JRIIE Journal of Research Innovation and Implications in Education
Center for Research Implications & Practice

Website: www.jriiejournal.com ISSN 2520-7504 (Online) Vol.10, Iss.4, 2026 (pp. 1274 - 1285)

Effect of Financial Monitoring on Financial Overruns: A Case of the Rwanda Urban Development Project (RUDP) in Nyarugenge District, Rwanda

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Abstract: *This study examined the effect of Financial Monitoring on Financial Overruns of Rwanda Urban Development Project (RUDP) in Nyarugenge District, Rwanda. Specifically, it assessed the effect of budget monitoring on the reduction of financial overruns in the Rwanda Urban Development Project (RUDP) in Nyarugenge District, Rwanda. It focused on regular budget reviews, comparison of actual expenditure with approved allocations, identification of budget deviations, financial reporting, and corrective action. A descriptive and correlational research design using quantitative and qualitative approaches was adopted. The target population comprised 477 stakeholders involved in RUDP implementation, and a sample of 217 respondents was determined using Yamane's formula. Questionnaires were distributed to 192 respondents, of which 179 were returned, while key informants provided additional qualitative information through interviews. Quantitative data were analyzed using SPSS Version 25, descriptive statistics, Pearson correlation, and multiple regression, while interview data were analyzed thematically. The findings showed that respondents generally viewed budget monitoring as an important practice for controlling project spending. Budget monitoring was positively and significantly associated with the reduction of financial overruns, and regression analysis confirmed that it made a significant contribution when considered alongside other financial monitoring practices. The study concludes that systematic budget reviews, timely financial reporting, and prompt responses to budget deviations can strengthen financial discipline and help prevent unnecessary cost escalation in RUDP. It recommends that project management reinforce routine budget review processes and ensure that monitoring information informs timely financial decisions.*

Keywords: *budget monitoring, financial overruns, infrastructure projects, project financial management, Rwanda Urban Development Project*

How to cite this work (APA):

Ntamushobora, J. D. & Tarus, T. (2026). Effect of Financial Monitoring on Financial Overruns: A Case of the Rwanda Urban Development Project (RUDP) in Nyarugenge District, Rwanda. *Journal of Research Innovation and Implications in Education, 10*(4), 1274 – 1285. **https://doi.org/10.59765/drq7f42**

1. Introduction

Urban development projects are important instruments for improving access to infrastructure, public services, housing conditions, and urban livelihoods. Their outcomes depend on the coordination of technical work with sound financial planning, because infrastructure activities require substantial resources and are often implemented over extended periods. Where actual expenditure exceeds approved allocations, project teams may face funding gaps, delayed activities, changes in scope, or reduced delivery of planned outputs. Effective financial oversight is therefore a central requirement for protecting project resources and

sustaining implementation progress (World Bank, 2016; Flyvbjerg et al., 2023).

Financial overruns arise when the actual cost of project activities exceeds the approved or planned budget. They may result from inaccurate cost estimates, changing work requirements, procurement challenges, price increases, schedule disruptions, or weak financial controls. Such pressures are not limited to one country or one type of infrastructure; they have been identified in large public projects across different settings. Research on infrastructure cost performance emphasizes that the causes of overruns are often interconnected, making continuous financial review important throughout implementation (Bakker et al., 2022; Flyvbjerg, 2024).

Budget monitoring is a practical financial management process through which actual expenditure and commitments are compared with approved budgets and spending plans. It helps project personnel identify differences between planned and actual expenditure, investigate the reasons for those differences, and decide whether corrective action is necessary. Monitoring is more useful when financial information is timely, understandable, and linked to decisions rather than merely prepared to satisfy reporting requirements. Project control guidance similarly stresses the importance of tracking cost performance and responding to deviations while there is still an opportunity to influence outcomes (Project Management Institute, 2017; Fleming & Koppelman, 2021).

Budget monitoring also strengthens accountability by making the use of project funds more visible to managers, funders, auditors, and other oversight bodies. Regular reporting can clarify whether expenditure is consistent with approved activities and whether adjustments have been properly justified. In public projects, this visibility matters because financial decisions are made across multiple organizational levels and not every transaction can be observed directly by the funding authority. Public financial management guidance therefore places emphasis on reliable reporting, effective oversight, and the use of financial information to improve implementation decisions (International Monetary Fund, 2023; OECD, 2023).

In Rwanda, urban development and infrastructure investments operate within public financial management and procurement systems intended to support efficient resource use and accountable project delivery. Monitoring systems, budget execution reports, and audit processes can help project teams detect financial irregularities and review spending patterns. However, the presence of formal procedures alone does not guarantee that financial deviations will be reduced; their practical value depends on the accuracy of reports, the frequency of reviews, clear responsibility, and follow-up on identified issues (MINECOFIN, 2022; Office of the Auditor General of Rwanda [OAG], 2022).

The Rwanda Urban Development Project (RUDP) provides a relevant setting for examining budget monitoring because urban infrastructure implementation involves multiple activities, stakeholders, procurement decisions, and expenditure requirements. Financial information needs to be reviewed against approved allocations so that managers can recognize emerging budget pressures and make informed decisions about implementation. Rwanda-focused reports and studies on urban infrastructure have highlighted the importance of budget execution, financial tracking, and cost-control arrangements in supporting project delivery (World Bank, 2016; MININFRA, 2023).

Although financial monitoring includes several related practices, this study focuses specifically on budget monitoring and its effect on reducing financial overruns in RUDP in Nyarugenge District, Rwanda. The focus is on the process of comparing actual expenditure with approved budgets, reviewing deviations, reporting budget performance, and taking corrective action when required. This focus is consistent with evidence that cost monitoring and timely responses can help control expenditure, while broader infrastructure research shows that unresolved risks and weak post-approval controls may contribute to cost escalation (Nyang'oro et al., 2022; Turner (Nyang'oro et al., 2022; Love et al., 2016) Keegan, 2022).

1.1 Statement of the Problem

Financial overruns continue to challenge the implementation of infrastructure projects because the final cost of activities may exceed the approved budget when estimates are inaccurate, prices change, implementation schedules shift, or expenditure is not adequately controlled. These overruns can place pressure on project financing, force changes to planned activities, and reduce the resources available for other project priorities. Studies of infrastructure projects show that cost escalation is often associated with a combination of technical, financial, organizational, and governance-related factors, rather than a single isolated cause (Bakker et al., 2022; Flyvbjerg et al., 2023).

Budget monitoring is intended to help address this challenge by providing regular comparisons between approved budgets, commitments, and actual expenditure. However, monitoring can have limited effect when reports are delayed, financial information is incomplete, deviations are not investigated, or managers do not implement corrective measures. Public financial management guidance emphasizes that oversight arrangements need to support decisions and accountability, while research on cost monitoring highlights the importance of linking

financial information with timely action (International Monetary Fund, 2023; Heller & Ferrari, 2022).

For RUDP in Nyarugenge District, the practical question is how far budget monitoring contributes to reducing financial overruns in the project setting. The study examined financial monitoring practices more broadly, but the present study narrows the analysis to budget monitoring, including the review of planned and actual spending, reporting of budget performance, and response to identified variations. This focused assessment is necessary to clarify the contribution of budget monitoring and to identify lessons that may strengthen financial discipline in RUDP (World Bank, 2016; RPPA, 2022). Accordingly, the specific objective of this study was to assess the effect of budget monitoring in reducing financial overruns in the Rwanda Urban Development Project (RUDP) in Nyarugenge District, Rwanda.

1.2 Specific Objective

The specific objective of this study was to assess the effect of budget monitoring in reducing financial overruns in the Rwanda Urban Development Project (RUDP) in Nyarugenge District, Rwanda.

2. Literature Review

This section reviews the concept of budget monitoring and its relationship with financial overruns in infrastructure projects. It draws on the literature cited in this study to explain how budget reviews, variance identification, reporting, and corrective action can support project financial control.

2.1. Conceptual Review

2.1.1 Budget Monitoring and Financial Overruns

Budget monitoring refers to the continuous review of project spending and commitments against the approved budget. It helps project teams determine whether resources are being used according to the agreed financial plan and whether spending patterns require management attention. In practice, budget monitoring may involve periodic budget reviews, comparison of planned and actual expenditure, analysis of financial reports, and follow-up of variations. These procedures are most useful when they are performed consistently and when information is made available to those responsible for project decisions.

Budget monitoring can contribute to the reduction of financial overruns by making differences between planned and actual spending visible while there is still time to respond. If a project activity begins to consume more resources than expected, the project team can investigate the cause, revise forecasts, prioritize expenditure, or apply other approved corrective measures. Kerzner (2017) emphasizes the importance of monitoring project performance against plans, while Fleming and Koppelman (2021) discuss the value of tracking planned and actual performance in project control. Such approaches support early identification of financial pressures rather than relying on end-of-period reviews.

Financial reporting is also important because budget monitoring depends on reliable and understandable information. Reports that are prepared consistently can help managers explain variances, allocate resources, and communicate financial risks to relevant stakeholders. The literature reviewed in this study links financial monitoring with accountability and improved control in infrastructure projects (Heller & Ferrari, 2022; Nyang'oro et al., 2022). However, reports alone may not prevent overruns unless managers examine the reasons for deviations and take appropriate action. The effectiveness of budget monitoring therefore depends on the connection between information, accountability, and decision-making.

Infrastructure projects can face financial uncertainty arising from price changes, schedule adjustments, procurement challenges, and unexpected technical requirements. Budget monitoring does not remove all such uncertainty, but it provides a structured way to recognize its financial implications and manage the response. Research on infrastructure cost overruns emphasizes that project costs can be affected by multiple interacting factors, including planning, governance, and implementation conditions (Bakker et al., 2022; Flyvbjerg et al., 2023). Accordingly, budget monitoring should be understood as a practical control mechanism that works alongside broader project management procedures.

2.2 Theoretical Framework

This section presents the theories used in this study that help explain why budget monitoring may influence the reduction of financial overruns. The discussion focuses on Project Risk Management Theory, Agency Theory, and Contingency Theory because they address the identification of financial uncertainty, accountability for resource use, and the need to adapt controls to project conditions.

2.2.1 Project Risk Management Theory

Project Risk Management Theory provides a basis for understanding how project teams identify, assess, monitor, and respond to events that may affect project objectives. Financial overruns represent a project risk because unexpected costs and uncontrolled spending can undermine the approved budget and threaten delivery. The Project Management Institute (2017) describes risk

management as an ongoing project process, while Barbara (2020) emphasizes the value of systematic risk identification and response in project environments.

Budget monitoring supports this perspective by comparing actual expenditure and commitments with approved financial plans. Repeated comparisons can reveal unusual spending patterns, emerging cost pressures, and differences between expected and actual financial progress. When these signals are reviewed early, project managers have more opportunity to investigate causes, revise forecasts, and take corrective action before a deviation becomes a substantial overrun. Research on infrastructure cost risks similarly highlights the importance of monitoring uncertainty and responding to cost pressures during implementation (Miller & Lessard, 2020; Flyvbjerg, 2024).

In RUDP, the theory is relevant because budget monitoring can function as an early-warning mechanism for activities at risk of exceeding their allocations. Its value depends on regular review, reliable information, assignment of responsibility, and documented follow-up actions. A monitoring process that only records expenditure after it has occurred is less likely to prevent overruns than one that uses current information to guide decisions. This interpretation is consistent with project control approaches that connect cost tracking with corrective management (Fleming & Koppelman, 2021; Turner & Keegan, 2022).

2.2.2 Agency Theory

Agency Theory explains relationships in which one party delegates responsibilities to another and relies on monitoring and accountability mechanisms to ensure that resources are used in line with agreed objectives. In public and donor-supported projects, funders and beneficiaries expect managers and implementing teams to use allocated resources appropriately. Because funding authorities cannot directly observe every financial decision, information asymmetry may arise between those who provide resources and those who manage them. Jensen and Meckling (1976) and Eisenhardt (1989) provide foundational explanations of agency relationships and the role of monitoring in managing them.

Budget monitoring can reduce information gaps by providing a record of approved allocations, commitments, actual spending, and explanations for deviations. Transparent reporting allows project managers and oversight bodies to compare financial performance with agreed plans and question expenditure that is not adequately justified. Such arrangements can strengthen accountability and make it more difficult for inappropriate spending to remain undetected. Studies of public infrastructure governance likewise emphasize the value of financial transparency, assurance, and clear accountability arrangements (Theobald, 2020; Terry & Haucher, 2024).

Applied to RUDP, Agency Theory suggests that budget monitoring may contribute to reducing financial overruns when managers are required to explain variances and when responsible officers follow up on the findings. The existence of reports alone is insufficient if deviations are not escalated, responsibilities are unclear, or corrective decisions are not documented. Therefore, monitoring should be accompanied by clear approval procedures, accessible records, and effective oversight. This application is consistent with research linking accountability mechanisms with financial governance in public projects (Oliver & Salto, 2023; OECD, 2023).

2.2.3 Contingency Theory

Contingency Theory proposes that management practices should fit the conditions in which an organization or project operates rather than be applied uniformly in every situation. Infrastructure projects differ in scale, complexity, procurement arrangements, funding schedules, and exposure to external changes. These differences affect the level and frequency of financial review needed to maintain control. Donaldson (2001) explains the contingency perspective in organizational management, while Lawrence and Lorsch (1967) show how organizational arrangements relate to environmental demands.

For budget monitoring, the theory implies that the timing and depth of reviews should reflect the financial and operational circumstances of project activities. Activities involving complex procurement, changing market prices, uncertain schedules, or large commitments may require closer review and more frequent forecasting than activities with stable costs. Monitoring systems that adapt to these conditions can help managers direct attention toward areas with greater exposure to budget variation. This is consistent with literature on adaptive cost control and financial forecasting under uncertainty (Dismas, 2021; Chien, 2023).

In RUDP, Contingency Theory supports a flexible but documented approach to budget monitoring. Project teams should retain consistent financial standards while adjusting the intensity of review to the level of risk, the scale of expenditure, and the pace of implementation. Such an approach can help identify deviations without creating unnecessary administrative burden and can support timely responses when conditions change. Pertesa (2023) and Kerzner (2017) similarly emphasize that effective control arrangements need to be aligned with the project context and implementation requirements.

3. Methodology

This section describes the research design, target population, sample size, sampling procedures, data collection instruments, data analysis techniques, and ethical considerations used to examine the effect of budget monitoring in reducing financial overruns in the Rwanda Urban Development Project (RUDP) in Nyarugenge District, Rwanda. The methodology was aligned with the specific objective of the study to ensure that the information collected and analyzed directly addressed the relationship between budget monitoring practices and the reduction of financial overruns.

The study adopted a descriptive and correlational research design to examine budget monitoring practices and their relationship with the reduction of financial overruns. The descriptive design enabled the study to summarize respondents' views regarding budget reviews, expenditure comparisons, financial reporting, and the identification of budget deviations. The correlational design was used to determine the direction and strength of the relationship between budget monitoring and the reduction of financial overruns. These designs were appropriate because the study aimed to describe existing practices and establish statistical relationships without manipulating the study variables.

The study employed both quantitative and qualitative research approaches to obtain complementary information about budget monitoring. The quantitative approach provided numerical information on respondents' perceptions and enabled statistical examination of the relationship between budget monitoring and financial overruns. The qualitative approach provided additional explanations from key informants regarding how budget monitoring was conducted, how financial deviations were identified, and how corrective actions were implemented. Combining these approaches helped provide a broader understanding of the study objective.

The target population comprised 477 stakeholders involved in the implementation of RUDP in Nyarugenge District. These stakeholders were relevant because of their involvement in project management, financial oversight, government administration, and technical implementation. The study used Yamane's formula to determine a sample size of 217 respondents. Questionnaires were administered to 192 respondents, from whom 179 completed questionnaires were returned. Key informants involved in project implementation and financial management were also interviewed to obtain detailed explanations of budget monitoring practices.

The study used structured questionnaires and interview guides as the main data collection instruments. The questionnaires contained statements specifically related to budget monitoring, including the regular review of approved budgets, comparison of actual expenditure with planned expenditure, identification of budget deviations, preparation and use of monitoring reports, and implementation of corrective measures. A five-point Likert scale was used to record respondents' levels of agreement with the statements. The interview guides enabled the researcher to obtain additional explanations about the procedures used to monitor project budgets and address potential financial overruns.

Primary data were collected from the selected respondents using the questionnaires and interviews. The questionnaire data provided standardized responses that could be compared and analyzed statistically, while the interviews offered more detailed information about the practical application of budget monitoring within RUDP. The data collection process focused on information relevant to the specific objective and avoided unrelated aspects of project management.

Quantitative data were analyzed using the Statistical Package for the Social Sciences (SPSS), Version 25. Descriptive statistics were used to summarize respondents' views on budget monitoring practices. Pearson's correlation analysis was applied to examine the relationship between budget monitoring and the reduction of financial overruns. Multiple regression analysis was used to assess the contribution of budget monitoring within the broader model of financial monitoring practices, while accounting for the other predictors included in that model. The interpretation of regression findings distinguished the contribution of budget monitoring from the explanatory power of the overall model.

Qualitative data obtained through interviews were analyzed thematically. The responses were reviewed to identify recurring themes concerning budget review procedures, expenditure tracking, financial reporting, identification of deviations, and corrective action. The themes were then used to provide context for interpreting the quantitative results and to explain how budget monitoring practices operated in the project setting. This approach supported the integration of numerical findings with practical explanations from key informants without treating interview responses as a substitute for statistical evidence.

Finally, the study considered ethical principles throughout the research process. Participation was to be voluntary, and respondents were to be informed about the purpose of the study before providing information. Confidentiality and privacy were to be maintained when handling questionnaire responses and interview information, and collected data were to be used for academic research purposes. Any statements concerning institutional authorization and ethical clearance should be retained.

4. Results and Discussion

This section presents the findings relevant to the specific objective of assessing the effect of budget monitoring on reducing financial overruns in RUDP. It covers the questionnaire response rate, respondents' views on budget monitoring, the relationship between budget monitoring and financial overruns, and the regression results. The discussion interprets these findings in relation to the literature and theoretical framework.

4.1 Response Rate

The response rate is presented to show the extent to which the intended questionnaire participants contributed usable information to the study. Of the questionnaires distributed, 179 were completed and returned, while 13 were not returned. This level of participation provided a substantial set of responses for the quantitative analysis. Key informant interviews also contributed contextual information on budget monitoring and project financial control.

Table 1: Questionnaire Response Rate

Questionnaire status	Frequency	Percentage (%)
Returned questionnaires	179	93.2
Not returned	13	6.8
Total distributed	192	100.0

Source: Field data, 2026.

4.2 Descriptive Findings on Budget Monitoring

This subsection summarizes respondents' perceptions of the budget monitoring practices used in RUDP. The statements covered regular budget reviews, comparison of actual expenditure with approved budgets, prompt identification of deviations, use of monitoring reports, and the perceived contribution of budget monitoring to reducing financial overruns.

Table 2. Respondents' Views on Budget Monitoring

Budget monitoring statement	N	Mean	SD
Project budgets are regularly reviewed to ensure alignment with planned expenditures.	179	4.4	0.70
Actual project expenditures are compared with approved budgets during implementation.	179	4.3	0.74
Budget deviations are identified and addressed promptly to prevent financial overruns.	179	4.2	0.79
Budget monitoring reports support effective financial decision-making during project implementation.	179	4.4	0.68
Effective budget monitoring has contributed to reducing financial overruns in RUDP.	179	4.5	0.65
Overall mean		**4.36**	**0.71**

Source: Field data, 2026. Note: M = mean; SD = standard deviation.

The responses indicate that regular budget reviews formed an important part of budget monitoring in the project. Reviewing budgets allows project personnel to assess whether planned financial allocations remain suitable for the activities being implemented and to identify areas requiring closer attention. When these reviews are performed routinely, they can help management recognize spending patterns that differ from the original plan and consider corrective measures before financial pressure increases.

Respondents also indicated that actual project expenditure was compared with approved budgets during implementation. This practice is important because a budget provides a reference point against which financial performance can be assessed. Comparisons between planned and actual expenditure help project teams identify whether activities are consuming resources as expected,

investigate reasons for variations, and improve forecasts for the remaining implementation period. These checks can also support discussions among financial and technical personnel about whether spending differences arise from legitimate project changes or weaknesses in implementation control.

The findings further suggest that budget monitoring reports supported financial decision-making. Timely reports can help project managers understand the current financial position, assess commitments, and decide whether spending priorities or implementation arrangements need to be adjusted. Reports are particularly useful when they present clear explanations of variances rather than only listing financial transactions. Their contribution to reducing overruns therefore depends on accuracy, regular preparation, accessibility to responsible personnel, and the use of reported information in management decisions.

The prompt identification and handling of budget deviations received comparatively less agreement than some other monitoring practices. This suggests that, although monitoring mechanisms were generally viewed positively, there may still be room to improve how quickly deviations are investigated and resolved. Identifying a budget difference is only the first step; the project team must also determine its cause, establish the potential effect on remaining activities, assign responsibility for action, and follow up to ensure that the response has been implemented. Strengthening this process could make budget monitoring more effective in preventing financial overruns.

Interview findings provided additional context for these results. Key informants described the use of budget reviews and financial reports to compare planned costs with actual spending, identify unusual variations, and inform corrective decisions. Their accounts reinforced the view that budget monitoring is not limited to preparing financial statements; it also involves interpreting information and taking action to maintain financial discipline. These qualitative insights complement the questionnaire responses by explaining how budget monitoring practices operate during project implementation.

4.3 Correlation Analysis

Pearson correlation analysis was used to examine the direction and strength of the relationship between budget monitoring and the reduction of financial overruns. The results are presented in Table 3.

Table 3: Correlation Between Budget Monitoring and Reduction of Financial Overruns

Variables	Pearson correlation (r)	Significance	N
Budget monitoring and reduction of financial overruns	.704	$p < .001$	179

Source: Field data, 2026.

The correlation analysis showed a positive and statistically significant relationship between budget monitoring and the reduction of financial overruns. This means that stronger budget monitoring practices tended to occur alongside better reported control of financial overruns. The relationship is consistent with the practical role of monitoring: comparing actual spending with approved allocations provides information that can help managers identify and respond to budget deviations. Correlation, however, describes an association and does not by itself establish that budget monitoring is the only factor responsible for reducing overruns.

4.4 Regression Analysis

Multiple regression analysis was used in this study to assess the contribution of budget monitoring while accounting for expenditure monitoring and cost control monitoring. The model summary and coefficient results are presented in the following tables. The interpretation in this article remains focused on budget monitoring, which is the selected objective.

Table 4: Model Summary

Model statistic	Value
R	.805
R Square	.648
Adjusted R Square	.642
Standard error of the estimate	.23681
F statistic	107.448
Significance	$p < .001$

Source: Field data, 2026.

The model summary indicates that the financial monitoring practices included in the wider study model jointly explained a substantial proportion of the variation in the reduction of financial overruns. This overall explanatory power applies to the combined model and should not be interpreted as the contribution of budget monitoring alone. The result nevertheless provides context for assessing the individual predictors within the model.

Table 5. Regression Coefficient

Predictor	Standardized beta (β)	t	Significance	Decision
Budget monitoring	.559	8.266	$p < .001$	Null hypothesis rejected

Source: Field data, 2026.

The coefficient results indicate that budget monitoring had a positive and statistically significant contribution to reducing financial overruns when the other financial monitoring practices in the model were taken into account. The null hypothesis that budget monitoring had no statistically significant effect was therefore rejected. This finding suggests that the contribution of budget monitoring extends beyond general positive perceptions: its association with reduced financial overruns remained statistically meaningful within the combined regression model.

4.5 Discussion of Findings

This subsection interprets the findings in relation to the specific objective and the literature reviewed in this study. The discussion focuses on the practical meaning of regular budget reviews, comparison of actual and approved expenditure, monitoring reports, early identification of deviations, and the use of corrective action to reduce financial overruns in RUDP.

The findings suggest that budget monitoring is an important part of financial control in RUDP because it creates a regular process for comparing the project's financial position with its approved plans. When managers review budgets throughout implementation, they are better placed to identify whether resources are being used as intended and whether particular activities are placing pressure on available funds. This can support early intervention and reduce the possibility that small spending differences will continue unnoticed until they become substantial financial problems. The results therefore underline the value of treating budget monitoring as a continuous management activity rather than an administrative task carried out only for reporting purposes.

The comparison of actual expenditure with approved budgets is especially important because it provides a clear basis for examining financial performance. A budget sets out the resources expected to be required for planned activities, while actual expenditure shows how resources are being consumed during implementation. Comparing the two allows project teams to investigate the reasons for variations and to distinguish between changes that are necessary for project delivery and those that may indicate inefficient use of resources. This process can strengthen decisions about resource allocation, scheduling, and the management of financial commitments.

The findings also highlight the role of budget monitoring reports in supporting timely and informed decisions. Financial information is useful when it reaches the responsible personnel in a form that is understandable and sufficiently current to influence action. Reports that clearly identify spending trends and explain significant deviations can support accountability between project managers, finance personnel, technical teams, and oversight stakeholders. However, reporting alone is not enough. Its practical contribution depends on whether the information is discussed, whether responsibility for follow-up is assigned, and whether agreed corrective actions are implemented and reviewed.

The comparatively weaker responses relating to prompt identification and resolution of budget deviations suggest an area for improvement. Budget differences may arise for several reasons, including changes in implementation requirements, delays, procurement challenges, or inaccurate forecasts. If deviations are detected but not addressed quickly, the project may lose the opportunity to make manageable adjustments before costs rise further. RUDP management can therefore strengthen budget monitoring by setting clear thresholds for review, defining reporting timelines, assigning responsibility for investigating variances, and documenting decisions taken in response to the findings.

The inferential findings reinforce the practical interpretation that budget monitoring is meaningfully associated with the reduction of financial overruns. The significant relationship and the contribution observed in the regression model indicate that budget monitoring remains relevant even when other financial monitoring practices are considered. At the same time, the combined model includes other predictors, so the overall explanatory power cannot be attributed to budget monitoring alone. The results are best interpreted as evidence that budget monitoring is one important component of an integrated financial control system.

These findings are consistent with Kerzner's (2017) emphasis on comparing project performance with plans and using the resulting information to guide corrective action. They also align with Fleming and Koppelman (2021), whose discussion of project control highlights the value of tracking planned and actual performance. Literature on financial monitoring and accountability similarly emphasizes the importance of transparent financial information and oversight in infrastructure projects (Heller & Ferrari, 2022). Research on cost overruns also shows that financial outcomes are affected by interacting planning, governance, and implementation factors (Bakker et al., 2022; Flyvbjerg et al., 2023). The findings from RUDP therefore support the broader view that consistent budget monitoring can strengthen cost discipline, although it must operate alongside effective management and response procedures.

The findings can also be explained through Project Risk Management Theory, Agency Theory, and Contingency Theory. From a risk management perspective, budget monitoring helps identify financial warning signs and supports early responses. From an agency perspective, it improves the visibility of resource use and provides a basis for accountability. From a contingency perspective, the frequency and detail of reviews should reflect the risks and operating conditions of different project activities. Together, these theoretical perspectives suggest that effective budget monitoring requires timely information, clear responsibility, and monitoring arrangements suited to the project context.

5. Conclusion and Recommendations

This section presents the conclusions and recommendations arising from the findings relevant to the selected objective. The conclusion summarizes the contribution of budget monitoring, while the recommendations identify practical measures that RUDP management and relevant stakeholders can apply to strengthen financial control.

5.1 Conclusion

This study concludes that budget monitoring has a positive and statistically significant effect on reducing financial overruns in the Rwanda Urban Development Project in Nyarugenge District, Rwanda. Regular budget reviews, comparison of actual expenditure with approved allocations, and the use of financial monitoring reports help project personnel assess spending performance and identify emerging deviations. The findings also indicate that prompt follow-up remains important because monitoring can only prevent overruns when identified variations are investigated and appropriate corrective actions are taken. Strengthening budget monitoring can therefore improve financial accountability, support informed decisions, and contribute to more disciplined use of project resources.

5.2 Recommendations

Based on the findings and conclusion concerning budget monitoring, the following recommendations are proposed to strengthen financial oversight and reduce the risk of overruns in RUDP.

1. RUDP management should institutionalize regular budget review meetings throughout project implementation. These reviews should compare actual expenditure and outstanding commitments with approved allocations, explain important variations, and document the decisions made. The frequency of reviews should be appropriate to the scale, complexity, and financial risk of the activities being monitored.

2. Project managers and financial officers should improve the quality and timeliness of budget monitoring reports. Reports should clearly present planned budgets, actual expenditure, outstanding commitments, forecast costs, and explanations for significant deviations. They should be shared with the personnel responsible for financial and technical decisions so that monitoring information can be used to guide implementation rather than simply stored for record-keeping.

3. The project management team should establish a clear procedure for responding to budget deviations. The procedure should define when a deviation requires escalation, who is responsible for investigating it, how corrective action is approved, and how implementation of the action is followed up. This would help ensure that financial variations are not only identified but are also resolved before they develop into more serious overruns.

4. Relevant government and project oversight stakeholders should strengthen accountability by periodically reviewing whether budget monitoring recommendations have been implemented. Oversight should encourage transparent explanations of deviations and ensure that approved changes are documented. Such follow-up can improve the reliability of financial information and reinforce responsible use of project resources.

5. Finally, RUDP should provide practical capacity-building opportunities for project managers, finance staff, and technical personnel on budget variance analysis, forecasting, financial reporting, and corrective action. A shared understanding of budget monitoring procedures can improve coordination across project functions and help ensure that financial risks are recognized and managed consistently.

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