



Effect of Project Management Information Systems (PMIS) on the Performance of the Rwanda Urban Development Project (RUDP) in Nyagatare District, Rwanda

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Abstract: *This study examined the effect of project planning systems on the performance of the Rwanda Urban Development Project (RUDP) in Nyagatare District, Rwanda. The study was guided by the specific objective of examining the effect of project planning systems on RUDP performance. The study was anchored in Systems Theory, the Technology Acceptance Model, and Information Processing Theory. A descriptive and correlational research design employing quantitative and qualitative approaches was adopted. The target population comprised 173 respondents involved in RUDP implementation, including project support staff, the Project Manager, Project Engineers, Monitoring and Evaluation Officers, Finance and Procurement Officers, and District Officials. A census approach was used. Quantitative data were analyzed using descriptive statistics and Pearson correlation and multiple regression analysis, while qualitative data were analyzed thematically. The findings showed that respondents generally agreed that project planning systems were effectively utilized, with an overall mean of 4.41 and standard deviation of 0.72. Project planning systems had a strong positive and statistically significant relationship with project performance ($r = 0.630, p < 0.01$). The regression analysis further showed that project planning systems had a positive and statistically significant effect on project performance ($\beta = 0.610, p < 0.001$). The findings indicate that effective planning systems, particularly scheduling, resource allocation, budgeting, work planning, timeline management, and timely planning information, contribute substantially to project performance. The study concludes that strengthening project planning systems is important for improving the timely, cost-effective, and quality implementation of RUDP.*

Keywords: *Project planning systems; Project Management Information Systems; project performance; Rwanda Urban Development Project; Nyagatare District.*

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1. Introduction

Despite the recognized importance of project planning systems, limited empirical evidence has specifically isolated their contribution to the performance of RUDP in Nyagatare District. Existing studies have often examined

PMIS as a broad construct incorporating planning, communication, monitoring, reporting, and risk management, making it difficult to determine the specific contribution of project planning systems to project performance. This contextual and empirical gap is important because RUDP requires effective integration of schedules, resources, budgets, work plans, and

implementation timelines. The present study therefore focused specifically on project planning systems and examined their effect on the performance of the Rwanda Urban Development Project in Nyagatare District, Rwanda.

At the international level, the use of information systems has increasingly transformed the way projects are planned and managed. Digital planning tools enable project managers to integrate schedules, budgets, resource requirements, task responsibilities, and progress information, thereby improving the availability of information required for managerial decisions. The effective use of such systems can improve coordination among project teams and stakeholders because relevant project information can be accessed and communicated more efficiently (Stair & Reynolds, 2023). Project management literature further emphasizes that planning is central to the management of scope, time, cost, quality, and resources, all of which are important dimensions of project performance (Project Management Institute, 2021; Turner, 2023). Consequently, weak planning systems may result in unrealistic schedules, inefficient resource allocation, cost pressures, coordination problems, and delays in implementation.

In developing countries, the importance of effective project planning is heightened by the financial, technical, and institutional constraints under which many development and infrastructure projects are implemented. Such projects commonly involve government institutions, development partners, contractors, consultants, local authorities, and communities, making coordination and timely access to accurate information essential. Evidence from project management research indicates that effective planning systems can improve scheduling, resource utilization, coordination, and implementation performance (Sharma & Gupta, 2021). In Rwanda, project management practices have increasingly emphasized structured planning, monitoring, accountability, and performance management, particularly in public and donor-funded development projects (Uwimana & Nkundabagenzi, 2023).

In Rwanda, urban development projects have become important mechanisms for improving infrastructure, environmental sustainability, and service delivery in secondary cities. The Rwanda Urban Development Project (RUDP), supported by the World Bank, is implemented in selected secondary cities, including Nyagatare District, and involves interventions related to urban infrastructure, drainage, roads, environmental management, and related services (World Bank, 2025). The implementation of these activities requires realistic schedules, appropriate resource allocation, effective budgeting, clear work plans, and timely planning information. Because RUDP involves several project actors and interconnected implementation activities, effective project planning systems are important

for coordinating responsibilities and ensuring that project activities remain aligned with planned targets.

Nyagatare District provides an important context for examining project planning systems because it is among the secondary cities benefiting from RUDP interventions. The complexity of urban infrastructure projects requires project teams to integrate technical, financial, procurement, monitoring, and implementation information when preparing and revising project plans. Effective planning systems can therefore support timely decision-making, improve resource utilization, strengthen coordination, and facilitate monitoring of implementation timelines. Previous evidence suggests that structured project management practices are associated with improved performance of development projects in Rwanda (Uwimana & Nkundabagenzi, 2023), while international evidence similarly links effective planning systems with improved project performance (Sharma & Gupta, 2021).

Project implementation increasingly depends on reliable systems for planning, organizing, coordinating, and controlling activities throughout the project life cycle. Project Management Information Systems (PMIS) provide project teams with mechanisms for collecting, processing, storing, and sharing information required for effective project execution. Within this broader system, project planning is particularly important because it establishes the basis for defining activities, preparing schedules, allocating resources, preparing budgets, assigning responsibilities, and coordinating implementation. Effective planning therefore provides project managers with a structured basis for controlling project activities against agreed targets and responding to changes that may arise during implementation (Sternson, 2023; Project Management Institute, 2021).

1.1 Statement of the Problem

The specific problem addressed by this study was therefore the limited empirical evidence on the effect of project planning systems on the performance of the Rwanda Urban Development Project in Nyagatare District. While planning systems are expected to improve scheduling, resource allocation, budgeting, coordination, and access to timely planning information, the extent to which these functions contribute to RUDP performance had not been sufficiently established in the local context. The study consequently examined the effect of project planning systems on RUDP performance in Nyagatare District, Rwanda, with project performance considered in terms of timely completion, cost efficiency, quality of project outputs, and achievement of project objectives.

Although studies have established that project management information systems can contribute to project performance, much of the existing evidence has focused on general

project environments, private organizations, donor-funded projects, or contexts outside Rwanda. The thesis literature indicates limited empirical evidence specifically concerning the contribution of PMIS-supported project planning systems to the performance of urban development projects in Rwanda. In particular, there is insufficient evidence that isolates project planning systems from other PMIS dimensions and examines their specific relationship with project performance in the RUDP context. This creates an empirical and contextual gap concerning whether effective project planning systems actually contribute to improved performance in Nyagatare District.

In Rwanda, the Government has invested substantially in urban infrastructure development through initiatives such as the Rwanda Urban Development Project, which aims to improve urban infrastructure, environmental sustainability, and service delivery in secondary cities, including Nyagatare District (World Bank, 2025). The implementation of RUDP involves multiple stakeholders and interconnected activities, creating a need for reliable planning systems that can support scheduling, resource allocation, budgeting, work planning, and coordination. The Ministry of Infrastructure has also emphasized the importance of effective project management and coordination in the implementation of urban development interventions (MININFRA, 2024). Nevertheless, the complexity of implementation means that project teams must continuously use planning information to manage activities and maintain progress toward project objectives.

The problem is particularly relevant to infrastructure and urban development projects, which normally involve substantial financial resources, technically interdependent activities, and multiple stakeholders. Government agencies, contractors, consultants, development partners, project staff, and local communities may all participate in different stages of implementation. Such complexity creates a strong need for effective planning systems that can integrate schedules, work plans, budgets, resource requirements, responsibilities, and implementation information. Where planning systems are weak or poorly utilized, coordination may become difficult, project resources may not be used efficiently, and managers may experience delays in identifying and responding to implementation problems (World Bank, 2024; Sharma & Gupta, 2021).

However, the availability of project management information systems does not automatically guarantee successful project performance. Projects may continue to experience implementation difficulties when planning information is incomplete, outdated, delayed, or not effectively used in managerial decision-making. Weak planning may result in unrealistic schedules, inadequate allocation of resources, poor coordination of activities, budget pressures, and difficulties in maintaining

implementation timelines. The Project Management Institute (2023) has reported that a substantial proportion of projects fail to achieve their original goals and business objectives, while scope changes and implementation inefficiencies remain common. These challenges demonstrate the continuing importance of examining the project management practices that contribute to effective project performance.

Project performance is a central concern in development projects because project success depends on the extent to which planned objectives are achieved within the required time, budget, scope, and quality standards. Project Management Information Systems are intended to support this process by providing information needed for planning, coordination, monitoring, reporting, and decision-making. When project information is accurate, timely, and accessible, project managers can coordinate activities, allocate resources, monitor implementation, and take corrective action more effectively. Consequently, effective use of project information systems is expected to strengthen project control and improve the likelihood of achieving intended project outcomes (Project Management Institute, 2021; Heller, 2023).

1.2 Research Objective

The study was guided by the following specific objective:

- i. To examine the effect of project planning systems on the performance of the Rwanda Urban Development Project (RUDP) in Nyagatare District, Rwanda.

2. Literature Review

This review presents the key concepts and variables that form the foundation of this study. It provides a detailed discussion of Project Management Information Systems (PMIS) and project performance by examining the major dimensions of PMIS, namely project planning systems. The review further explains the concept of project performance and how these PMIS components contribute to the successful implementation of projects and achievement of project objectives (Project Management Institute, 2021).

2.1 Theoretical Review

The study was guided by Systems Theory, the Technology Acceptance Model (TAM), and Information Processing Theory. Systems Theory views an organization or project as an interconnected set of components that work together toward common objectives. From this perspective, project planning systems form part of a broader project

management system in which planning, resources, activities, information, and performance are interconnected. Effective planning therefore provides inputs that influence subsequent implementation processes and project outcomes. The theory is relevant because RUDP involves multiple activities and stakeholders whose performance depends on the effective integration of project information and resources (Williams & Hummelbrunner, 2023; Wilson, 2024).

The Technology Acceptance Model explains the adoption and use of information technologies through users' perceptions of usefulness and ease of use. In a project environment, planning systems are more likely to contribute to performance when project personnel perceive them as useful for scheduling, budgeting, resource allocation, and decision-making and are able to use them effectively. The model therefore helps explain how project staff adoption and utilization of PMIS-supported planning tools can translate into improved project management practices (Venkatesh & Davis, 2021).

Information Processing Theory emphasizes the capacity of organizations to obtain, process, and use information to reduce uncertainty and make appropriate decisions. Project planning involves processing information about activities, resources, costs, schedules, responsibilities, and implementation conditions. PMIS can increase the availability and accessibility of such information, enabling project managers to prepare realistic plans and respond to changes. The theory therefore provides a useful explanation of why effective planning information can improve project implementation and performance (White, 2023).

2.2 Project Planning Systems and Project Performance

Project planning systems refer to PMIS-supported tools and processes used for project scheduling, resource allocation, budgeting, task coordination, work planning, and establishment of project timelines. These systems provide project managers with structured information that supports the organization of activities and the allocation of available resources. Planning systems can improve implementation by helping project teams establish realistic schedules, assign responsibilities, identify resource requirements, and coordinate activities across different project components. According to Sternson (2023), PMIS facilitates project execution by integrating project information and supporting managerial decision-making.

Empirical studies also suggest that effective planning systems contribute to project performance. Sharma and Gupta (2021) found that project planning systems are associated with improved performance of construction projects through better scheduling, resource management,

and coordination. Uwimana and Nkundabagenzi (2023) similarly emphasized the importance of structured project management practices for the performance of development projects in Rwanda. The Project Management Institute (2021) further identifies planning as a central project management process through which scope, schedule, cost, resources, and implementation activities are organized and controlled. These findings suggest that planning systems can provide an important foundation for project performance.

Nevertheless, the contribution of planning systems can vary according to project complexity, organizational capacity, information quality, and user utilization of the systems. A planning system may exist formally but produce limited benefits when information is not updated, planning is not integrated with implementation, or project personnel do not use available information effectively. The present study therefore examined the actual perceptions of project personnel and key stakeholders regarding the use of project planning systems and their relationship with RUDP performance in Nyagatare District.

3. Methodology

The study adopted a descriptive and correlational research design using both quantitative and qualitative approaches. The design was appropriate because the study sought to describe the extent to which project planning systems were utilized and to establish the relationship between project planning systems and project performance. The target population comprised 173 respondents involved in the implementation of RUDP in Nyagatare District. The population included project support staff, the Project Manager, Project Engineers, Monitoring and Evaluation Officers, Finance and Procurement Officers, and District Officials. Because the population was relatively small and manageable, a census approach was used, whereby all 173 respondents were targeted.

Data were collected through structured questionnaires and semi-structured interviews. Questionnaires were administered to 126 project support staff, while 47 key informants participated in interviews. The questionnaire items measured perceptions of project planning systems and project performance using a five-point Likert scale. Project planning systems were assessed in relation to project scheduling and work planning, resource allocation, budgeting and cost planning, coordination of project activities, monitoring of implementation timelines, planning effectiveness, and availability of timely information for planning and decision-making. Project performance was considered in terms of timely completion, cost efficiency, quality of outputs, and achievement of project objectives. Interview information was used to complement the questionnaire findings by providing

explanations of how planning systems were used during implementation.

Quantitative data were analyzed using SPSS version 27. Descriptive statistics, particularly means and standard deviations, were used to summarize respondents' perceptions. Pearson product-moment correlation was used to determine the direction and strength of the relationship between project planning systems and project performance. Multiple regression analysis was also used in the thesis to determine the contribution of project planning systems while controlling for the other PMIS dimensions. For the focused manuscript objective, the project planning coefficient from that model is reported. Qualitative data were analyzed thematically by identifying recurring views concerning planning, scheduling, resource allocation, budgeting, coordination, and decision-making. Statistical significance was assessed at the 5% level.

4. Results and Discussion

4.1. Results

This section presents, analyzes, and interprets the data collected to examine the effect of Project Management Information Systems (PMIS) on the performance of the Rwanda Urban Development Project (RUDP) in Nyagatare District, Rwanda. The findings are presented in line with the study objective. Quantitative data were obtained from questionnaires administered to project support staff, while qualitative data were collected through interviews with the Project Manager, Project Engineers, Monitoring and Evaluation Officers, Finance and Procurement Officers, and District Officials. It presents the questionnaire response rate, descriptive statistics, correlation analysis, simple regression analysis, interview participants, discussion of the findings.

4.1.1. Response Rate

The response rate presents the number of questionnaires distributed and returned, as well as the number of interview participants involved in the study. The results are presented in Table 1

Table 1: Response rate

Response Rate	Target	Administered/Participated	Response Rate (%)
Questionnaire – Project Support Staff	126	120	95.2
Interview – Key Informants	47	47	100.0
Total	173	167	96.5

Source: Field Data (2026).

A total of 173 respondents were targeted for the study. Of these, 126 project support staff received questionnaires, of which 120 completed and returned them, giving a questionnaire response rate of 95.2%. In addition, all 47 targeted key informants participated in interviews, resulting in a 100.0% interview response rate. Overall, 167 respondents participated in the study, representing a response rate of 96.5%. The high response rate was considered adequate for analysis and provided a strong basis for drawing conclusions concerning project planning systems and RUDP performance.

4.1.2 Descriptive Statistics of Project Planning Systems

Table 2 presents respondents' perceptions regarding project planning systems utilized in the Rwanda Urban

Development Project (RUDP). A five-point Likert scale was used where 5 = Strongly Agree (SA), 4 = Agree (A), 3 = Neutral (N), 2 = Disagree (D), and 1 = Strongly Disagree (SD). This section addresses the first objective of the study, which was to examine the effect of project planning systems on the performance of the Rwanda Urban Development Project in Nyagatare District. The analysis examines respondents' perceptions regarding project scheduling, resource allocation, budgeting, work planning, project timelines, and planning effectiveness, and how these practices contribute to project performance. The findings are presented in Table 2.

Table 2. Descriptive Statistics of Project Planning Systems

Statements	N	Mean	SD
PMIS improves project scheduling and work planning.	120	4.46	0.71
PMIS facilitates effective allocation of project resources.	120	4.38	0.76
PMIS improves project budgeting and cost planning.	120	4.29	0.81
PMIS improves overall project planning effectiveness.	120	4.51	0.66
PMIS provides timely information for project planning and decision-making.	120	4.47	0.68
PMIS supports effective coordination of project activities.	120	4.42	0.69
PMIS enhances monitoring of project implementation timelines.	120	4.34	0.74
Overall Mean	120	4.41	0.72

Source: Field Data (2026).

Table 2 shows that respondents generally agreed that project planning systems were effectively utilized in the Rwanda Urban Development Project. The highest-rated statement was that PMIS improves overall project planning effectiveness ($M = 4.51$, $SD = 0.66$), followed by the view that PMIS provides timely information for project planning and decision-making ($M = 4.47$, $SD = 0.68$). Respondents also strongly agreed that PMIS improves project scheduling and work planning ($M = 4.46$, $SD = 0.71$). These results indicate that project planning systems provide project teams with information and tools needed to organize activities, establish realistic schedules, and make timely implementation decisions.

The findings further show strong agreement that PMIS supports effective coordination of project activities ($M = 4.42$, $SD = 0.69$) and facilitates effective allocation of project resources ($M = 4.38$, $SD = 0.76$). Respondents also agreed that PMIS enhances monitoring of implementation timelines ($M = 4.34$, $SD = 0.74$) and improves project budgeting and cost planning ($M = 4.29$, $SD = 0.81$). Although budgeting and cost planning recorded the lowest mean among the indicators, the result remained high, indicating that respondents perceived planning systems as useful across scheduling, resource allocation, budgeting, coordination, and timeline management. The overall mean of 4.41 ($SD = 0.72$) demonstrates a consistently positive perception of project planning systems.

The descriptive findings are consistent with Sharma and Gupta (2021), who associate effective project planning

systems with improved scheduling, resource utilization, and project coordination. They also support Sternson (2023), who emphasizes the role of PMIS in providing information required for project execution and managerial decision-making. In the RUDP context, the findings suggest that planning systems have helped project personnel integrate scheduling, budgeting, resource allocation, and coordination, thereby creating a stronger foundation for project implementation.

4.1.3 Correlation analysis

Correlation analysis was conducted to determine the nature and strength of the relationship between Project Management Information Systems (PMIS) and the performance of the Rwanda Urban Development Project (RUDP) in Nyagatare District. Specifically, the analysis examined the relationships between project planning systems, project communication and information-sharing systems, project monitoring and reporting systems, project risk management systems, and project performance. Pearson's Product Moment Correlation Coefficient was employed because all study variables were measured on continuous Likert scales. The correlation coefficient (r) ranges from -1 to +1, where values closer to +1 indicate a strong positive relationship, values closer to -1 indicate a strong negative relationship, and values close to zero indicate little or no relationship. The findings are presented in Table 3.

Table 3: Correlation between Project Planning Systems and Project Performance

	Project Planning Systems	Project Performance
Project Planning Systems	1	.630**
Project Performance	.630**	1

Note: ** Correlation is significant at the 0.01 level (2-tailed); $N = 120$.

The results in Table 3 show a strong positive and statistically significant relationship between project planning systems and project performance ($r = 0.630$, $p < 0.01$). This means that improvements in the use of project planning systems were associated with improvements in

the performance of the Rwanda Urban Development Project. The positive direction of the relationship indicates that effective scheduling, resource allocation, budgeting, coordination, and access to timely planning information tend to accompany better project performance. The

statistical significance of the relationship provides evidence against the null hypothesis at the bivariate level.

The finding is consistent with the view that planning provides the foundation for effective project execution. When project teams have accurate schedules, realistic work plans, clear resource requirements, and timely information, they can coordinate activities more effectively and identify implementation requirements before problems become serious. The result also agrees with Sharma and Gupta (2021) and Uwimana and Nkundabagenzi (2023), who

emphasize the contribution of structured planning and project management practices to project performance.

4.1.4 Regression Analysis

The regression analysis was conducted to determine the effect of Project Management Information Systems (PMIS) on the performance of the Rwanda Urban Development Project (RUDP) in Nyagatare District. Specifically, the analysis examined the individual contribution of project planning systems to project performance. The findings are presented in the following sections

Table 3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.757 ^a	.572	.558	.23960

a. Predictors: (Constant), Project Planning Systems

The findings presented in Table 4 indicate that the correlation coefficient ($R = 0.757$) demonstrates a strong positive relationship between the combined Project Management Information Systems (PMIS) dimensions and the performance of the Rwanda Urban Development Project (RUDP). This suggests that project planning systems have a strong association with project performance. The coefficient of determination ($R^2 = 0.572$) indicates that 57.2% of the variation in the performance of the Rwanda Urban Development Project is jointly explained by the four Project Management Information Systems dimensions included in the regression model. Furthermore, the Adjusted R^2 of 0.558 indicates that after adjusting for the number of predictor variables in the model, approximately 55.8% of the variation in project performance remained explained by the

independent variables. This suggests that the regression model has good explanatory power and adequately fits the data collected for the study. The remaining 42.8% of the variation in project performance is attributed to other factors that were not included in the regression model. In addition, the standard error of the estimate (0.23960) indicates a relatively small prediction error, implying that the regression model provides reliable estimates of project performance. Overall, these findings demonstrate that Project Planning Systems are important determinants of the performance of the Rwanda Urban Development Project in Nyagatare District and justify proceeding with the Analysis of Variance (ANOVA) and regression coefficient analyses to determine the significance and individual contribution of each predictor variable.

Table 5. Coefficient Regression for Project Planning Systems

Model		Unstandardized Coefficients		Standardize d Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.003	.323		-.009	.993
	Project Planning Systems (X1)	.578	.085	.610	6.813	.000

a. Dependent Variable: Project Performance (Y)

Table 5 shows that Project Planning Systems (X_1) had a positive and statistically significant relationship with Project Performance (Y), as indicated by the unstandardized coefficient ($B = 0.578$) and standardized coefficient ($\beta = 0.610$). This means that a one-unit increase

in project planning systems was associated with a 0.578-unit increase in project performance. The relationship was statistically significant because the t-value was 6.813 with a significance level of .000, which is below the 0.05 threshold. Therefore, the null hypothesis that project

planning systems have no significant relationship with project performance was rejected. The constant was not statistically significant.

4.1.5 Qualitative Findings

The interview findings complemented the quantitative results by indicating that project planning systems had strengthened the organization and coordination of RUDP implementation activities. Key informants described the planning system as useful for integrating schedules, budgets, resource requirements, and implementation responsibilities. They also emphasized that timely planning information enabled project managers and technical teams to make decisions based on current project conditions rather than relying only on static plans.

The qualitative evidence further indicated that planning systems supported coordination among project actors by providing a common basis for discussing activities, deadlines, resources, and implementation priorities. Respondents explained that effective planning helped teams identify activities that needed to be completed within specific periods and enabled managers to follow progress against planned targets. These observations reinforce the quantitative finding that project planning systems are positively associated with project performance and help explain why planning emerged as a strong predictor in the regression analysis.

However, the interviews also suggested that the benefits of planning systems depend on the quality and timeliness of information entered into the system and on the extent to which project personnel use planning information consistently. A planning system can support performance only when schedules, budgets, resource information, and implementation data are updated and used to guide decisions. This indicates that strengthening the technical system should be accompanied by user capacity, coordination, and managerial commitment.

4.6 Discussion of Findings

The study found that project planning systems had a strong and statistically significant relationship with the performance of RUDP in Nyagatare District. Respondents reported high levels of agreement regarding the contribution of PMIS to scheduling, work planning, resource allocation, budgeting, coordination, timeline management, and planning effectiveness. The overall mean of 4.41 indicates that project personnel generally perceived the planning systems as effective. The correlation coefficient of 0.630 further demonstrates a strong positive relationship, while the regression coefficient of 0.610 confirms a statistically significant positive effect. Together, these findings indicate that effective project

planning systems are an important contributor to RUDP performance.

The findings are in agreement with Sharma and Gupta (2021), who found that planning systems support project performance through improved scheduling, resource allocation, and coordination. They are also consistent with Sternson (2023), who emphasizes that PMIS provides project managers with information necessary for effective execution and control. In addition, the results are compatible with Turner (2023), who emphasizes planning as a central mechanism for integrating project activities, resources, and implementation requirements. The consistency between the present findings and previous evidence strengthens the argument that effective planning is a critical component of successful project implementation.

The findings also have theoretical implications. From the perspective of Systems Theory, project planning connects different project inputs and activities into an integrated implementation process. From the perspective of Information Processing Theory, planning systems improve access to information required to reduce uncertainty and support decision-making. From the Technology Acceptance Model perspective, the positive findings suggest that project personnel perceive PMIS-supported planning functions as useful for their work. Consequently, the study provides empirical support for the argument that well-utilized planning information systems can improve the performance of complex development projects.

5. Conclusion and Recommendations

5.1 Conclusion

The study concludes that project planning systems have a positive and statistically significant effect on the performance of the Rwanda Urban Development Project in Nyagatare District, Rwanda. Respondents generally agreed that PMIS improves project scheduling and work planning, supports effective resource allocation, strengthens budgeting and cost planning, improves coordination, provides timely information for planning and decision-making, and enhances monitoring of implementation timelines. The correlation analysis established a strong positive relationship between project planning systems and project performance, while regression analysis showed a positive and statistically significant effect. The null hypothesis was therefore rejected. The study concludes that strengthening project planning systems can contribute to better coordination, resource utilization, scheduling, budgeting, and decision-making and, consequently, improve the implementation performance of RUDP. Effective planning should therefore be treated as a strategic project management function rather than merely an administrative activity.

5.2 Recommendations

First, RUDP project management should strengthen the use of integrated planning systems by ensuring that project schedules, work plans, budgets, resource requirements, and implementation responsibilities are regularly updated and linked within the PMIS. This would enable project managers to identify deviations early and make timely corrective decisions.

Second, project managers should strengthen capacity building for staff responsible for project planning and PMIS utilization. Regular training should focus on scheduling, resource planning, budgeting, information updating, and interpretation of planning reports so that the available system is consistently used to support implementation decisions.

Third, RUDP management and relevant district authorities should improve coordination between technical, financial, procurement, monitoring, and implementation teams through a shared planning framework. Clear responsibilities and timely exchange of planning information would reduce duplication, improve resource allocation, and strengthen adherence to project timelines.

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