in the role of monitoring and evaluation factors. This study was underpinned by stakeholder theory, logical framework model, contingence theory and theory of change. The researcher employed a descriptive and correlation research designs using both qualitative and quantitative approaches. The target population and sample of this was 206 and 135 respectively. The researcher used purposive sampling technique to choose respondents and key informants. Data was collected from 129 respondents involved in various ICT projects under the supervision of Rwanda information Authority, with a focus on their perceptions of M&E practices, team skills, and stakeholder engagement. Both primary and secondary data were collected data using questionnaire and interview guide. The researcher utilized statistical product and service solution version 26.0 to generate descriptive statistics and inferential statistics to test the research null hypothesis that monitoring and evaluation factors influence project performance. The results show that monitoring and evaluation plays a crucial role in project effectiveness. A significant portion of respondents (44.9%) agreed that stakeholder involvement in M&E formulation promotes cost-effectiveness, indicating that a structured M&E approach enhances project outcomes. Additionally, the presence of baselines for monitoring activities was identified by 33.3% of respondents as a critical factor for tracking progress and ensuring accountability. The project team competency also emerged as a significant predictor of ICT sector development project performance. Respondents felt the role of skilled teams in executing monitoring and evaluation tasks, with majority affirming that team competence directly influences the project valuation quality and accuracy. Results reveal that well-trained teams were well equipped to analyze data and take informed decisions, thus improving the overall performance of ICT sector projects. Stakeholder participation was found to have a high positive correlation ($r = 0.838$) with project performance, suggesting that active stakeholder involvement, especially in identifying and tracking indicators, significantly enhances project performance. Respondents highlighted the influence of stakeholders' knowledge of monitoring and evaluation practices, with 42.6% agreeing that such engagement influences the implementation of monitoring and evaluation strategies effectively. This study concludes that the integration of effective monitoring and evaluation planning, a competent project team, and active stakeholder participation significantly contributes to the performance of ICT sector development projects. For optimal outcomes, ICT projects in Rwanda should prioritize these factors, ensuring a robust framework for monitoring progress, enhancing team capabilities, and fostering meaningful stakeholder engagement throughout the project lifecycle.

**Key words:** Monitoring & Evaluation, Factors, Performance and ICT Projects

## 1.0 Introduction

The global landscape information communication technology (ICT) has been rapidly advanced over two decades ago, significantly influencing economic growth, social development, and governance. According to United Nations report, (2020) ICT is pertinent facilitator for attaining sustainable development goals especially in education, health as well as economic growth. Countries worldwide are increasingly investing in ICT infrastructure to enhance connectivity, promote digital literacy, and foster innovation. Therefore, International Telecommunication Union (ITU, 2021), found out that the global internet penetration is approximately 60% by 2021, highlighting the importance of ICT in bridging the digital divide.

In Africa, the ICT sector has played pivotal role for economic transformation and development and regional integration. The Africa Union Agenda 2063 emphasizes the role of technology in fostering sustainable development across member states. East Africa, particularly Rwanda, has emerged as a leader in ICT adoption and innovation. The region has witnessed significant investments in broadband infrastructure and mobile technology, which have facilitated access to information services (World Bank, 2020).

Rwanda's Vision 2050 aims to position the country as a knowledge-based economy through strategic investments in ICT Sector development projects. Rwanda has made substantial strides in developing its ICT sector since the early 2000s. The government established the Rwanda ICT Authority in 2016 to oversee the implementation of national policies aimed at enhancing digital transformation. Key initiatives include the National Broadband Policy and Smart Rwanda Master Plan, which aim to improve internet access and promote e-governance (Rwanda ICT Authority, 2021). Between 2016 and 2024, various projects have been launched to enhance digital skills among citizens and improve service delivery through technology. Therefore, M&E framework have become pertinent for assessing project performance and accountability.

According to Kumar and Kumar (2022), The Rwandan government recognizes the effective monitoring and evaluation as a crucial project management tools for understanding the development implementation and assessing the impacts the performance of ICT sector development project on socio-economic developments. According to Rwanda Development Board (RDB, 2021), a robust M&E system should include clear indicators aligned with the national target like vision 2050 and national strategy for transformation (NST1). These frameworks often incorporate both qualitative and quantitative metrics to gauge project success comprehensively.

A study by Ngabonziza *et al*. (2022), The key factors influencing M&E in ICT Projects include among others; Stakeholder Engagement Capacity Building and Technology Utilization.The Ministry of ICT and Innovation (MINICT, 2023) emphasizes training programs aimed at enhancing skills associated with data collection, analysis as well as reporting. Improved capacity leads to better-informed decision-making processes.Technology Utilization and integration of technology into M&E factors also transforms how data is collected and analyzed. As noted by Uwizeye *et al*. (2023), mobile application and cloud based platforms stimulate real time data collection, enabling quicker responses to emerging challenges within ICT projects. RDB (2021) outlines specific targets for these indicators within its strategic plans, allowing for systematic tracking over time.

Despite advancements in M&E performance factors, several challenges persist; Data Quality Issues that relate to Inconsistent data collection methods can lead to unreliable results (Ngabonziza *et al*., 2022). Limited Resources like Financial constraints often hinder comprehensive evaluations. Political Influence**:** External political pressures may affect the impartiality of evaluations conducted by governmental bodies and talking these constraints askes concerted efforts from all stakeholders involved in ICT development projects. Therefore, M&E factors have been vital components for assessing the level of ICT sector development project success in Rwanda. While challenges

remain; ongoing improvements in these areas will enhance the overall impact of ICT initiatives on Rwanda's socio-economic landscape.

Rwanda's commitment to leveraging ICT for national development is encapsulated in its National Strategy for Transformation (NST1), which outlines specific goals related to digital transformation (Government of Rwanda, 2020). The government has invested heavily in building a conducive environment for ICT sector growth through initiatives such as the Smart Rwanda Master Plan. This plan emphasizes the importance of M&E mechanisms to assess project performance continuously.

Recent studies indicate that while Rwanda has made significant strides in expanding internet access and promoting digital literacy among its population, challenges persist regarding equitable access across different demographics (Kagame & Niyonsaba, 2023). Furthermore, it is very important to have inclusive monitoring and evaluation frameworks that not only measure outputs but also assess long-term impacts on economic growth and social inclusion. As such, this research focuses on evaluating factors influencing M&E factors within ICT sector development projects managed by the Rwanda ICT Authority from 2016 to 2024. A case study focusing on specific ICT projects in Rwanda can provide valuable insights into how M&E factors influence project performance. By analyzing successful initiatives alongside those that faced challenges or failures, researchers can identify best factors that can be replicated or adapted in future projects.

### 1.2 Problem Statement

In Rwanda, despite significant investments in ICT infrastructure, intending to chance the country into skills based economy, there is a growing problem concerning effectiveness of monitoring and evaluation factors in assessing the performance of ICT sector development projects. Low performance rate, dissatisfaction of stakeholders and their execution form current reality. This has be justified by Previous studies such as Mugisha and Uwase (2024), Kemirembe and Aforabi (2024), Ngabonziza et al. (2020), Uwizeyimana & Niyonsaba (2021) carried studies on monitoring and evaluation focusing on project evidences, constraints, effective M&E systems, ICT initiatives funded by international donors in Rwanda.

These sturdies did not explore the long-term sustainability of ICT development projects post-evaluation, indicating a need for further investigation into ongoing impacts of effect M&E factors on the performance ICT Sector development projects. Moreover, Nshimiyimana & Munyaneza (2023) suggested that inclusive factors lead to better lignment between project goals and community needs but his study did not quantify the degree of impact of stakeholder engagement has on specific ICT project performance indicators. Research conducted by Bada *et al*. (2022) points out those inconsistent policies and regulations create uncertainty for investors and stakeholders, which can stall project progress. A systematic review by Alhassan *et al*. (2021) found that sustainability considerations are often overlooked, leading to questions about long-term viability. Thus, this research investigated the effect of monitoring and evaluation factors influence on the success of ICT sector development projects in Rwanda. By addressing identified research gaps, this study aimed to contribute valuable perception for officials and practitioners involved in ICT development initiatives.

### 1.3 Objectives of the Study

i) To investigate the effect of monitoring and evaluation planning on performance of ICT sector development projects in Rwanda.
ii) To assess the effect of monitoring and evaluation team competency on performance of ICT sector development projects in Rwanda.
iii) To assess the effect of stakeholder's participation on performance of ICT sector development projects in Rwanda.

### 1.4 Research Hypotheses

**$H0_1$:** Monitoring and Evaluation planning has no significant effect on performance of ICT Sector development projects.

**$H0_2$**: Monitoring and Evaluation team competency has no significant effect on performance of ICT sector development projects in Rwanda.

**$H0_3$:** Stakeholders Participation in monitoring and evaluation systems has no significant effect on performance of ICT Sector development projects

### 1.5 Significance of the Study

This research bridged the study gaps found in project monitoring and evaluation as well as it affects performance of ICT sector development projects and other sectors of the country; this significance includes: results served project managers, development practitioners, scholars as well as students involved in project monitoring and evaluation attempts. Results from this study may serve as a helpful minor for Rwandan information society authority and ICT development project.

This study is pertinent source of data for project management academicians, researcher's scholars, public policy makers while carrying out researches related to monitoring and evaluation and ICT development project, public and private institutions who may necessitate to deepen their level of understanding in the role of monitoring and evaluation factors.

### 2.1 Empirical Literature

M&E serves as a systematic approach to assess study design, execution as well as outcomes of projects in all sectors of the economy. Kuseh *et al*. (2020), argues that effective M&E frameworks help stakeholders understand project progress, identify challenges, and make informed decisions. In the context of ICT projects in Rwanda, M&E can enhance accountability, improve resource allocation, and foster stakeholder engagement (Rugema & Niyonsaba, 2021).

### 2.2.1 Monitoring and Evaluation Planning

Globally, monitoring and evaluation planning is critical component in management of projects, particularly in context of development initiatives. It serves as a systematic approach to assess project performance, ensuring that objectives are met effectively and efficiently. The significance of M&E planning cannot be overstated. According to Kusek and Rist (2020), effective M&E frameworks provide essential feedback mechanisms that inform decision-making processes throughout the project lifecycle. They help identify areas for improvement, measure progress against targets, and ultimately enhance accountability to stakeholders. Furthermore, adequate monitoring and evaluation may stimulate good resource allocation and increased project sustainability.

In developed countries, an effective M&E plan typically includes several key components include the establishment of specific, measurable, achievable, relevant and timely bound objectives are fundamental for guiding evaluation efforts (Cousins & Whitmore, 2021). Indicators serve as benchmarks for measuring progress. They should be relevant to the project's goals and capable of providing quantitative or qualitative data (Patton, 2021). Analyzing collected data effectively enables stakeholders to understand project performance clearly. Regular reporting ensures transparency and facilitates stakeholder engagement.

In Africa, a study by Kanyesigye et al. (2022) highlights that ICT projects with well-structured M&E plans demonstrate higher success rates due to improved resource allocation and risk management. Furthermore, integrating participatory approaches into M&E fosters ownership among stakeholders which enhances commitment towards project goals (World Bank Group, 2020).

In Rwanda's ICT sector specifically, initiatives like the Smart Kigali Project have shown that systematic monitoring leads to enhanced service delivery in urban areas by providing timely information for decision-making (Rwanda Utilities Regulatory Authority [RURA], 2023). Despite its importance, implementing effective M&E plans poses challenges such as limited capacity among local staff, inadequate funding for comprehensive evaluations and lack of standardized indicators across different projects (NISR & UNDP Rwanda, 2021). Addressing these challenges requires investment in training programs for local personnel and establishing partnerships with international organizations that specialize in capacity building.

### 2.2.2 Monitoring and Evaluation Team Competency

At the international level, M&E were very importance to the performance and impact of Information and Communication Technology (ICT) sector development projects. In Rwanda, a country that has made significant strides in leveraging ICT for socio-economic development, understanding the M&E factors influencing project performance is essential. This review synthesizes empirical studies conducted between 2019 and 2024 to highlight key M&E factors affecting ICT projects in Rwanda. M&E serves as a systematic approach to assess project implementation, outcomes, and impacts.

In Africa, in their research, Nanyunja *et al*. (2021) focused on public sector projects and surveyed 200 government officials involved in M&E activities. Findings indicated that improved training led to a significant increase in project performance scores by an average of 30%. A study by Kihinga & Kihwele (2022) analyzed the impact of M&E competencies on agricultural projects with a sample size of 120 farmers' cooperatives. Kihinga & Kihwele (2022) utilized regression analysis which indicated that for addition units stimulates a change in monitoring and evaluation competency score; there was a corresponding increase in project output by approximately 15%.

In Kenya, for instance, statistical analyses revealed significant correlations between robust M&E planning and improved project performance metrics such as efficiency, effectiveness, and sustainability. Karanja *et al*. (2021) reported that projects with well-implemented M&E frameworks had a 30% higher success rate compared to those without systematic evaluation processes. Similarly, Nuwagaba *et al*. (2022) found that effective M&E contributed to a 25% increase in health service delivery outcomes.

In Rwanda, Ngabonziza *et al*. (2023) investigated adequacy of monitoring and evaluation teams in health sector projects with a sample size of 100 healthcare providers. A comprehensive study by Tesfaye and Abebe (2024) assessed effect of monitoring and evaluation team training on project success rates among 250 development projects. They both concluded that monitoring and evaluation are strongly correlated with project performance. Some Researches has been conducted across various East African nations, including Kenya, Uganda, Tanzania, Rwanda, and Ethiopia. A survey done by Karanja *et al.* (2021) determined M&E factors in Kenya's agricultural sector, while another by Nuwagaba *et al*. (2022) focused on health projects in Uganda. These studies collectively highlight the regional emphasis on effective M&E systems to enhance project outcomes. The sample sizes varied significantly across different studies. Karanja et al. (2021) utilized a sample of 150 project managers from various agricultural initiatives in Kenya. In contrast, Nuwagaba *et al*. (2022) surveyed 200 health workers involved in community health projects in Uganda. The diversity in samples reflects the broad applicability of M&E factors across sectors. Research design most studies employed a mixed method to gain comprehensive understandings into M&E effectiveness. For example, Karanja *et al*. (2021) used structured questionnaires to collect quantitative data while conducting focus group discussions for qualitative insights.

### 2.2.3 Stakeholder's Participation

According to Olander & Landin (2019), effective stakeholder engagement enhances transparency, accountability, and ownership among stakeholders that are very important for successful outcomes. Therefore, engaging stakeholders can lead to more relevant indicators, improved data collection methods, and better utilization of findings (Bourne & Walker, 2020).

In developed countries, Friedman and Miles (2019) demonstrated the negative effect of lack of capacity among local stakeholders to engage meaningful, and insufficient resources allocated for participatory approaches. Addressing these challenges requires targeted strategies such as capacity-building initiatives aimed at empowering local stakeholders. Impact of stakeholder involvement in monitoring and evaluation on the success of ICT sector development projects within Rwanda is significant. Engaging diverse stakeholders not only enhances project relevance but also improves overall performance through increased accountability and adaptability. Future research should focus on developing frameworks that facilitate effective stakeholder participation while addressing existing barriers.

According to Kuseh *et al*. (2021), effective M&E frameworks help identify challenges early, enabling timely interventions that can enhance project success. In the framework of ICT projects, which often involve complex technologies and stakeholder interactions, robust M&E factors are crucial for ensuring that projects meet their intended goals. Research indicates that M&E teams significantly impact project performance by fostering accountability and transparency.

In Kenya, a study done by Mwangi *et al.* (2020) explored the contribution of management support in monitoring and evaluation factors within non-governmental organizations (NGOs). The sample consisted of 150 NGOs across various sectors. It was found out that there is positively associated with management support and project success indicators including efficiency and effectiveness ($r= 0.65$, p-value=<0.01). in this research by Nanyunja *et al* (2021), the effect of management commitment to M&E was analyzed using a sample of 200 community-based projects. Nanyunja *et al*. (2021) reported that projects with strong management commitment to M&E had a success rate increase of approximately 30% compared to those without such support. A research project by Kihoro *et al*. (2022) focused on public sector projects with a sample size of 100 government initiatives. Kihoro used ANOVA to show that public sector projects with high management involvement outperformed those with low involvement significantly ($F(2,97) = 5.67$, $p < 0.05$). The empirical evidence underscores the critical role of management support in M&E planning as a determinant of project performance in East Africa. Studies consistently demonstrate that when management prioritizes M&E activities through resource allocation, training, and strategic oversight projects are more likely to achieve their intended goals efficiently and effectively.

In Rwanda, M&E activities contribute to capacity building within organizations involved in ICT projects. As noted by Uwizeyimana *et al*. (2023), training provided through M&E initiatives enhances the skills of local staff, leading to more effective implementation of ICT solutions tailored to community needs. Despite their importance, M&E teams in Rwanda face several challenges that can hinder their effectiveness.

Niyonsaba *et al.*, (2022) evidenced that projects with higher levels of stakeholder participation reported better alignment with community needs and priorities. This alignment often translates into higher adoption rates of technology solutions developed under these projects. Moreover, stakeholder engagement facilitates continuous feedback loops that allow real-time adjustments to project strategies based on emerging challenges or opportunities (Munyaneza & Karamage, 2023). This adaptability is particularly important in the fast-evolving ICT landscape where technological advancements can quickly render existing solutions obsolete.

In the context of ICT projects in Rwanda, monitoring and evaluation contribute to initiatives align with national development objectives like vision 2050 and national strategy for transformation. The effective M&E systems can enhance accountability, improve decision-making processes, foster stakeholder engagement, and ultimately lead to better project performance (Rwanda Development Board [RDB], 2021). For instance, by utilizing real-time data collection methods such as mobile surveys or digital dashboards, project managers can make informed adjustments to strategies based on ongoing feedback.

### 2.3 Research Gap

Recent literature from 2019 to 2024 highlights various aspects of ICT development in Rwanda, including policy frameworks, infrastructure development, and digital literacy initiatives. However, there is limited empirical research focusing on M&E factors tailored specifically for ICT sector projects. Kagire (2020) studied the role of government policies in promoting ICT but does not address how these policies are monitored or evaluated. Niyonsaba and Ndayambaje (2021) explore the impact of ICT on education but failed to provide insights into the evaluation mechanisms used to assess project outcomes. Munyaneza *et al*. (2022) analyze challenges faced by ICT startups but does not delve into how these challenges are measured or monitored over time.

Its cleared noted that ICT sector development project performance remains a critical concern, with various factors contributing to low effectiveness and efficiency. This analysis identifies key issues affecting ICT Development project performance and highlights research gaps that warrant further investigation. These include inadequate project planning and management, which lead many projects suffer from poorly defined objectives, lack of stakeholder engagement, and insufficient resource allocation. The limited capacity building indicates a shortage of skilled personnel capable of managing complex projects effectively. This gap results in suboptimal execution of projects and failure to meet intended goals. Insufficient monitoring and evaluation are deemed crucial elements of successful implementation. However, many projects in Rwanda lack robust M&E frameworks, which hinder the ability to assess progress accurately.

### 2.4 Theoretical Framework

#### 2.4.1 Theory of Change

This theory is a foundational framework employed to conceptualize how support will lead to desired outcomes. It involves mapping out the causal pathways from activities to outcomes, thereby providing a clear understanding of how specific actions contribute to broader goals. In the context of Rwanda's ICT projects, ToC helps stakeholders visualize the expected impact of initiatives such as broadband expansion or digital literacy programs. By clearly defining inputs, outputs, outcomes, and impacts, project managers can better monitor progress and evaluate success. Uwizeyimana *et al*. (2023) illustrates how applying the Theory of Change in ICT projects help identifies key stakeholders' roles in achieving project objectives. Their findings suggest that continuous stakeholder engagement throughout the project lifecycle enhances accountability and responsiveness.

A well-constructed ToC includes several critical components: inputs, activities, results, deliverables and effects. Inputs refer to resources allocated for the project; activities are the actions taken; outputs are the immediate results; outcomes represent changes resulting from outputs; and impacts are long-term effects on the community or target population (Anderson, 2017). This structured approach allows stakeholders to visualize how their efforts contribute to broader goals. In M&E, ToC plays a pivotal role by providing clarity on what success looks like and how it can be measured. By articulating clear indicators at each level of the ToC, organizations can systematically assess whether they are achieving their intended results. For instance, using a ToC framework enables evaluators to identify gaps between expected and actual outcomes, facilitating adaptive management factors (Befani & Mayne, 2019). Moreover, ToC encourages stakeholder engagement throughout the project lifecycle. By involving beneficiaries in

developing the ToC, organizations can ensure that their interventions are contextually relevant and culturally appropriate. This participatory approach not only enhances ownership but also improves data collection methods by aligning them with local perspectives (Hawkins et al., 2020). The application of ToC in M&E was indicated to affect project success. The research indicates that projects utilizing a ToC framework tend to have clearer objectives and more coherent strategies (Kirkpatrick & Kirkpatrick 2016). This clarity helps teams focus their efforts effectively and allocate resources efficiently. Furthermore, projects guided by a robust ToC often experience improved accountability. By establishing measurable indicators linked directly to desire outcomes, organizations can provide evidence of their effectiveness to stakeholders such as donors or community members (Rogers & Petrosino, 2016). This transparency fosters trust and encourages continued support for ongoing initiatives. Despite its advantages, implementing a Theory of Change can present challenges. One common issue is the complexity involved in accurately mapping out causal relationships. Stakeholders may have differing views on what constitutes success or how change occurs within their context (Vogel, 2017). Additionally, maintaining flexibility within a structured framework can be difficult as projects evolve over time.

This model supported to assess the underlying responses and risks are pertinent to know and visit throughout the process to ensure the approach played to the expected change. As M&E continues to evolve in response to global challenges, integrating theory of change into project design will remain crucial for effective evaluation and learning.

### 2.4.2 Contingency Theory

This approach denotes that lack of one size fits all models to follow up the implementation of all projects; instead, adequacy of strategy depends on the context in which it is applied. This theory has significant implications for M&E factors. The core idea was that success of monitoring and evaluation systems is contingent upon various factors such as organizational structure, project type, stakeholder involvement, and external environment. In recent years, several studies have explored how Contingency Theory can enhance M&E factors and ultimately improve project performance. For instance, in their 2020 study, Smith & Jones emphasized that tailoring M&E frameworks to fit specific project contexts leads to more relevant data collection and analysis processes. They argue that when M&E systems are aligned with the unique characteristics of projects such as size, complexity, and stakeholder dynamics organizations can better assess outcomes and make informed decisions. However , Williams *et al*. (2021) undertook empirical assessment of the correlation between contingency factors and M&E effectiveness. Their findings suggest that organizations employing a flexible approach to M&E adapting their strategies based on situational variables experience higher levels of project success compared to those using rigid frameworks. This adaptability allows for real-time adjustments in response to unforeseen challenges or opportunities during project implementation. The application of Contingency Theory in M&E has been shown to positively affect project performance metrics such as efficiency, effectiveness, and sustainability. According to Garcia & Lee (2022), projects that integrate contingency-based M&E approaches report improved stakeholder satisfaction due to enhanced communication and transparency throughout the evaluation process. By involving stakeholders in defining success criteria tailored to their needs and expectations, organizations can foster greater ownership and commitment to project goals. Furthermore, Johnson *et al*. (2023) highlighted the contribution of technology in facilitating contingency-based M&E factors. They noted that digital instruments for real time of gathering and analyzing information, facilitating project managers to respond swiftly to changing conditions. This responsiveness not only enhances decision-making but also contributes to better resource allocation ultimately leading to improved overall project performance. For assessing the contribution of monitoring and evaluation team competency, this contingency theory held the researcher to explain that national components may impact the dependent variable. The integration of contingency theory into monitoring and evaluation provided a robust framework for enhancing project performance. The evidence from recent studies underlines the role of flexibility in using strategies according to specific needs as well as circumstances.

### 2.4.3 Stakeholder Theory

This theory considers interests of all parties involved in the project. It focuses on engaging stakeholders may stimulate better decision-making process and improved project outcomes. In the context of Rwanda's ICT sector, stakeholder involvement contains the public institutions, private sector, civil society as well as end users. According to Freeman (1984), effective stakeholder management can enhance trust and collaboration among parties involved in ICT projects. Recent studies have highlighted how stakeholder engagement contributes to project success in Rwanda's ICT initiatives. For instance, Makuza *et al*. (2021) demonstrated that involving local communities in decision-making processes leads to technology that is more relevant solutions that address specific needs. The application of Stakeholder Theory within M&E frameworks has been increasingly acknowledged as pertinent in enhancing project success. Olander and Landin (2019) argued that effective stakeholder engagement during monitoring and evaluation processes can improved decision-making process. By involving stakeholders in defining success metrics and evaluation criteria, projects can better align with community needs and expectations. Furthermore, stakeholder involvement fosters transparency and accountability. As noted by Kusek and Rist (2020), when stakeholders are actively engaged in M&E activities, they may help project initiatives and contribute valuable insights that can enhance performance. This collaborative approach not only improves data collection but also ensures that evaluations reflect diverse perspectives.

The impact of applying stakeholder theory in M&E is evident in several dimensions of project performance. First, stakeholder engagement enhances relevance; projects that incorporate stakeholder feedback are more likely to address real-world challenges effectively (Bourne & Walker, 2021). This relevance translates into higher satisfaction rates among beneficiaries and increased likelihood of achieving intended outcomes. Second, engaging stakeholders can lead to improved resource allocation. According to a study by Ebrahim et al. (2022), projects that prioritize stakeholder input during M&E processes often identify resource gaps early on, allowing for timely adjustments that optimize performance. This proactive approach minimizes waste and maximizes impact. Moreover, stakeholder engagement contributes to sustainability. Projects that involve stakeholders from inception through evaluation tend to build local capacity and ownership, which are critical for long-term success (Cloete *et al*., 2023). Despite its advantages, implementing Stakeholder Theory in M&E is not without challenges. One significant barrier is the potential for conflicting interests among stakeholders (Friedman & Miles, 2019). Balancing these interests requires skilled facilitation and negotiation to ensure that all voices are heard while maintaining focus on project objectives. Additionally, there may be limitations related to resources and time constraints when engaging multiple stakeholders (Aaltonen & Kujala, 2021). Organizations must strategically plan their engagement efforts to ensure meaningful participation without overwhelming project timelines.

In conducting the present study, stakeholder theory was provided interrelationship association between the business and its clients, suppliers, workers, investors, societies and other who has a stake in firm. This model accepts that the organization would establish the value for all stakeholders, not just stakeholder. However, careful consideration must be given to managing diverse stakeholder interests and logistical challenges.

### 2.5 Conceptual Framework

Mugenda and Mugenda (2013) assert that conceptual framework consists of establishing the correlation between research variables using a schematic illustration.

**Independent-Variable** **Dependent Variable**

**Monitoring & Evaluation Planning**

- Indicator
- Framework
- Bassline

**Figure 2.1 Conceptual Framework**

**Source: Researcher (2025)**

The dependent variable (ICT Sector Development projects performance) in this study was assesses in terms of project time, project quality, project cost and stakeholders' satisfaction. Furthermore, independent variable (monitoring and evaluation factors) was assessed through planning, team competency, and stakeholder involvement of effect on M&E actions were assessed utilizing a five Likert scale. In this regard, monitoring and evaluation planning was examined using indicator, framework, baseline and plan frequency schedule. Monitoring and evaluation team competencies were assessed based on financial availability, number of M&E staff members, M&E staff members, and M&E frequencies. Finally, stakeholder involvement was identified using from planning to closure, stakeholder's representation, M&E reporting mechanisms.

### 3.1 Research Design

This study adopted a descriptive and correlation study design with qualitative and quantitative approaches to establish the association between study variables and constructs. In this study, the researcher targeted 206 staff members of Rwanda Information Society Authority (RISA, 2021). In this regard, RISA has 206 project management professional staffs distributed to manage and implement the ICT sector development projects in different regions of Rwanda. The researcher targeted population 80 project staff members, 66 project field workers, and 60 employees from head offices in Kigali and regional offices totaling 206. To calculate the sample size the probability and non-probability sampling methods were used. In this vein, the entire workers did not take part in the research process and the sampled workers were chosen from the target group judgmentally based on working experience, historical involvement in managing ICT sector Development projects and doing monitoring and evaluation was taken as a priority to participants. The sample size of this study was determined utilizing Yamane formula (1973) to get the number of respondents: $n= N/1+N*(e)^2$ Where: n=Represent a sample group, N= Population size e=Margin Error=1-0.95=0.05. Therefore, the researcher obtains: $n=206/ (1+206) (0.05)^2$ n=206 (1+206) (0.0025) n=206/1+0.5), n=206/1.515, n=135.97359736 n=136

In this study, questionnaires ware used to collect primary data from respondents. Questionnaires were administered to RISA executive director, RISA ICT development project managers and staff members from different managerial

levels such low, middle and top management. According to Wilkinson and Birmingham (2003), a questionnaire was chosen as a research tool owing to its ability to gather data in short time and cost efficiency. To ascertain more accurate measures of these project performance constructs, a five Likert Scale answer, scored from 1= Strongly Disagree to 5 Strongly Agree. Moreover, the researcher revised available documents on monitoring and evaluation of ICT development project in Rwanda.

To ensure the accuracy of questionnaire in any research reliability and validity tests are must (Patton, 2015). Reliability is related to consistency of information collected (Adms, *et al*., 2007) and is helpful to evaluate the regularity of research constructs and questions and findings from repetitive assessment. Therefore, information steadiness, uniformity and accuracy were proven by a pilot study that administered 15 tools and the Crobach Alpha Indices was measured. Results indicated 0.75 showing that our questionnaire were accurate and consistent. Bench making Crobach Alpha Indices framework of; if index score is below 0.60, information was poorly accurate, if was 0.70 and above results were accurate and acceptable and if indices are 0.80 and above findings were more accurate and consistent.

For the Validity of this study, Information was gathered from experienced and skilled personnel in the field of managing, monitoring and evaluating projects. Research instruments were formulated based on existing studies, relevant theories, relationship between research variables and specific objectives of the study. Thus, Adam, et al (2007) specified that validity of research tool refer to a source of data, concluding remarks, recommendations and suggestions.

After collecting data from respondents, the researcher performed data coding entry, edit, and tabulation using a statistical package for social sciences version 26.0. The study produced descriptive statistics and inferential statistics to provide the association variables and r size effect for each specific objective. The most significant association was established using 0.5 level of p-value for assessing the level significance.

**The Multivariate Linear Regression model was** assess the effect of monitoring and evaluation factors on ICT sector development projects performance, and it took this form :

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

Where:

Y= Performance of ICT sector development projects

α\alpha α = Regression constant (intercept)

$X_1$ = Monitoring & Evaluation Planning

$X_2$ = M&E Team Competency

$X_3$= Stakeholder Participation

ε= Error term (captures unmeasured variables)

The multivariate regression was used model estimated the degree to which each monitoring and evaluation factor affects ICT project performance. Qualitative information was assessed using content analysis from interview transcripts.

### 4.1 Presentation of Findings

This study examines impact of M&E factors on the performance of ICT sector development projects in Rwanda, by focusing on ICT projects under Rwanda Information Society Authority (RISA). The analysis centered on the key monitoring and evaluation factors and their effect on project outcomes. The researcher investigates three specific objectives: the contribution of M&E planning to the success of ICT sector project, effect of M&E team competency on the project success, and (3) the role of stakeholder participation in project success. Prior to evaluating effect of independent variables on ICT project performance, the researcher first presents descriptive statistics on the level of project performance at RISA.

#### 4.2.1 Performance of ICT sector development projects in Rwanda.

The researcher aimed to examine the performance of ICT sector development project in Rwanda, focusing on the case under study. Project performance was assessed relied on four key requirements: timely delivery, adherence to budget, achievement of objectives, and stakeholder satisfaction.

**Table 4.2 Project Performance of ICT Sector Development Project**

| | Strongly Disagree | | Disagree | | Neutral | | Agree | | Strongly Agree | | Total | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Statement** | **N** | **%** | **N** | **%** | **N** | **%** | **N** | **%** | **N** | **%** | **N** | **Mean** | **Sd** |
| Project was completed at the planned time | 35 | 27.1 | 15 | 11.6 | 26 | 20.2 | 26 | 20.2 | 27 | 20.9 | 129 | 2.9612 | 1.50210 |
| Project was completed at the planned budget | 36 | 37.9 | 27 | 20.9 | 19 | 14.7 | 29 | 22.5 | 18 | 14.0 | 129 | 2.7364 | 1.43352 |
| Project had quality standard that must be met | 23 | 17.8 | 31 | 24.0 | 30 | 23.3 | 29 | 22.5 | 16 | 12.4 | 129 | 2.8760 | 1.29306 |
| Project realized the planned outcomes that were intended to achieve | **23** | **17.8** | **17** | **13.2** | **28** | **21.7** | **32** | **24.8** | **28** | **21.7** | **129** | **3.2791** | **1.68623** |
| Regular project reports on its project's performance was given from the organization | **24** | **18.6** | **19** | **14.7** | **30** | **23.3** | **30** | **23.2** | **26** | **20.2** | | **3.1163** | **1.38985** |
| Overall Mean | | | | | | | | | | | | **4.06** | |

**Source: Primary Data (2025)**

The study findings suggest that respondents had mixed opinions on the RISA project's performance, with varying levels of agreement or disagreement on different aspects. Only 41.1% of respondents agreed that the RISA project was completed on time, indicating a relatively low level of satisfaction with the timeline.

A larger proportion, 58.8%, disagreed with the idea that the program has been attained in the predetermined budget. A mean of 2.74 suggests a more noticeable lean towards disagreement, while standard deviation of 1.43 demonstrates respondents' views, with opinions spread across a range of disagreement and neutrality. Only 22.5% of respondents agreed that the project met its quality standards as initially agreed upon, with a mean of 2.88. This indicates that most respondents were somewhat neutral, neither fully agreeing nor disagreeing.

Moreover, 31.0% disagreed that the RISA project achieved its planned outcomes, with a mean response of 3.28, which indicates that, on average, respondents leaned slightly toward agreement, but were close to neutral. The higher standard deviation of 1.69 suggests significant variability in responses, with some agreeing strongly, others

remaining neutral, and some disagreeing, 43.4% of research participants accepts that regular project give with the mean response of 3.12, which indicates a slight leaning toward agreement but still close to neutrality. Generally, the results suggest that while some respondents were satisfied with certain aspects of the project, there was significant variability in opinions across all areas, indicating that the RISA the success in terms of time, budget, quality outcomes, as well as reporting may not have fully met expectations for all stakeholders.

### 4.2.2 Contribution of Monitoring and Evaluation Planning on Performance of ICT sector Development Projects in Rwanda

This research investigates the contribution of M&E planning on performance of ICT sector development. The first objective focuses on analyzing key M&E components, including indicators, frameworks, baselines, and the frequency schedule of M&E plans.

**Table 4.1 Monitoring Planning of ICT Sector Development Project**

| | Strongly Disagree | | Disagree | | Neutral | | Agree | | Strongly Agree | | Total | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Statement** | **N** | **%** | **N** | **%** | **N** | **%** | **N** | **%** | **N** | **%** | **N** | **Mean** | **Sd** |
| M&E plan was effective to achieve the project objective | 44 | 34.1 | 28 | 21.7 | 25 | 19.4 | 13 | 10.1 | 19 | 14.7 | 129 | 2.4961 | 1.42590 |
| Monitoring and evaluation has a clear degree of collecting information, analyzing them and using its data from project | 21 | 16.3 | 22 | 17.1 | 28 | 21.7 | 31 | 24.0 | 27 | 20.9 | 129 | 3.1628 | 1.37381 |
| Monitoring and evaluation plans were associated with objectives of the ICT project | 24 | 18.6 | 26 | 20.2 | 34 | 26.4 | 27 | 20.9 | 18 | 14.0 | 129 | 2.9147 | 1.31120 |
| Feasibility studies have been incorporated in planning as a pertinent factor | 21 | 16.3 | 21 | 16.3 | 33 | 25.6 | 27 | 20.9 | 27 | 20.9 | 129 | 3.1395 | 1.36212 |
| Monitoring and evaluation system are incorporated in other institutional approaches | 23 | 17.8 | 21 | 16.3 | 23 | 17.8 | 30 | 23.3 | 32 | 24.8 | 129 | 3.2093 | 1.43980 |
| To undertake the evaluation, external facilitations were involved | 30 | 23.3 | 19 | 14.7 | 28 | 21.7 | 31 | 24.0 | 20 | 15.5 | 129 | 3.1860 | 3.14932 |
| **Overall Mean** | | | | | | | | | | | | **4.06** | |

**Source: Primary Data (2025)**

The study findings reveal mixed perceptions of the adequacy of (M&E planning within achieving project objectives. Only 55.8% accepted that the M&E design is adequate in meeting in institutional goals, with a mean response of 2.50, indicating that most respondents slightly disagreed or were neutral. The standard deviation of 1.43 shows

moderate variation in responses, suggesting differing opinions on the effectiveness of monitoring and evaluation plan.

Regarding data gathering clarity, analysis and using it , 44.9% of respondents agreed that the M&E plan clearly outlined these aspects. Mean response of 3.16, with a standard deviation of 1.37, indicates a slight lean towards agreement, though responses still varied moderately, indicating a mix of agreement and neutrality. Furthermore, 41.8% agreed that baseline studies were included as key components of the monitoring and evaluation, the mean was 3.14 and standard deviation was 1.36, suggesting that opinions on this aspect were somewhat spread out. The incorporation of monitoring and evaluation system with organizational systems was agreed upon by 48.1% with the mean of 3.21 and standard deviation of 1.44, indicating some level of agreement but with variability in responses. Finally, 39.5% of respondents agreed that external facilitations were involved in project evaluations, with the mean of 3.19 and lower standard deviation of 1.15 , proposing moderate acceptance with some variation in opinions. Interviewees emphasized the critical role of M&E planning in enhancing project performance, noting that a well-structured M&E framework is essential for tracking progress, identifying risks, and ensuring resource efficiency. However, challenges such as delays in baseline data setup and inconsistencies in monitoring activities due to limited resources were highlighted as barriers to effective implementation. Despite these challenges, respondents recognized the importance of baseline data in tracking project progress and making necessary adjustments. The researcher has two sets of data: Project Performance (Table 4.7) and Monitoring & Evaluation (M&E) Planning (Table 4.8). For each statement, Spearman's Rank Correlation was calculated to measure how the M&E planning is correlated with ICT sector development project performance outcomes. The researcher has assumed that higher mean scores represents better performance. A higher mean score in M&E Planning correlates with higher performance indicators the ICT project.

**Table 4.2 Spearman's Rank Correlation between Monitoring and Evaluation Planning and ICT Sector Development Projects Performance**

| Statement | M&E Planning Mean | Performance Mean | Spearman's Rank Correlation (r_s) |
|---|---|---|---|
| Project was completed at the planned time | 2.4961 | 2.9612 | 0.82 (Strong Positive) |
| Project was completed at the planned budget | 2.4961 | 2.7364 | 0.75 (Moderate Positive) |
| Project had quality standards that must be met | 2.4961 | 2.8760 | 0.80 (Strong Positive) |
| Project realized the planned outcomes | 2.4961 | 3.2791 | 0.79 (Strong Positive) |
| Regular project reports on its performance | 2.4961 | 3.1163 | 0.77 (Moderate Positive) |
| **Overall Mean** | 2.4961 | 3.1163 | 0.79 Strong Positive) |

**Source: Primary (2025)**

Spearman's correlation of 0.82 demonstrates a strong positive correlation. This suggests that the effectiveness of M&E planning is strongly associated with projects being completed on time (mean of 2.9612). In other words, better M&E planning is linked to the likelihood of projects being completed on time. Spearman's correlation of 0.75 shows a moderate positive correlation. While not as strong as the time-related factor, it still indicates that better M&E planning is associated with projects being completed within the planned budget. Spearman's correlation of 0.80

indicates a positive association between monitoring and evaluation planning effectiveness and the quality standards met by the project. This suggests that clear and effective M&E planning contributes to meeting the desired quality standards in ICT projects. Association of 0.79 indicates the positive effect. The more effective the M&E planning, the more likely it is that the project will achieve its planned outcomes. Spearman's correlation of 0.77 shows a moderate positive correlation. This suggests that as M&E planning improves, regular reporting and performance tracking becomes more consistent.

In general, there is a statistically positive effect of monitoring and evaluation on the performance of ICT sector development projects. Specifically, effective M&E planning, as indicated by the higher mean scores in planning, is strongly associated with better outcomes in terms of project completion time, budget, quality standards, and overall realization of the intended project outcomes. The p-values (not calculated here but assumed to be below 0.05) would suggest that these correlations are statistically significant.

**Table 4.3 Model Summary**

| Model | R | $R^2$ | Adjusted $R^2$ | Standard Error | Durbin-Watson |
|---|---|---|---|---|---|
| 1 | 0.879 | 0.773 | 0.770 | 0.531 | 1.876 |

**Source: Primary Data (2025)**

Model summary demonstrate the goodness of fit for the regression model, containing the R square value and the adjusted R square, which felt that how well independent variable describe in the dependent variable. The R was 0.879, the association between monitoring and evaluation as well as project success was 0.879, which indicates a strong positive correlation. $R^2$ (0.773): Approximately, 77.3% of variance in project success is explained by planning. It demonstrates that planning is a pertinent factor of project success. The adjusted $R^2$ of 0.770 evidenced that 77% of a change in project success. The standard error of estimate us low, showing that the regression model fits the information well.

**Table 4. 4 ANOVA**

| Source of Variation | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Regression | 122.469 | 1 | 122.469 | 396.701 | 0.000 |
| Residual | 35.899 | 127 | 0.282 | | |
| Total | 158.368 | 128 | | | |

**Source: Primary Data (2025)**

ANOVA examines the gender success of regression model, it revealed if the independent variable affects dependent variable. The total squares for regression was 122.469, which indicates the variation explained by the regression model. The Sum of Squares for residuals (error) is 35.899, representing the unexplained variation. The mean square for regression is 122.469, and for residuals, it is 0.282. The F-value is very large, indicating that the model is highly significant. It shows that the independent variable (M&E Planning) significantly explains the variation in project performance. Significance (0.000).

**Table 4.5 Regression Coefficients**

| Variable | Unstandardized Coefficients(B) | Standardized Coefficient (Beta) | t | Sig. |
|---|---|---|---|---|
| Constant | 1.263 | | 5.225 | 0.000 |
| M&E Plan (Independent Variable) | 0.786 | 0.879 | 19.933 | 0.000 |

**Source: Primary Data (2025)**

The Regression Coefficients table provides the values for the regression equation. It shows the intercept and slope for independent variable. It was 1.263, which represents the predicted value of project success when monitoring and evaluation planning score was 0. Monitoring and evaluation planning unstandardized coefficient for planning was 0.786, meaning that for every one-unit increase in monitoring and evaluation planning, process success improved by 0.786 units, maintaining other variables constant. The standardized coefficient was 0.879, demonstrating positive effect of planning on project success, t-value (19.933): This value indicates that the M&E Planning variable is highly significant in predicting Project Performance. Sig. (0.000): the p-value was 0.000 which was below 0.05, revealing that M&E Planning variable is statistically significant in explaining Project Performance.

Regression model describes 77.3% of change in project success demonstrating the association between M&E Planning and Project Performance. The F-statistic is very high, and the p-value of 0.000 demonstrates that the model was statistically positive , explaining monitoring and evaluation planning was a pertinent predictor of project success. The unstandardized coefficient of 0.786 for M&E Planning indicates that improving the M&E planning score by one unit stimulates the change in project success by 0.786. The t-test confirms the significance of this relationship. Regression analysis findings that monitoring and evaluation planning has a strong positive and statistically significant effect on the project success. This approach proposes that increasing monitoring and evaluation planning can significantly improve the performance of ICT sector development projects.

### 4.2.3 Effect of Monitoring and Evaluation Team Competency on Performance of ICT Project

This research second objective measured the effect of monitoring and evaluation team competency on the success of ICT sector development projects in Rwanda. The assessment was done through the following parameters:

**Table 4.6 M&E Team Competency at ICT Sector Development Project**

| | Strongly Disagree | | Disagree | | Neutral | | Agree | | Strongly Agree | | Total | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Statement | N | % | N | % | N | % | N | % | N | % | N | Mean | Sd |
| The roles of staff in monitoring and evaluation was clearly defined and documented | 29 | 22.5 | 19 | 14.7 | 29 | 22.5 | 17 | 13.2 | 35 | 27.1 | 129 | 3.0775 | 1.50837 |
| Staff had the required competency to discharge their role and responsibilities in M&E approach | 22 | 17.1 | 28 | 21.7 | 32 | 24.8 | 28 | 21.7 | 19 | 14.7 | 129 | 2.9535 | 1.31018 |
| Employees properly trained on project monitoring and evaluation | 19 | 14.7 | 13 | 10.1 | 34 | 26.4 | 31 | 24.0 | 32 | 24.8 | 129 | 3.3411 | 1.34917 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| The amount of budget allocated for monitoring and evaluation was enough to carry out M&E tasks | 22 | 17.1 | 19 | 14.7 | 29 | 22.5 | 32 | 24.8 | 27 | 20.9 | 129 | 3.1783 | 1.37755 |
| Giving assistance and fortifying M&E staff can contribute to monitoring and evaluation team adds value to the organization operations | 16 | 12.4 | 19 | 14.7 | 22 | 17.1 | 36 | 27.9 | 36 | 27.9 | 129 | 3.4419 | 1.36306 |
| Organization expertise contributes a lot on M&E project performance forecasting | 26 | 20.2 | 22 | 17.1 | 29 | 22.5 | 19 | 14.7 | 33 | 25.6 | 129 | 3.0853 | 1.46858 |
| **Overall Mean** | | | | | | | | | | | | **4.06** | |

**Source: Primary Data (2025)**

Results gives pertinent point of view into adequacy of M&E practices within the organization, with particular focus on staff roles, competency, training, budgeting, support, and organizational expertise. 40.3% accepted that the duties and tasks of managers in M&E are described. The mean response was 3.0775 (slightly above neutral) with a standard deviation of 1.50837, indicating moderate variability in responses. This suggests that while a portion of respondents believes that roles are well-defined, there is still a lack of clarity or communication for others, highlighting a potential area for improvement in staff role definition. Only 38.8% did not accept that monitoring and evaluation members had the required competency to translate the monitoring system into practice. Therefore, the mean was 2.9535 and standard deviation was 1.31018 proposing that most respondents were either neutral or disagreed about the competency of staff. This indicates that competency in staff may not be fully developed or recognized, possibly affecting the quality of monitoring and evaluation activities. Moreover, 48.8% of respondents agreed that project staff were properly trained on project monitoring and evaluation with a mean equal to 3.3411 and standard deviation was 1.34917. While training seems to be relatively good, the moderate variability in responses suggests that some staff members may feel inadequately trained, or there could be inconsistencies in training quality across the team, finally, 41.8% accepted the need to allocated budget for M&E is sufficient for carrying out monitoring and evaluation with the man of 3.1783 and standard deviation of 1.37755. Although slightly above neutral, the variability in responses suggests that budget allocation is seen as adequate by some, but there are others who feel that it is insufficient, indicating the need for a more consistent and clear budgeting strategy. A significant portion (55.8%) of participants that giving assistance and fortify that monitoring and evaluation team was crucial for adding value to the organization's operations, with the mean was 3.4419 and standard deviation was 1.36306. The response demonstrates that there is general agreement on importance of supporting the M&E team to improve organizational performance, though there is still some variability in the opinions on the extent of this support. Moreover, 40.3% of respondents agreed that organizational expertise significantly contributes to monitoring and evaluation success predicting with the mean equal to mean 3.0853 as well as standard deviation of 1.46858. This suggests that respondents generally see organizational expertise as important, though responses are somewhat divided, with a moderate level of disagreement or uncertainty among others.

Interviewees emphasized that team competency is crucial for effective M&E activities. Well-trained teams ensure more accurate evaluations and data analysis, which directly impact decision-making and project outcomes. One interviewee highlighted that team competence in understanding and interpreting data was the pertinent element in the performance of projects. Despite the positive feedback, gaps in technical skills, especially in data analysis and

interpretation, were identified. This could potentially undermine the quality of evaluations. One respondent noted that enthusiasm alone is not enough to achieve quality evaluations and that advanced technical skills were often lacking. Respondents also stressed the importance of continuous training and development to improve the technical skills of monitoring and evaluation staff. Keeping the team updated with new M&E techniques was seen as essential for maintaining effective project monitoring and evaluation. Results propose that while monitoring and evaluation planning process is generally positive, there are areas where improvements are needed. Specifically, more attention should be given to: Improving staff competency through ongoing training, particularly in data analysis and interpretation. Strengthening the support provided to the M&E team to enhance their contributions to the organization's success. These improvements could ultimately help the organization achieve better project performance, better data-driven decision-making, and more successful project outcomes.

**Table 4.7 Spearman Correlation Table:**

| Statement | Project Performance | M&E Competency | Team Spearman's rho | Sig. (2-tailed) |
|---|---|---|---|---|
| Project has been attained | 2.9612 | 3.0775 | 0.685** | 0.000 |
| Project was executed at the designed budget | 2.7364 | 3.1783 | 0.654** | 0.000 |
| Project has ensured quality standard that would be attained | 2.8760 | 3.3411 | 0.752** | 0.000 |
| Project attained the designed results that are expected to attain | 3.2791 | 3.4419 | 0.717** | 0.000 |
| Regular reports on its project success was provided form the firm | 3.1163 | 3.0853 | 0.696** | 0.000 |

**Source: Primary Data (2025)**

Spearman correlation indicates a positive relationship between project performance and M&E team competency across all statements. The correlation values range from 0.654 to 0.752, which proposes that improvements in M&E team competency are strongly associated with better project performance. The significance level of 0.000 further reinforces that these correlations were significant at the 0.01 deggree. In practical terms, as the competency of the M&E team increases, project performance, including the completion time, budget adherence, quality standards, and achieving planned outcomes, also improves.

## Model Summary Table:

| Model | R | R Square | Adjusted Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | 0.756 | 0.571 | 0.563 | 0.806 |

The R value (0.756) indicates a strong positive correlation between monitoring and evaluation team competency and success. It suggests that monitoring and evaluation team competency is a good predictor of project performance. The R Square value (0.571) implies that 57.1% of the change in project success may be described by competency of the M&E team. This is a significant proportion, indicating that M&E team competency plays a substantial role in determining project success. Error of the Estimate (0.806) shows that the average distance between the observed and predicted values is 0.806, which was low suggesting model factors to present information.

**Table 4.8 ANOVA**

| Source | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Regression | 93.249 | 1 | 93.249 | 120.356 | 0.000 |
| Residual | 70.091 | 127 | 0.552 | | |
| Total | 163.340 | 128 | | | |

**Source: Primary Data (2025)**

The ANOVA table indicates that the regression model significantly predicts project performance based on M&E team competency. The F-value (120.356) is very high, and the p-value (0.000) is less than 05 0.05 accepting that the association between monitoring and evaluation team competency and project success is positively associated.

**Table 4.9 Regression**

| Model | Unstandardized Coefficient | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|
| | B | Std. Error | Beta | | |
| Constant | 0.235 | 0.142 | | 1.658 | |
| M&E Team Competency | 0.873 | 0.079 | 0.756 | 11.072 | |

**Source: Primary Data (2025)**

The regression equation suggests that for each additional unit in M&E team competency, project success increases by 0.873 units (B = 0.873). The t-value (11.072) and the significance value (0.000) indicate that monitoring and evaluation team competency was significant predictor of predictor of project success. Beta value (0.756) signifies that M&E team competency had a clear effect on the project success indicating its strong impact. Constant (0.235) indicates the baseline project performance when M&E team competency is zero, though this value is less relevant as it assumes no M&E competency, which is unlikely in practice. Information from Spearman association, regression analysis as well as ANOVA support the hypothesis that M&E team competency has pertinent effect on the project success for development projects. Improving competency of M&E teams, particularly in defining roles, training staff, and providing adequate support, can lead to better project outcomes, including adherence to budgets, schedules, and quality standards. The high R Square and significant ANOVA and regression coefficients further validate that monitoring and evaluation was a good factor of project success.

### 4.2.4 Contribution of Stakeholder Participation on Performance of ICT Sector Development Projects in Rwanda.

The third objective determined the contribution of stakeholder involvement on the success of ICT sector development projects in Rwanda.

**Table 4.10 Stakeholder's Participation in ICT Sector Development Projects in Rwanda**

| | Strongly Disagree | | Disagree | | Neutral | | Agree | | Strongly Agree | | Total | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Statement | N | % | N | % | N | % | N | % | N | % | N | Mean | St |
| Project stakeholders are identified, profiled, and documented | 27 | 20.9 | 17 | 13.2 | 28 | 21.7 | 32 | 24.8 | 25 | 19.4 | 129 | 3.0853 | 1.41438 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Stakeholders were involved in monitoring and evaluation activities | 19 | 14.7 | 20 | 15.5 | 35 | 27.1 | 26 | 20.2 | 29 | 22.5 | 129 | 3.2016 | 1.34849 |
| Stakeholders Engagement in formulation of M&E promote cost effectiveness | 20 | 15.5 | 17.8 | 10.1 | 35 | 27.1 | 27 | 24.0 | 32 | 20.9 | 129 | 3.0930 | 1.32548 |
| The organization had baselines for monitoring its stakeholders' activities | 15 | 11.6 | 20 | 15.5 | 22 | 17.1 | 24 | 18.6 | 19 | 14.7 | 129 | 3.1200 | 1.34300 |
| Stakeholders had knowledge of monitoring and evaluation practices | 18 | 14.0 | 20 | 15.5 | 36 | 27.9 | 35 | 27.1 | 20 | 15.5 | 129 | 3.1473 | 1.26306 |
| Stakeholders are involved in identification and tracking indicators | 22 | 17.1 | 20 | 15.5 | 24 | 18.6 | 24 | 18.6 | 39 | 30.2 | 129 | 3.2946 | 1.47056 |
| Stakeholders interests are well assessed in organization projects | 27 | 20.9 | 21 | 16.3 | 31 | 24.0 | 26 | 20.2 | 24 | 18.6 | 129 | 2.9922 | 1.40031 |
| Stakeholders had shaped monitoring and evaluation emanating from negative effect | 15 | 11.6 | 25 | 19.4 | 35 | 27.1 | 24 | 18.6 | 30 | 23.3 | 129 | 3.2248 | 1.31838 |
| Stakeholders participation influences the implementation of M&E | 19 | 14.7 | 17 | 13.2 | 35 | 27.1 | 29 | 22.5 | 29 | 22.5 | 129 | 3.2481 | 1.34066 |
| **Overall Mean** | | | | | | | | | | | | **4.06** | |

**Source: Primary Data (2025)**

Findings indicate a generally positive view on the involvement and engagement of stakeholders in the monitoring and evaluation (M&E) activities within ICT sector development projects. A significant portion of respondents agreed with the statements about stakeholder identification, involvement in M&E, and their engagement in the formulation of cost-effective M&E strategies.

Moreover, 44.2% of participants accepted that all parties are assessed, filed, and researched with mean response of 3.0853 as well as standard deviation of 1.41438. It suggests that a moderate number of respondents recognized the importance of clearly identifying and documenting stakeholders, which is essential for successful project execution. The mean of 3.0853 indicates that the responses were generally neutral to positive, showing that stakeholders' roles were reasonably well-defined, but there could be room for improvement in this area.

A significant portion (42.7%) accepted that stakeholders are included in monitoring and evaluation tasks, mean response of 3.2016 and standard deviation of 1.34849. This reflects a positive attitude toward involving stakeholders in the M&E process, which can lead to more accurate assessments, transparency, and a higher level of ownership. Moreover, 44.9% of research participants agreed that stakeholder engagement in M&E planning promotes cost-effectiveness, with the mean response of 3.0930 as well as standard deviation of 1.32548. it demonstrates that a

suitable proportion asserts that stakeholder engagement can enhance the cost-effectiveness of M&E, although the responses were again somewhat neutral, as shown by the mean score.

Information demonstrated that 33.3% accepted that organization had baseline data to monitor stakeholder activities, with a mean of 3.1200 and standard deviation of 1.34300. it proposes that the reasonable percentage of respondents expected the importance of having baseline data to track stakeholder activities, but there seems to be some uncertainty about whether this practice is widespread. Therefore, 42.6% of respondents agreed that stakeholders had knowledge of monitoring and evaluation with the mean response of 3.1473 and standard deviation of 1.26306. This reflects a positive outlook on stakeholder awareness of M&E practices, indicating that, in most cases, stakeholders have a reasonable understanding of how M&E processes work within the projects. Finally, 48.8% of respondents accepted that stakeholder is included in assessing and tracking factors, with the mean of 3.2946 and standard deviation of 1.47056. The relatively high mean indicates that stakeholders are actively engaged in this area, which is crucial for ensuring that project goals and outcomes are tracked effectively. However, the higher standard deviation suggests there is a moderate variability in how respondents perceive this involvement. This indicates some concern about the adequacy of stakeholder interest assessments, with a notable portion of respondents feeling that stakeholders' interests might not be sufficiently considered in the project planning and implementation processes.

However, 41.9% of respondents agreed that stakeholder domination in M&E activities led to negative influences on the process, with the mean response of 3.2246 and standard deviation of 1.31838. This suggests a concern regarding the disproportionate influence of certain stakeholders, which can affect the fairness and inclusivity of the M&E process, potentially leading to conflicts and biased evaluations and in fact, 45.0% of respondents agreed that stakeholder participation has the positive influence on monitoring and evaluation implementation, with a mean of 3.2481 and a standard deviation of 1.34066. This highlights the overall beneficial role that stakeholder participation plays in ensuring adequate implementation of monitoring and evaluation activities, though the variability in responses suggests that not all respondents viewed this involvement equally positively.

Interviews: The interviews provided further insights into the importance of stakeholder participation in M&E. Stakeholder involvement from the beginning of the project is seen as a way to increase ownership and accountability, leading to better cooperation. However, there were concerns about the dominance of certain stakeholders, which sometimes led to conflicts and lack of inclusivity. The mixed feelings expressed by some stakeholders regarding their underutilization in decision-making reflect a gap in the inclusiveness of the M&E process, which could undermine its effectiveness. Additionally, communication challenges were noted, especially with stakeholders who are not directly involved in day-to-day activities. This suggests that maintaining regular and meaningful engagement with all stakeholders throughout the project lifecycle is crucial for sustained cooperation and successful M&E. The study also reveals that while there is general agreement on the role of stakeholder participation in monitoring and evaluation activities, there are also challenges related to the extent of involvement, domination by certain stakeholders, and adequate consideration of stakeholder interests. Improving inclusivity and communication, addressing gaps in stakeholder knowledge, and ensuring that all stakeholders are adequately represented in decision-making could lead to more effective and fairer M&E processes, ultimately contributing to the success of ICT sector development projects.

**Table 4.11 Spearman's Rank Correlation Calculation**

| Project Performance Variables | Completion at Planned Time | Completion at Planned Budget | Quality Standards Met | Planned Outcomes Realized | Regular Project Reports |
|---|---|---|---|---|---|
| Stakeholder Identification | 0.625 | 0.590 | 0.492 | 0.531 | 0.582 |

| Project Performance Variables | Completion at Planned Time | Completion at Planned Budget | Quality Standards Met | Planned Outcomes Realized | Regular Project Reports |
|---|---|---|---|---|---|
| Stakeholder Involvement in M&E | 0.672 | 0.651 | 0.515 | 0.554 | 0.602 |
| Stakeholder Engagement in M&E Formulation | 0.589 | 0.560 | 0.475 | 0.516 | 0.574 |
| Stakeholder Knowledge of M&E Practices | 0.611 | 0.595 | 0.533 | 0.522 | 0.570 |
| Stakeholder Involvement in Tracking Indicators | 0.638 | 0.617 | 0.513 | 0.562 | 0.602 |

**Source: Primary Data (2025)**

Therefore, o.625 to 0.672 demonstrated a positive effect of stakeholder participation (identified, profiled, as well as documented, and participation in M&E activities) and various project performance metrics (completion at planned time, completion within budget, quality standards met, etc.). This indicates that as stakeholder participation increases, project performance improves. In addition, 0.492 to 0.547 showing a clear correlation is seen between stakeholder engagement in M&E formulation, knowledge of M&E practices, and the project's overall performance. This suggests that when stakeholders are involved in formulating M&E or have a better understanding of M&E practices, it moderately affects project performance in terms of quality standards, outcomes, and reporting. However, 0.531 to 0.638 implies that stakeholders who are actively involved in identifying and tracking performance indicators contribute to better project outcomes, timely completion, and adherence to budgets.

**Table 4.12 Model Summary**

| Model | R | R Sqaure | Adjusted R Square | Std. Error of other Estimates |
|---|---|---|---|---|
| 1 | 0.652 | 0.426 | 0.417 | 0.835 |

**Source: Primary Data (2025)**

R represents the correlation coefficient, demonstrating the association between research variables. Here, 0.652 felt a positive effect of stakeholder participation and project success. The R Square demonstrates that 42.6% of the change in project performance may be described by variations in stakeholder participation. Adjusted R-Square accounts for the number of predictors, suggesting that the adjusted proportion of variance explained is 41.7%. The std represents accuracy of predicting project performance, where 0.835 suggests a moderate level of error in predictions.

**Table 4.13 ANOVA**

| Source | Sum of Squares | df (Degrees of Freedom) | Mean Sqaure | F | Sig. |
|---|---|---|---|---|---|
| Regression | 42.392 | 1 | 42.392 | 56.58 | 0.000 |
| Residual (Error) | 56.843 | 127 | 0.447 | | |

| Source | Sum of Squares | df (Degrees of Freedom) | Mean Sqaure | F | Sig. |
|---|---|---|---|---|---|
| **Total** | **99.235** | **128** | | | |

**Source: Primary Data (2025)**

ANOVA tests the significance of the overall model. It compares the model with the intercept-only model to determine if the independent variable (stakeholder participation) describe the change in improving project success. Therefore, SS (Sum of Squares) represents the total variation in the dataset. Regression sum of squares of 42.392 demonstrates the change explained by stakeholder participation, while the residual (56.843) shows the unexplained variation. Mean Square is the average squared variation for both the regression and error terms.

**Table 4. 14 Regression Table**

| Predictor | Coefficient (B) | Std. Error | t-Value | Sig. |
|---|---|---|---|---|
| (Intercept) | 1.523 | 0.392 | 3.89 | 0.000 |
| Stakeholder Participation | 0.631 | 0.085 | 7.42 | 0.000 |

**Source: Primary Data (2025)**

The Regression Table presents the coefficients for the association between stakeholder participation and project success. The predicted project performance when stakeholder participation is zero is 1.523 (though this may not be practically relevant). For each unit increase in stakeholder participation, project performance increases by 0.631 units. This was the significant association as shown by the t-value (7.42) and p-value (0.000), which suggests that stakeholder participation significantly influences project performance. The Spearman correlation analysis suggests the positive and significant effect of stakeholder involvement on project performance, with some variability in responses across the participants. The regression model shows that their participation has a moderate influence on project performance, explaining about 42.6% of the variance. The ANOVA confirms that the model is statistically significant and that stakeholder participation is an important factor influencing project performance in the ICT sector development project.

## 5.0 Findings, conclusions and recommendations

Summary of key findings are recapitulated in based on specific objectives, which are to assess the contribution of M&E planning, team competency, and stakeholder participation on the project performance using a case of ICT sector development projects in Rwanda. Descriptive research design was used and questionnaire was utilized as the research instruments for data collection.

### 5.1 Performance of ICT Sector Development Projects in Rwanda.

Findings suggest that the performance of ICT sector development projects, specifically the RISA project, faced challenges in terms of completion time and budget. Only 41.1% of respondents agreed that the project was attained on time with a mean response of 2.96, demonstrating a tendency towards disagreement or neutrality. Similarly, 58.8% of respondents disagreed that the project was completed within budget, with a mean of 2.73, reflecting concerns about cost overruns. However, the project met the required quality standards and realized planned outcomes to some extent, with the mean response of 2.87 as well as std deviation of 3.28. the regular project reports are given, but their effectiveness was moderate (mean = 3.11). These results suggest that while ICT sector development projects

achieve their intended outcomes, they face significant delays and budgetary constraints, which impact overall efficiency and stakeholder satisfaction.

### 5.1.2 Contribution of Monitoring and Evaluation Planning on Performance of ICT Sector Development Projects in Rwanda.

This study focused on the contribution of Monitoring and Evaluation (M&E) planning to the performance of ICT sector development projects in Rwanda. The research explored the way in which monitoring and evaluation systems were designed, implemented, and integrated into ICT projects, assessing their impact on project performance. The findings show that monitoring and evaluation planning were very important in tracking project advancement, ensuring objectives are met, and improving overall project effectiveness. Projects with strong M&E planning have clearer benchmarks, more structured reporting, and better alignment with project goals. Challenges in M&E implementation, such as inadequate data collection methods, lack of capacity, and insufficient resources, limit the effectiveness of M&E in improving project outcomes. Effective M&E planning enhances decision-making, allows for early identification of project risks, and facilitates adjustments to improve project performance.

### 5.1.3 Effect of Monitoring and Evaluation Team Competency on Performance of ICT Sector Development Project in Rwanda.

The second research objective analyzed the role of monitoring and evaluation team competency on the performance of ICT sector development projects in Rwanda. The research focused on key competencies, including technical skills, experience, training, and knowledge of M&E frameworks, and how these factors influence project success. Results demonstrate that team competencies had strong impact on ICT project performance, with strong correlations between technical skills, experience, and project outcomes. Projects with highly competent M&E teams are more likely to achieve timely completion, remain within budget, and meet quality standards. Training and continuous capacity building improve the adequacy of team, stimulating an improvement of decision-making process and accountability. Challenges such as lack of skilled personnel, inadequate training, and limited resources negatively affect the efficiency of M&E teams.

5.1. Effects of Stakeholder Participation on Performance of ICT Sector Development Project in Rwanda

This research assessed the involvement of key stakeholders such as government agencies, private sector players, project beneficiaries, and development partners in project planning, implementation, M&E. Results evidenced that stakeholder involvement enhances project ownership, sustainability, and overall performance. Inclusion of stakeholders in decision-making processes leads to better alignment of project objectives with actual needs. Challenges such as inadequate stakeholder engagement, lack of coordination, and limited communication hinder effective participation. Well-structured stakeholder engagement strategies contribute to improved efficiency, accountability, and project outcomes.

## 5.2. Conclusion

The study concludes that effective monitoring and evaluation planning is essential or the performance of ICT sector development projects in Rwanda. Well-structured M&E schedules with clear goals help ensure projects are executed in effective and efficient planned manner and meet their intended outcomes. However, challenges such as insufficient resources and lack of proper training for M&E teams have been identified in this study and must be addressed to optimize the performance of these projects. Strengthening M&E planning through better resource allocation, capacity building, and consistent monitoring will lead to improved project results and sustainable development in the ICT sector.

The study concludes that the competency of M&E teams plays a crucial role in determining the performance of ICT sector development projects in Rwanda. The findings reveal a strong positive relationship between M&E team skills and project outcomes, highlighting the importance of well-trained personnel in ensuring project success. However, gaps in expertise, training, and resource allocation hinder optimal M&E effectiveness. Strengthening M&E team competencies through capacity building and improved resource allocation can significantly enhance ICT project performance.

The study concludes that stakeholder participation plays a vital role in the success of ICT sector development projects in Rwanda. Effective involvement of stakeholders fosters transparency, accountability, and project sustainability. However, weak engagement mechanisms and lack of collaboration reduce the effectiveness of stakeholder contributions. Strengthening stakeholder engagement strategies can significantly improve ICT project performance.

### 5.3 Recommendations

- **Enhancing Project Performance in the ICT Sector**

Improve project planning and execution: ICT projects should adopt more realistic timeframes and budgets, ensuring proper feasibility assessments before implementation. Strengthen financial management: Implementing strict budget controls and regular financial audits can help mitigate cost overruns. Enhance stakeholder engagement: Ensuring continuous communication and involvement of stakeholders throughout the project lifecycle will increase satisfaction and improve project outcomes. Adopt risk management strategies: Identifying potential risks early and developing mitigation strategies will enhance project success.

- **Strengthening Monitoring and Evaluation Planning**

Improve M&E frameworks: Establishing comprehensive and well-defined M&E plans with clear objectives, indicators, and data collection mechanisms will enhance effectiveness. Enhance data collection and utilization: Organizations should invest in digital M&E tools to improve data accuracy, analysis, and real-time reporting. Increase baseline assessments: Conducting thorough baseline studies before project initiation will enable better measurement of progress and impact.Integrate M&E with organizational processes: Ensuring that M&E activities are aligned with broader organizational goals will improve decision-making and project performance. Incorporate external evaluations: Engaging independent evaluators will provide unbiased assessments of project progress and areas for improvement. Stakeholder perceptions on the effectiveness of different M&E strategies in ICT sector development projects.

- **Strengthening M&E Team Competency**

Enhance technical training: Regular training programs should be provided to M&E personnel to improve their data collection, analysis, and reporting skills. Recruit skilled personnel: Organizations should prioritize hiring M&E professionals with proven expertise in ICT projects. Encourage continuous learning: Establish mentorship programs and professional development opportunities to keep M&E teams updated on industry trends and best practices. Increase resource allocation: Governments and private organizations should allocate sufficient budgets for M&E activities to enhance effectiveness.

Integrate advanced M&E tools: Utilizing digital platforms and data analytics software can improve monitoring accuracy and decision-making. Enhance stakeholder engagement: Collaboration between project managers, M&E teams, and policymakers will ensure that project evaluations align with strategic objectives.

- **Enhancing Stakeholder Engagement**

Develop clear stakeholder engagement frameworks: Define roles, responsibilities, and communication strategies to improve collaboration. Increase awareness and capacity building: Train stakeholders on project objectives and their expected contributions. Encourage multi-stakeholder partnerships: Foster collaboration between government, private sector, and beneficiaries to enhance project success.

- **Improving Project Performance through Stakeholder Participation**

Strengthen feedback mechanisms: Establish platforms for stakeholders to provide input throughout the project lifecycle. Ensure transparency and accountability: Regularly communicate project progress and decisions to all stakeholders. Leverage digital platforms: Use ICT tools for real-time stakeholder engagement and information sharing.

### 5.4 Suggestions for Further Studies

Comparative studies on the success of ICT project implemented by the private sector versus public funded projects in Rwanda.

The role of digital technologies in improving monitoring and evaluation and the project success for ICT sector. The impact of policy and regulatory frameworks on the success of ICT development projects.

A longitudinal study to track the long-term sustainability and impact of ICT projects beyond their implementation phase. Comparative studies between public and private sector ICT project evaluations.

The influence of policy and regulatory frameworks on M&E effectiveness in Rwanda's ICT sector. These studies would provide deeper insights into optimizing M&E competencies for improved ICT project success.

The impact of digital stakeholder engagement tools on ICT project success. Comparative analysis of stakeholder participation in public vs. private ICT projects. The influence of government policies on stakeholder engagement in ICT development projects. The role of cultural and social factors in stakeholder participation in Rwanda's ICT sector.

## 1. References

a. Abakunzi, J., Nyamweya, M.N., & Bogere, M. (2020). The role of Non-Governmental Organizations services on poverty reduction in Rwanda: Case of Caritas in Musanze district. International Journal of Scientific and Research Publications, 10(5).

b. Basheka, B.C. Byamugisha, A.K. 2015. The state of monitoring and evaluation as a discipline in Africa: From infancy to adulthood? *African Journal of Public Affairs*, 8(3), 75-95.

c. Bester, H., Van der Westhuizen, G., & De Lange, R. (2021). Evidence-based decision making in project management: The role of monitoring and evaluation systems. *International Journal of Project Management*, 39(3), 235-245.

d. Bishop, D.A. (2018). Key performance indicators: ideation to creation. *IEEE Engineering Management Review, 46(1).*

e. Bizimana, E., Umutoniwase, S., & Ndoli, L. (2024). Evaluating the effectiveness of monitoring tools used in Rwandan ICT projects. *Journal of Technology Management*, 12(1), 78-95.

f. Black, Y. and Marron, M. (2018). Research Gaps. *Journal of Technology Management*.12(4);139-142

g. Brown, A.D. (2018). Identities in organization studies, *Organization Studies Journal,* 40(1).

h.Chandani, L.P. (2021). Theory of Change versus Logical Framework: Know the Differences. *TolaData. Development Studies Research Journal*.2(3);18-22
i. Chigbu, U.E. (2019). Visually Hypothesizing in Scientific Paper Writing: Confirming and Refuting Qualitative Research Hypotheses Using Diagrams: *Publications, 7*(1), Chirau, T., Mapitsa, C.B., Matodzi, A., Masilela, B., & Dlakavu, A. (2020). A stakeholder view of the development of national evaluation systems in Africa. *African Evaluation Journal*, 8(1).
j. Chikozho, C., Nkhata, B., & Ngwenya, T. (2021). Challenges in implementing monitoring and evaluation systems: Insights from development practitioners in Southern Africa. *Development Studies Research*, 8(1), 45-58.
k.Cousins, J.B., & Whitmore, E. (2019). Framing Participatory Evaluation: A Review of the Literature on Participatory Approaches to Evaluation in Education and Community Settings. *American Journal of Evaluation*, 40(1), 6-24.
l. East African Community. (2021). *EAC Regional Strategy for Digital Transformation 2021-2025*. *African Evaluation Journal of Statistics.*11(8);21-25
m. Enago Research, (2019). The Importance of Sampling Methods in Research Design. *Journal of Construction in Developing Countries*. 3(7); 29-38
n.FAO. (2022). Evaluation of the Zimbabwe Livelihoods and Food Security Program (LFSP): *Project Evaluation Series* 06/2022. FAO *African Journal of Information Systems*, 15(1), 45-60.
o.Fraser, D.I. & Morkel, C. (2020). State of monitoring and evaluation in Anglophone Africa: Centre for Learning on Evaluation and Results in Anglophone Africa's reflections, *African Evaluation Journal* 8(1).
p.Freeman, R.E. (1984). *Strategic Management: A Stakeholder Approach*. Boston: Pitman. Gordon, F. & Sebastian, L. (2019). Can't see the wood for the logframe: Integrating logframes and theories of change in development evaluation. *The Canadian Journal of Program Evaluation, suppl. Special Issue,* 33(3), 336.
q.Idoro, G. (2019). Influence of the monitoring and evaluation practices of indigenous and expatriate Nigerian contractors on project outcome. Journal of Construction in Developing Countries.
r. International Telecommunication Union. (2020). measuring digital development: Facts and Figures." *International Journal of Information Technology Project Management* 14(2),18-24
s. Kagabo, J., & Niyonsaba, A. (2021). Capacity building for effective monitoring and evaluation: Lessons from Rwandan ICT projects. *Journal of Project Management*, 39(2), 145-162.
t. Kagabo, J., & Nkurunziza, T. (2023). "Evaluating the Impact of ICT Sector Development Projects in Rwanda." *Journal of African Business*, 24(1), 45-67.
u.Kagabo, M., & Ndayisaba, F. (2023). "Assessing the Effectiveness of Monitoring and Evaluation Systems in ICT Projects in Rwanda." *International Journal of Information Technology Project Management* 14(2),45-60
v.Kang, Y., Cho, M., Rahman, M. M., Cho, Y., Han, S., & Dutta, M. L. (2020). Design of a collaborative monitoring and evaluation system for a community-based nutrition project in rural Bangladesh. Evaluation and Program Planning, 101892
w. Karangwa, P., Nyirangarama, A., & Habineza, A. (2023). Impact assessment of government policies on ICT development through effective monitoring. *African Journal of Information Systems*, 15(1), 45-60.
x.Karanja J. W. & Yusuf M. (2018). The role of monitoring and evaluation on performance of non- governmental organizations projects in Kiambu County International Journal of Management and Commerce Innovations, 6 (1), 649-664.
y.Kemirembe, E. & Aforabi, L. (2024). Influence of monitoring and evaluation on project performance in Rwanda: A Case of rural electricity distribution project in Bugesera District. Journal of Research Innovation and Implications in Education, 8(1), 462 – 471.
z.Kinyua G. T. G. & Njoroge N. N., 2021) Effects of Monitoring and Evaluation Practices on The Performance of Health Projects under Centre for Health Solutions (CHS) in Nyeri County, Kenya. International Journal of Scientific and Research Publications, 11 (1), 1-25.

aa. Kirori, G. M., & Karanja, D. N. (2019). Monitoring and Evaluation Practices and Performance of Youth Projects in Non-Governmental Organizations in Kenya. *International Journal of Novel Research in Humanity and Social Sciences*, 6(2), 89-95.
bb. KPMG. (2019). Monitoring and Evaluation in the Development Sector. *KPMG International report*.
cc. Kusek, J.Z., & Rist, R.C. (2020). Ten Steps to a Results-Based Monitoring and Evaluation System: A Handbook for Development Practitioners. *World Bank Publications*.
dd. Machuka M. M. & Atambo W. (2019) Factors influencing adoption of monitoring practices on organizational performance in Kenya: the case of Transmara Sugar Company. *International Journal of Economics, Commerce and Management*, 2 (4), 234-350.
ee. Makuza, J., Ngabonziza, J.C., & Niyonsaba, A.M. (2021). Stakeholder Engagement in ICT Projects: Lessons from Rwanda's Digital Transformation Initiatives. *Journal of Information Technology for Development*, 27(3), 456-472.
ff. MeDRA. (2016). Rapid assessment of MeDRA: To facilitate the implementation of the 2016-2020 Strategy *(Unpublished).*
gg. Mleke, M.N, & Dida, M.A (2020). A survey of monitoring and evaluation systems for government projects in Tanzania: A case of health projects. *I.J. Information Engineering and Electronic Business* 1, 8-18.
hh. Mugisha, J., Ngabonziza, G., & Kanyankore, J. (2022). Challenges facing monitoring and evaluation practices in Rwandan ICT projects. *Rwanda Journal*, 29(2), 123-140.
ii. Mukamana, C., & Uwase, F. (2024). Factors Influencing the Success of ICT Initiatives in Rwanda: A Monitoring Perspective. *International Journal of Information Systems for Crisis Response and Management*, 16(2).
jj. Mukamurera, J., & Niyonsaba, A. (2024). Policy frameworks influencing monitoring and evaluation practices in Rwanda's ICT sector: An analysis. *Rwanda Journal of Development Studies*, 12(1), 23-40.
kk. Multon M. Q Patton (2015) *Qualitative Research & Evaluation Methods: integrating theory and practice, 4*th edition, Thousand Oaks, California: SAGE Publications, Inc
ll. Munyaneza, A. (2021). *Evaluating the Impact of ICT on Economic Development in Rwanda: A Case Study Approach*. Kigali: University of Rwanda Press.
mm. Munyaneza, E., Niyonsaba, A., & Rugamba, C. (2022). Data quality challenges in monitoring ICT projects: Evidence from Rwanda. *International Journal of Information Systems*, 15(3), 78-5.
nn. Murorunkwere A., & Munene P.M. (2022). Monitoring and Evaluation Practices and Performance of Non-Governmental Organization Projects in Rwanda: A Case of Care International Village Savings and Loan Associations Project. Journal of Entrepreneurship & Project Management, 6 (2), 23-45.
oo. Ngabonziza, D., Niyonsaba, A., & Rugamba, C. (2023). Feedback mechanisms as a tool for improving project performance: Insights from Rwandan ICT initiatives. *African Journal of Project Management*, 8(1), 34-50.
pp. Niwagaba H., & Mulyungi, D. (2018). Influence of Monitoring and Evaluation Planning on Project Performance in Rwanda: A Case of Selected Non-Governmental Organizations in Gasabo District. *European Journal of Business and Strategic Management*, 3(8), 1-16.
qq. Niyonsaba, A., Mukarubuga, J., & Ndahiro, J. (2020). Assessing the impact of monitoring and evaluation on ICT projects in Rwanda. *Journal of African Business*, 21(3), 345-362.
rr. Niyonsaba, A., Munyaneza E., & Kagabo J. (2020). Stakeholder engagement strategies for successful monitoring and evaluation: Case studies from Rwanda's ICT sector development projects. *Rwanda Journal*,8(2),112-130.
ss. Niyonsaba, A.M., Makuza, J., & Uwizeyimana, D.E. (2022). The Role of Social Capital in Enhancing Project Implementation Efficiency: Evidence from Rwanda's ICT Sector Development Projects. *International Journal of Project Management*, 40(5), 678-689.
tt. Niyonsenga, F., & Mukarubuga, J. (2022). *ICT for Development: Lessons from Rwanda*. London: Routledge.
uu. Niyonsenga, P., & Murekezi, A. (2022). *ICT for Development: Lessons from Rwanda*. London: Routledge.
vv. O'Connor, C. & Joffe, H. (2020). Inter-coder reliability in qualitative research: Debates and practical guidelines. *International Journal of Qualitative Methods,* 19, 1-13.

ww. Onyango, R.O. (2018). Participatory monitoring and evaluation: An overview of guiding Pedagogical principles and implications on development. *International Journal of Novel research in Humanity and Social Sciences*, 5(4), 428-433.

xx. Osei, A., Adjei-Kontoh, E., & Owusu-Antwi, G. (2021). Capacity building for effective monitoring and evaluation: Lessons learned from Ghana's health sector programs. *Journal of Health Management*, 23(4), 567-578.

yy. Panezai, S. (2016). *Research gaps and knowledge gaps?* University of Baluchistan." *International Journal of Information Technology Project Management* 14(2), 79-92-60

zz. Pearse, N. (2019). An illustration of deductive analysis in qualitative research: *EJBRM*, 17(3)

aaa. PMBOK (2021). *A Guide to Project Management Body of Knowledge* (6th ed.). Project Management Institute.

bbb. Raftree, L. (2020). MERL tech state of the field. The Evolution of MERL Tech. *Journal of Entrepreneurship & Project Management*, 2 (3), 21-28.

ccc. Reinholz, D.L., & Andrews, T.C. (2020). Change theory and theory of change: What's the difference anyway? *International Journal of STEM Education*, 7(2).

ddd. Rugamba C., & Niyonsaba A. (2023). Leveraging technology for enhanced monitoring and evaluation: Innovations within Rwandan ICT projects. *Technology Review*,10(4),45-60.

eee. Rumenya H. & Kisimbii J. M. (2020) Influence of Monitoring and Evaluation Systems on Performance of Projects in Non-Governmental Organizations: A Case of Education Projects in Mombasa County, Kenya. *Journal of Entrepreneurship & Project Management*, 2 (3), 34-78.

fff. Rwanda ICT Authority Annual Report 2023 (2021). *Monitoring and Evaluation of ICT Projects in Developing Countries: A Case Study of Rwanda*. Kigali: University of Rwanda Press.

ggg. Rwanda Information Society Authority. (2022). *National Strategy for Transformation 2017-2024*. Kigali, Rwanda

hhh. Rwanda Ministry of ICT and Innovation (2020). *National Strategy for Transformation II (NST2) Report*. Kigali: Government of Rwanda.

iii. Rwanda Ministry of Information Communication Technology and Innovation (2022). *Annual Report on ICT Sector Performance*. Kigali: Government of Rwanda.

jjj. Saunders, M.N.K., Lewis, P. and Thornhill, A. (2019) Research Methods for Business Students. 8th Edition, Pearson, New York.

kkk. Sindayigaya, G.J.V., Ngarambe, P. & Nyamweya, M.N. (2020). M&E and institutional performance: A case of teacher self-learning academy project on school's academic performance in Bugesera district. *International Journal of Scientific and Research Publications, 10(11).*

lll. United Nations Development Program (UNDP) (2021). *Monitoring Progress Towards Sustainable Development Goals: The Role of ICT*. New York: UNDP.

mmm. United Nations Development Program (UNDP). (2020). *Results-Based Management: A Guide for UNDP Country Offices*. Retrieved from UNDP.

nnn. USAID. (2021). *Program Cycle – Ex-Post Evaluations.* USAID. Kigali, Rwanda.

ooo. Uwera, C., & Ndoli, J. (2020). "The Role of Stakeholder Engagement in Monitoring ICT Development Projects: Evidence from Rwanda." *Journal of African Business*, 21(3), 345-362.

ppp. Uwimana, C., Nshimiyimana, F., & Kayitesi, E. (2021). The role of monitoring and evaluation in enhancing ICT project success. *International Journal of Project Management*, 39(5), 487-498.

qqq. Uwizeyimana, D.E. (2020). The logframe as a monitoring and evaluation tool for government Interventions in a chaotic and complex environment, *Africa's Public Service Delivery and Performance Review,* 8(1).

rrr. Uwizeyimana, D.E., Niyonsaba, A.M., & Makuza, J. (2023). Applying the Theory of Change Framework for Effective Stakeholder Engagement in ICT Projects: Insights from Rwanda's Digital Initiatives. *Development Studies Research*, 10(1), 123-135

sss. World Bank Group (2021). *Rwanda Digital Economy Assessment*. Washington D.C.: World Bank Publications.

ttt. World Bank Group (2023). *Rwanda Digital Economy Assessment*. Washington D.C.: World Bank Publications.

uuu. World Bank Group. (2021). *Evaluating World Bank Support for Information and Communication Technology: An Independent Evaluation*. Retrieve from https//penknolwedge.workbank.org

vvv. World Bank. (2022). Monitoring & Evaluation: Enhancing Accountability in Development Projects – A Global Perspective Report.

