Original Article

Effect of Project Management Information System on Projects Performance in Rwanda: A Case Study of New Life Women's Development Project

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ABSTRACT

The study titled "Effect of Project Management Information System on Project Performance in Rwanda: A Case Study of New Life Women's Development Project in Kicukiro District (2018-2022)" aimed to assess various Project Management Information System (PMIS) dimensions, evaluate the project's performance, and analyze the impact of PMIS on performance outcomes. The study adopted a quantitative research design, surveying 36 employees of the project using questionnaires for data collection. Both descriptive and inferential statistical analyses were performed, revealing significant insights. The information quality dimension of PMIS received a high mean score of 4.6145, demonstrating its effectiveness. System quality also scored well, with a mean of 4.5793, while service quality, despite a notable mean of 4.5055, did not significantly influence performance. Functionality quality stood out with a high mean of 4.6825, while user satisfaction had a mean of 4.6389, reflecting its importance in project management. Regression analysis revealed that information quality ($\beta1 = 0.331$, sig. = 0.000) and functionality quality ($\beta4 = 0.551$, sig. = 0.000) had significant positive effects on project performance, whereas service quality showed no significant impact ($\beta3 = -0.036$, sig. = 0.619). Based on these findings, the study recommends that the New Life Women's Development Project fully adopt and utilize PMIS, with a particular emphasis on generating high-quality information to enhance project management effectiveness and overall performance.

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INTRODUCTION

The evolution of global competitive marketplaces has necessitated the implementation of highly managed projects across diverse sectors such as engineering, information technology, and construction. Organizations must adeptly organize, monitor, control, and plan their projects to meet predetermined timeframes, budgets, and performance standards while effectively managing associated risks (Adrián, 2013). This complexity arises from the multidimensional nature of modern projects, requiring a comprehensive approach to project management that includes organization, planning, coordination, oversight, and regulation.

The increasing competition in the global market has intensified the need for organizations to leverage information technology (IT) to address the growing demands of their clients (Porter and Heppelmann, 2014). Today's project managers face a myriad of challenges, including tight deadlines, budget constraints, and the management of change and risk. In response, they are tasked with making informed decisions that minimize uncertainty and control risk while advancing the overall objectives of the project (Barry, 2013). To facilitate this, organizations are increasingly investing in Project Management Information Systems (PMIS), which provide the necessary resources for effective decision-making related to project selection, organization, and management (Adrián, 2013).

PMIS are particularly valuable in fields such as software development, IT, business process reform, and research and development. These systems encompass distinct aspects of project management, including planning, monitoring, and controlling. Effective project management involves the organization, securing, and management of resources—practices that have been refined over the years to help organizations achieve their business objectives (Boyd, 2014). As projects grow in complexity and duration, the demand for comprehensive project management systems has increased. These systems must not only provide detailed information but also incorporate visualization tools that enhance communication and facilitate information sharing among stakeholders (Berislav, 2015).

In Western countries, such as England, PMIS can be categorized into two types: personal project management applications for individual organizations and application service provider-based systems designed for general projects but customizable for specific needs (Barry, 2013). In contrast, countries in Asia, particularly Korea and Japan, have widely adopted web-based project management tools that enhance collaboration and communication among participants in construction projects. This adoption is facilitated by robust internet infrastructure and user familiarity with digital environments (Burke, 2014).

In Africa, the trend of adopting PMIS is also gaining traction. In South Africa, for instance, businesses are utilizing Enterprise Resource Planning (ERP) systems to optimize costs, reduce project completion times, and improve organizational flexibility (Amponsah, 2013). Similarly, in Kenya,

large construction projects are increasingly supported by computer-based Materials Management Systems (MMS), which streamline data management related to procurement and inventory (Boyd, 2014).

Rwanda has emerged as a notable example of PMIS investment, with organizations leveraging these systems to enhance project administration and execution. The deployment of PMIS not only provides a competitive advantage but also improves project efficiency throughout the lifecycle (RISA, 2022). The rationale for widespread PMIS adoption in Rwanda rests on the belief that the benefits will significantly outweigh the costs. Scholars suggest that the expansion of PMIS capabilities allows firms to manage both individual projects and entire project portfolios effectively, supporting critical phases such as idea generation, risk management, and stakeholder engagement.

Despite the positive outcomes associated with PMIS globally, a critical gap exists regarding its impact on local non-governmental organizations (NGOs) in Rwanda. The effects of PMIS on project performance within this specific context remain largely unexamined, highlighting the importance of targeted research to explore these dynamics. Project performance has been extensively studied in project management literature, yet opinions on its various aspects often diverge. Different methodologies, including statistical analyses and subjective evaluations, have been employed to assess project success (Barry, 2013).

Understanding project performance requires recognizing the diverse perspectives of stakeholders. Research has identified three distinct approaches: the holistic and cooperative leader, the socially engaged and ambiguous manager, and the executor of top-down assignments. By examining these varied perspectives, the researcher can gain deeper insights into the factors influencing project performance.

In conclusion, while PMIS adoption is on the rise and has shown promising results worldwide, there is a pressing need for research focused on local NGOs in Rwanda to ascertain the specific impacts of PMIS on project performance. Such studies will not only enhance academic understanding but also provide practical insights for organizations seeking to optimize their project management capabilities in the Rwandan context.

MATERIALS AND METHODS

Research Design

A study design, as defined by Clough (2011), is a comprehensive strategy outlining the techniques and protocols needed to gather and process necessary data. This study employed a quantitative descriptive research design focused on the New Life Women's Development Project in Rwanda to collect respondents' opinions on PMIS dimensions, project performance, and the impact of the project management information system.

Data Collection and Analysis

To investigate the effect of PMIS on project performance in Rwanda, a structured questionnaire was distributed to 36 employees of the New Life Women's Development Project. The questionnaire included closed-ended questions, enabling respondents to choose from limited options. Respondents were categorized by role to gather quantitative data on PMIS's impact. To ensure honesty, confidentiality was assured. Additionally, document analysis was used to supplement the data, offering further insights into the project's performance and the influence of PMIS on outcomes.

Data analysis utilized statistical techniques for closed-ended responses, employing SPSS (Statistical Package for the Social Sciences). Means and standard deviations were calculated to assess the central tendency and variability of the dataset. To determine the effect of PMIS on project performance, multiple regression analysis was

conducted, allowing for a comprehensive evaluation of the relationships among variables. The present study adopted the following model:

$$Y = ß_0 + ß_1 IQ + ß_2 SQ + ß_3 Sq + ß_4 FQ + ß_5 US + e$$

Where: Y = Project performance, (Bi; i=1,2,3,4,5) = The coefficients representing the various

independent variables. Bo = the Y-intercept

(Xi: i=1,2,3,4,5} = Values of the various independent (covariates) variables. e= the error term which is assumed to be normally distributed with mean zero and constant variance, Y= project performance,

X1= Information Quality,

X 2 = System quality,

X3= Service quality,

X4= Functionality quality

X5= User satisfaction.

RESULTS AND DISCUSSIONS OF FINDINGS

The findings were derived from the questionnaires distributed to 36 employees of the New Life Women's Development Project. Chapter four attempts to analyse data generated from the study which includes quantitative information collected from the respondents. The first part deals with the analysis and interpretation of results and the second part deals with a discussion of the main finding.

Assessment of Implementation of the PMIS in African New Life Ministries

This objective sought to assess the perception of respondents on the implementation of the PMIS in African New Life Women's Ministries. Respondents were required to rate various ways through which are Information Quality, System Quality, Service Quality, Functionality Quality and User Satisfaction on various scales measuring implementation of the PMIS in African New Life Ministries by using a five-point scale with 1 =strongly disagree, 2 = disagree, 3= Neutral, 1 4=agree and 5 = strongly agree. The mean was calculated for the various statements or items measuring on implementation of the PMSI. The analysis was done by using descriptive statistics such as number of respondents, mean and standard deviation. The results are presented in the section below.

Respondents' Perceptions on the Information Quality in New Life Women's Development Project.

The purpose of the study was to determine how respondents felt about the quality of the content in the New Life Women's Development project. It was required of respondents to rank the quality of the information in a variety of statements. The mean and standard deviation were used to summarize the findings, as shown in Table 2 below.

Table 1: Respondents' Perception of Information Quality

Information quality	N	Mean	Std. Deviation
Information provided by the Management information system used by the "New Life Women's Development project" is current.	36	4.3611	.48714
Information provided by the Management information system used by the "New Life Women's Development project" complete	36	4.5278	.50631
Information provided by the Management information system used by the "New Life Women's Development project" is consistent.	36	4.6111	.49441
Information provided by the Management information system used by the "New Life Women's Development project" is relevant.	36	4.6389	.48714
Information provided by the Management information system used by the "New Life Women's Development project" is accurate.	36	4.6389	.48714
Information provided by the Management information system used by the "New Life Women's Development project" is concise.	36	4.6944	.46718
Information provided by the Management information system used by the "New Life Women's Development project" is timeless.	36	4.6944	.46718
Information provided by the Management information system used by "New Life Women's Development project" is reliable	36	4.7500	.43916
Overall mean		**4.6145**	

Source: Primary data,2024

Mean range: 1.00-1.80= Very low mean; 1.81-2.60=Low mean 2.61-3.40= moderate mean; 3.41-4.20=high mean; 4.21-5=Very high mean

Table 2 summarizes respondents' views on the informational quality provided by the Management Information System (MIS) used by the New Life Women's Development Project. The data indicates that the information is current, with a mean score of 4.3611, falling within the range of 4.21 to 5.00. This high mean suggests substantial evidence supporting this assertion, while a standard deviation of 0.48714 indicates some variability in responses, suggesting a degree of homogeneity among participants. Furthermore, the completeness of the information also received a strong mean score of 4.5278, corroborating the system's effectiveness in delivering comprehensive data. The standard deviation of 0.50631 indicates heterogeneity in responses, reflecting differing perspectives on completeness.

The consistency of the information scored a mean of 4.6111, again within the high range, with a standard deviation of 0.49441, showing a mix of views among respondents. Similarly, relevance and accuracy were both rated at 4.6389, highlighting the system's capability to provide pertinent and correct information. Each aspect also exhibited standard deviations around 0.48714, indicating some consensus. Conciseness and timeliness scored notably high as well, each with a mean of 4.6944 and lower standard deviations (0.46718), reinforcing the MIS's efficiency. Finally, reliability garnered the highest mean of 4.7500, indicating strong confidence among respondents. Overall, these findings align with Ali (2016), who highlighted that the effectiveness of Management Information Systems (MIS) in large-scale construction projects is largely dependent on the quality of information they generate, which is critical for informed decision-making and project success.

Respondents' Perceptions of the System Quality in the ANLM Project

One of the main objectives of the research was to analyze the PMIS system quality, which is utilized as a project management tool by the New Life Women's Development project. The outcomes the researcher discovered are listed in Table 3 below.

Table 2: Respondents' Perception of System Quality

System quality	N	Mean	Std. Deviation
New Life Women's Development project management information system is easy to access	36	4.2222	.72155
New Life Women's Development project management information system is flexible	36	4.4167	.50000
New Life Women's Development project management information system is easy for users	36	4.4444	.50395
New Life Women's Development project management information system is easy to learn	36	4.6667	.47809
New Life Women's Development project management information system is accurate	36	4.7222	.45426
New Life Women's Development project management information system responds on time	36	4.7500	.43916
The computer system used by the New Life Women's Development project is reliable.	36	4.8333	
Overall mean		4.5793	.37796

Source: Primary data, 2024

Mean range: 1.00-1.80= Very low mean; 1.81-2.60=Low mean 2.61-3.40= moderate mean; 3.41-4.20=high mean; 4.21-5=Very high mean

Table 3 presents respondents' views on the system quality of the Management Information System (MIS) used by the New Life Women's Development Project. The system's ease of access scored a mean of 4.2222, indicating substantial proof of its accessibility, though a standard deviation of 0.72155 reflects varied opinions among respondents (heterogeneity). The system's flexibility also received a high mean of 4.4167, suggesting it meets users' needs, again with a standard deviation of 0.50000, indicating diverse views.

Ease of use was rated at 4.4444 while learning the system garnered a mean of 4.6667, both reinforcing the system's user-friendly nature. The standard deviations of 0.50395 and 0.47809 suggest some consensus among participants. Accuracy was rated even higher, with a mean of 4.7222, indicating strong confidence in the system's output, supported by a standard deviation of 0.45426. Timeliness received a mean of 4.7500, and reliability scored the highest at 4.8333, demonstrating exceptional performance in these areas with lower standard deviations (0.43916 and 0.37796). Overall, the findings suggest that the system quality of the MIS significantly contributes to the effectiveness of the New Life Women's Development Project, which is in alignment with accordance to DeLone and McLean (2003) who stated that system quality is a critical factor in determining the success of information systems and their contribution to organizational effectiveness.

Service Quality in ANLM Project

The researcher aimed to evaluate respondents' opinions regarding the quality of services provided by the New Life Women's Development project.

Respondents had to assign a rating to a number of statements on the calibre of the services. The mean and standard deviation were used to summarize the findings, as shown in Table 4 below.

Table 3: Respondents Perception on Service Quality

Service quality	N	Mean	Std. Deviation
New Life Women's Development project management information system makes customers/users feel a sense of quality in the level of services offered to them	36	4.6111	.49441
New Life Women's Development project management information system causes services to operate as desired but also with no breakage in the deliveries	36	4.7222	.45426
New Life Women's Development project projects management information systems users are understood	36	4.7778	.42164
New Life Women's Development project management information system users are provided with consistent support	36	4.4722	.50631
New Life Women's Development project management information system users are given resourceful self-support	36	4.3444	.47476
New Life Women's Development project trains employees on the project management information system	36	4.3889	.49441
New Life Women's Development project management information system managers empathize with users	36	4.2222	.72155
Overall mean		4.5055	

Source: Primary data,2024

Mean range: 1.00-1.80= Very low mean; 1.81-2.60=Low mean 2.61-3.40= moderate mean; 3.41-4.20=high mean; 4.21-5=Very high mean.

Table 4 summarizes respondents' views on service quality regarding the Management Information System (MIS) used by the New Life Women's Development Project. The system scored a mean of 4.6111 for creating a sense of quality in services, indicating strong support for this statement, with a standard deviation of 0.49441 suggesting some consensus among participants.

The system was rated even higher for delivering services reliably, with a mean of 4.7222 and a standard deviation of 0.45426, reinforcing its effectiveness. Respondents felt that users are well understood, achieving a mean of 4.7778, with a lower standard deviation of 0.42164, indicating strong agreement. Consistent support was rated at 4.4722, while users noted that they received

resourceful self-support with a mean of 4.3444, both showing high levels of satisfaction despite some variability in opinions (standard deviations of 0.50631 and 0.47476, respectively).

Training provided to employees scored a mean of 4.3889, suggesting effective knowledge transfer, while empathy from managers was rated at 4.2222, reflecting some differences in views (standard deviation of 0.72155). Overall, these results indicate that project managers view the quality of the PMIS as satisfactory across all dimensions, aligning with Smith and Lee (2017) who noted its importance in enhancing task performance and facilitating project management.

Respondents' Perception of the Functionality Quality in the ANLM Project

The purpose of the study was to evaluate respondents' perceptions of the New Life Women's Development project's functionality quality. It was necessary for respondents to assign a functional quality rating to a variety of statements. The mean and standard deviation of the data were used to summarize the findings in Table 5 below.

Table 4. 4: Respondents' Perceptions of Functionality Quality

Functionality quality	N	Mean	Std. Deviation
The supporting staff of New Life Women's Development project management information systems are fast in attending to complaint	36	4.4722	.50631
New Life Women's Development project management information system supported users' project management methods	36	4.6667	.47809
New Life Women's Development project management information system supported users' project management process	36	4.6944	.46718
New Life Women's Development project uses sophisticated software to maintain information security	36	4.7222	.45426
The use of PMIS has helped the New Life Women's Development project to incorporate quantitative targets at the planning stage.	36	4.7222	.45426
New Life Women's Development project management information system aligned with users' requirements	36	4.7222	.45426
New Life Women's Development project management information system supported users' project management role	36	4.7778	.42164
Overall mean		4.6825	

Source: Primary data,2024

Mean range: 1.00-1.80= Very low mean; 1.81-2.60=Low mean 2.61-3.40= moderate mean; 3.41-4.20=high mean; 4.21-5=Very high mean

Table 5 presents respondents' views on functionality quality concerning the Management Information System (MIS) of the New Life Women's Development Project. The supporting staff's responsiveness to complaints received a mean score of 4.4722, indicating a high level of satisfaction with a standard deviation of 0.50631, suggesting some variability in opinions. The system's ability to support users' project management methods scored a mean of 4.6667, while the support for project management processes achieved a mean of 4.6944, both indicating strong consensus among respondents (homogeneity). The use of sophisticated software to ensure information security was rated with a mean of 4.7222, further emphasizing the effectiveness of the system in safeguarding data.

Additionally, respondents noted that the PMIS helped incorporate quantitative targets during planning, aligning with user requirements and supporting project management roles, each also scoring 4.7222 and 4.7778, respectively. These results, characterized by lower standard deviations (0.45426 and 0.42164), demonstrate a general agreement among participants. Overall, these findings align with Barry (2013), indicating that the quality of PMIS is crucial for influencing project success. Project managers emphasized that the system's adaptability, responsiveness, and integration capabilities are vital for generating high-quality information, underscoring the importance of functionality in effective project management. According to Aladwani (2001), the adaptability, responsiveness, and integration capabilities of a

system are crucial factors in ensuring that the system delivers high-quality information, which in turn enhances the effectiveness of project management.

Respondents' Perceptions of Users' Satisfactions in the ANLM Project

The researcher sought to assess the perception of respondents on user satisfaction in the New Life Women's Development project. Respondents were required to rate various statements regarding user satisfaction. The results were summarized in Table 6 below by using mean and standard deviation.

Table 5: Respondents Perception of User Satisfaction

User satisfaction	N	Mean	Std. Deviation
New Life Women's Development project management information system has met users' needs.	36	4.5278	.50631
New Life Women's Development project management information system has met users' expectations.	36	4.6667	.47809
New Life Women's Development project management information system has met the users' preferences.	36	4.7222	.45426
Overall mean		4.6389	

Source: Primary data, 2024

Mean range: 1.00-1.80= Very low mean; 1.81-2.60=Low mean 2.61-3.40= moderate mean; 3.41-4.20=high mean; 4.21-5=Very high mean

Table 6 presents respondents' views on user satisfaction regarding the New Life Women's Development Project Management Information System (PMIS). The system scored a mean of 4.5278 for meeting users' needs, indicating substantial proof of effectiveness, though with a standard deviation of 0.50631, reflecting varied opinions (heterogeneity). For meeting users' expectations, the mean was 4.6667, again showing strong consensus (homogeneity), with a standard deviation of 0.47809. The PMIS also achieved a mean of 4.7222 for meeting user preferences, demonstrating consistent agreement (homogeneity) with a standard deviation of 0.45426. These results highlight the PMIS's role in effective project management, aligning with Bergeron (2017), who noted its impact on project success through budget control and deadline compliance.

Level of Performance of ANLM Projects

The study sought to assess the perception of respondents on the level of performance of the New Life Women's Development project. The respondents were asked where agreed or disagreed with the statements regarding to performance of ANLM projects in terms of Met timescale, meeting quality standards, meeting cost, sustainable outcome, and stakeholder satisfaction. The study used descriptive statistics such as mean and standard deviation. The results were summarized in the below subsections.

Level of ANLM projects Quality of deliverables

The study sought to determine on level of meeting the level of the ANLM project's Quality of deliverables. The respondents were asked where agreed or disagreed with the statements regarding to project's Quality of deliverables. The study used descriptive statistics such as mean and standard deviation. The results are summarized in the table below.

Table 6: Respondents Perception of Quality of Deliverables

Quality of deliverables	N	Mean	Std. Deviation
The project deliverables always fulfil the customer's requirements	36	4.3444	.47476
PMIS limited defects within the project	36	4.6111	.49441
The project was handed upon the company's overall standards	36	4.6389	.51331
The project increased PMIS users' satisfaction	36	4.7222	.45426
Overall mean		4.5791	

Source: Primary data,2024

Mean range: 1.00-1.80= Very low mean; 1.81-2.60=Low mean 2.61-3.40= moderate mean; 3.41-4.20=high mean; 4.21-5=Very high mean

Table 7 reflects respondents' views on the quality of deliverables from the New Life Women's Development Project. The project deliverables consistently fulfilled customer requirements, with a mean of 4.3444, indicating substantial proof of effectiveness. The standard deviation of 0.47476 suggests varied opinions among respondents (homogeneity). The PMIS limited defects within the project, scoring a mean of 4.6111, further demonstrating its effectiveness, with a standard deviation of 0.49441. Additionally, the project met the company's overall standards with a mean of 4.7222, showing a strong consensus (homogeneity). Overall user satisfaction with the PMIS also received a high mean of 4.7222. These findings align with Ali (2016) and O'Brien & Marakas, (2019) who noted that all respondents believed the information generated by the system was of good quality, highlighting the PMIS's contribution to project success.

Level of ANLM Project Schedule Performance

The goal of the study was to ascertain how well ANLM project schedules were being met. When it came to the assertions made about the project schedule performance, the respondents were asked if they agreed or disagreed. Descriptive statistics like mean and standard deviation were employed in the study. The table below provides a summary of the findings.

Table 7: Respondents Perception of Project Schedule Performance

Project schedule performance	N	Mean	Std. Deviation
The project was implemented according to the planned work	36	4.5278	.50631
Information Systems improved project timelines	36	4.5278	.50631
The project was finished within the planned time	36	4.6667	.47809
The project was done by a planned team, responsible for each task	36	4.7222	.45426
The project was implemented according to planned cost resources and dependencies associated with each task	36	4.7222	.45426
The project was finished on time	36	4.7222	.45426
Overall mean		4.6481	

Source: Primary data,2024

Mean range: 1.00-1.80= Very low mean; 1.81-2.60=Low mean 2.61-3.40= moderate mean; 3.41-4.20=high mean; 4.21-5=Very high mean

Table 8 summarizes respondents' views on project schedule performance for the New Life Women's Development Project. The data reveals that the project was implemented according to planned work, achieving a mean score of 4.5278, which indicates strong adherence to schedule (4.21 ≤ μ ≤ 5.00). The standard deviation of 0.50631 suggests varied opinions among respondents (heterogeneity). Similarly, information systems were found to improve project timelines, again receiving a mean of 4.5278. The project was completed within the planned timeframe, with a mean score of 4.6667, and a standard deviation of 0.47809, indicating some consensus (homogeneity) among respondents. Additionally, the project team was well-organized, with a mean score of 4.7222, reflecting strong agreement on task responsibilities, supported by a standard deviation of 0.45426.

Furthermore, the project adhered to planned costs and resource dependencies, scoring 4.7222, with the same level of agreement among respondents. Overall, the project was completed on time, achieving another mean of 4.7222. These findings align with Bayona (2020), highlighting that high-quality information from PMIS enhances the productivity and decision-making effectiveness of project managers.

ANLM Projects Cost Performance

The study sought to determine on level of meeting the level of the ANLM project's cost performance. The respondents were asked where agreed or disagreed with the statements regarding to project's cost performance. The study used descriptive statistics such as mean and standard deviation. The results are summarized in the table below.

Table 8: Respondents Perception of Project cost performance

Project cost performance	N	Mean	Std. Deviation
The project was completed within the planned budget	36	4.6111	.49441
The Project decreased the cost of some activities with no effect on quality	36	4.7222	.45426
Overall mean		4.6666	

Source: Primary data,2024

Mean range: 1.00-1.80= Very low mean; 1.81-2.60=Low mean 2.61-3.40= moderate mean; 3.41-4.20=high mean; 4.21-5=Very high mean

Table 9 indicates respondents' views on the statement about Project cost performance and it shows that the project was completed within the planned budget with a mean of 4.6111 which is in the range between 4.21≤μ≤5.00. Such a very high mean means that there is substantial proof the event exists in the case study. The standard deviation of .49441 means that respondents share different views (homogeneity).

The Project decreased the cost of some activities with no effect on quality with a mean of 4.7222 which is in the range between 4.21≤μ≤5.00. Such a very high mean means that there is substantial proof the event exists in the case study. The standard deviation of .45426 means that respondents share

some views (Homogeneity). By conclusion overall mean and standard deviation of project cost performance shows that time management was good and cost decreased accordingly and hence information generated was very accurate. According to Khosravi et al. (2015), effective time management and cost control are crucial for ensuring accurate project performance data, with improved project performance leading to better cost reductions and the generation of reliable information.

Level of ANLM Projects Scope Adherence

The goal of the study was to ascertain how well the ANLM Project scope was being adhered to.

According to the research, it's critical to ascertain whether the project's scope can actually be altered while it's being implemented. When it came to the assertions about the conformity of the project scope, the respondents were asked if they agreed or disagreed. Descriptive statistics like mean and standard deviation were employed in the study. The table below provides a summary of the findings.

Table 9: Respondents' Perception of Project Scope Adherence

Project scope adherence	N	Mean	Std. Deviation
The scope of the project remained constant over the last three years	36	4.6667	.47809
The number of beneficiaries planned has been reached according to the plan	36	4.6944	.46718
The number of activities designed were implemented according to the plan	36	4.7222	.45426
Overall mean		4.6944	

Source: Primary data,2024

Mean range: 1.00-1.80= Very low mean; 1.81-2.60=Low mean 2.61-3.40= moderate mean; 3.41-4.20=high mean; 4.21-5=Very high mean

Table 10 presents respondents' views on project scope adherence, revealing that the project scope remained consistent over the past three years, with a high mean score of 4.6667, indicating strong agreement that the scope was well-maintained. This score falls within the range of $4.21 \leq \mu \leq 5.00$, providing substantial evidence that scope adherence was achieved. The standard deviation of 0.47809 indicates homogeneity in respondents' views. The planned number of beneficiaries was also met, with a mean of 4.6944, suggesting that the project reached its target. Similarly, the number of activities designed and implemented according to the plan scored a mean of 4.6389, again reflecting high adherence to the project plan. The standard deviations for both of these metrics (0.46718 and 0.48714) show some consistency in respondents' views, indicating general agreement.

These findings suggest that project managers have significant experience in managing projects effectively and using PMIS to ensure successful project execution. These results align with Bergeron's (2017) research in Canada, which evaluated the quality of PMIS and its impact on project managers and performance, further supporting the importance of a well-functioning project management information system for project success.

Level of Stakeholders' satisfaction with ANLM projects

The study sought to determine the level of meeting the level of Stakeholders' satisfaction in ANLM projects. The respondents were asked where agreed or disagreed with the statements regarding Stakeholders' satisfaction with ANLM projects. The study used descriptive statistics such as mean and standard deviation. The results are summarized in the table below.

Table 10: Respondents' Perception of Stakeholders' Satisfaction

Stakeholders' satisfaction	N	Mean	Std. Deviation
Between 2018-2022, at the New Life Women's Development project, there was a quality delivery	36	4.4444	.50395
Between 2018-2022, New Life Women's Development project's expected results were met	36	4.6111	.49441
Between 2018-2022, at New Life Women's Development project, there was a quality of deliverable	36	4.6667	.47809
Between 2018-2022, New Life Women's Development project was implemented within the budget	36	4.7222	.45426
Between 2018-2022, New Life Women's Development project beneficiaries were satisfied	36	4.7222	.45426
Between 2018-2022, the number of women who received entrepreneurship skills through the New Life Women's Development project increased over the last 5 years	36	4.7222	.45426
Between 2018-2022, New Life Women's Development project management information system users were satisfied	36	4.7778	.42164
Overall mean		4.6666	

Source: Primary data,2024

Mean range: 1.00-1.80= Very low mean; 1.81-2.60=Low mean 2.61-3.40= moderate mean; 3.41-4.20=high mean; 4.21-5=Very high mean

Table 11 presents respondents' views on stakeholder satisfaction with the New Life Women's Development Project between 2018 and 2022. The data reveals consistently high mean scores, indicating a strong positive perception of the project's performance. For instance, the quality of delivery received a mean of 4.4444, the expected results were met with a mean of 4.6111, and the quality of deliverables achieved a mean of 4.6667, all within the range of 4.21 to 5.00, reflecting strong agreement among respondents. These high scores suggest that stakeholders felt the project effectively met its goals. The standard deviations, ranging from 0.47809 to 0.50395, show some variation in respondents' views, but the overall trend remains positive.

The project also scored highly in budget adherence (mean = 4.7222) and beneficiary satisfaction (mean = 4.7778), with lower standard deviations (0.42164 to 0.45426), indicating homogeneity in responses. Furthermore, the increasing number of women receiving entrepreneurship skills was reflected in another high mean of 4.7222, highlighting the project's success. In conclusion, the results demonstrate that the New Life Women's Development Project met stakeholder expectations, delivering positive outcomes and earning widespread satisfaction from project managers and stakeholders. According to Müller and Turner (2010), the alignment of project outcomes with stakeholder expectations is a key determinant of project success, with stakeholder satisfaction playing a critical role in assessing the effectiveness of development projects.

Effect of Project Management Information System on Performance of ANLM projects

Multiple linear regression

The study sought to find out the effect of project management information systems such as IQ =Information Quality, SQ =System Quality, SQ =Service Quality, FQ = Functionality Quality, and

US =User Satisfaction as independent variables on the performance of ANLM projects. To achieve, this objective the researcher used multiple linear regression analysis. Multiple linear regression analysis was carried out to find out the influence of the independent variables Information Quality, System Quality, Service Quality, Functionality Quality and User Satisfaction on the dependent variable (ANLM projects).

Table 11: Model Summary

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.957[a]	.915	.901	1.35088

a. Predictors: (Constant), information quality, system quality, service quality, Function quality, User satisfaction.

Source: Primary data, 2024

The model summary is shown in Table 12 above. Based on the findings, R was 0.957, R^2 was 0.915, and adjusted R^2 was 0.901. An adjusted R^2 of 0.901 implies that there was a variation of 90.1% on the New Life Women's Development project due to changes in Information quality, system quality, service quality, Function quality, and User satisfaction.

Nevertheless, the model does not take into consideration other factors that account for 9.9% of the variation in the New Life Women's Development project.

The R-squared value of 0.915 indicates that approximately 91.5% of the variance in project performance can be explained by the predictors in the model. According to Curry (2016) and Turner (2009), project managers worldwide recognize the critical importance of comprehensive planning for successful project execution. Experienced project managers understand that well-structured planning is essential to achieving project success.

ANOVA

Table 12: ANOVA

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	591.559	5	118.312	64.833	.000[b]
	Residual	54.746	30	1.825		
	Total	646.306	35			

a. Dependent Variable: Performance of New Life Women's Development Project

b. Predictors: (Constant), information quality, system quality, service quality, Function quality, User satisfaction.
Source: Primary data,2024

As indicated in Table 13 above, the F-test value was 64.833 with a significance value of 0.00 at a 0.05 level of significance. Since the p-value obtained was less than 0.05, the F-test was significant hence the conclusion that the regression model was good. Therefore, the null hypothesis stating that there is no statistically significant relationship between the PMIS and the performance of the ANLM project for the period under study was rejected as the results of the study showed that there is a statistically significant relationship between the PMIS and

performance of ANLM project for the period under study. This implies that there was a goodness of fit of the model fitted for this study. As a result, the alternative hypothesis is favoured, leading to the rejection of the null hypothesis. Findings supported by the (Amaral, 2019) study, indicate a clear connection between thorough planning processes and project performance, highlighting how careful planning can guarantee the project's continuity even after the initial funding stage.

Table 13: Regression coefficients
Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-13.350	7.128		-1.873	.071
	Information quality	.986	.229	.331	4.312	.000
	System quality	.517	.215	.167	2.404	.023
	Service quality	-.111	.222	-.036	-.502	.619
	Function quality	1.459	.233	.551	6.265	.000
	User satisfaction	.655	.286	.133	2.291	.029

a. Dependent Variable: Performance of ANLM projects

The equation ($Y = \beta_0 + \beta_1 IQ + \beta_2 SQ + \beta_3 Sq + \beta_4 FQ + \beta_5 US$) becomes:

Performance of ANLM projects = -13.350 + .986 IQ +.517 SQ -.111 Sq +1.459 FQ +.655 USThe regression analysis reveals that various factors significantly influence the performance of ANLM projects. When all variables (information quality, system quality, service quality, function quality, and user satisfaction) are set to zero, the predicted performance is -13.350. Information quality (B1 = 0.986, p = 0.02) positively impacts performance, with a 0.986 unit increase for each unit of information quality. System quality (B2 = 0.517, p = 0.02) and function quality (B4 = 1.459, p = 0.02) also show significant positive effects. User satisfaction (B5 = 0.655, p = 0.003) further enhances performance. These findings align with Baumfield (2016), emphasizing the role of high-quality project management systems in improving project outcomes.

Limitation of the Study

The study's limitations include a small sample size of 36 employees from the New Life Women's Development Project, which may reduce the statistical power and increase the likelihood of Type II errors (Cohen, 1988). A larger sample size would provide more reliable and generalizable results. Additionally, the study employed a quantitative descriptive research design, which is useful for identifying existing trends but does not offer the depth of insight that a qualitative approach might provide. Creswell (2014) suggests that qualitative methods could capture more nuanced data, enriching the understanding of the research context.

Theoretical Implication

This study contributes to the theoretical understanding of Project Management Information

Systems (PMIS) effectiveness, particularly regarding service quality. It challenges existing models, showing that service quality may not always be a critical factor in PMIS success, contrary to Parasuraman et al.'s (1988) view. The study also aligns with DeLone & McLean's (2003) model, emphasizing the role of user satisfaction and system quality in improving project performance.

Practical Application

The study offers practical insights for PMIS implementation. It suggests that PMIS adoption should be promoted in similar projects, both in Rwanda and globally, as it positively impacts project success (Lee & Xia, 2010). Additionally, ensuring high information quality and focusing on user-friendly system design can enhance decision-making and overall effectiveness (Aladwani, 2001; Chong et al., 2013).

CONCLUSION AND RECOMMENDATIONS

Conclusions

The study found that a successful project management information system (PMIS) in ANLM projects provides accurate, relevant, and secure information, enabling project teams to perform tasks efficiently. The focus on the system's accuracy and comprehensiveness is more critical than its complexity. With this information, users can manage projects more professionally, ensuring high-quality task completion. The study also concluded that PMIS improvements significantly impacted the performance of ANLM projects over the past five years, recommending its adoption for project management.

Recommendations

Based on the study's findings, the following recommendations are made to enhance project performance in Africa's New Life Ministries (ANLM):

Improved PMIS Functionality: To ensure effective project management, PMIS should prioritize producing high-quality information. The system's environment must be optimized for smooth operation.

Technological Investment: ANLM projects should ensure that their technological infrastructure is well-equipped to support PMIS functionality.

Adoption of PMIS: Companies are encouraged to adopt PMIS for managing their projects, as it delivers essential, high-quality information that enhances project management and decision-making.

Skilled Project Managers: ANLM project managers should possess advanced qualifications, ideally at the master's level, to effectively manage development projects using the current systems.

User Engagement: PMIS users must be actively involved in the project planning, scheduling, monitoring, and control processes to improve efficiency and effectiveness. The purchase and installation of PMIS should involve all stakeholders to ensure its successful integration into ANLM projects. These recommendations emphasize the importance of quality information and skilled management for project success.

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