Effect of Project Risk Management on Performance of Social Development Projects in Rwanda: A Case of VUP Financial Services Project in Gakenke District

Nduwayezu Balthazar & Dr. Leopold HAKIZIMIMANA

Effect of Project Risk Management on Performance of Social Development Projects in Rwanda: A Case of VUP Financial Services Project in Gakenke District

Nduwayezu Balthazar[1] & Dr. Leopold HAKIZIMIMANA[2]
[1] Master of Project Management, University of Kigali, Rwanda
[2] Senior Lecturer, University of Kigali, Rwanda

Abstract

The general objective of the study was to assess the effect of project risk management on performance of social development projects in Rwanda. This study had the following specific objectives: to determine the effect of project risk identification on performance of VUP financial services project in Gakenke District, find out the effect of project risk analysis on performance of VUP financial services project in Gakenke District, assess the effects of project risk response on performance of VUP financial services project in Gakenke District and analyze the effect of project risk control on performance of VUP financial services project in Gakenke District. Target population of this study was 122 including 14 VUP staff at district level, 72 VUP at sector level and 36 Gakenke District Local leaders. The Solvin formula utilized to determine the appropriate sample size, as it provides a straightforward approach for computing the number of participants required for the study. The formula provides sample of 94 for the study. Cluster sampling used for selecting groups, or clusters, of participants from the population. The clusters chosen based on position and categories of population in VUP. The study also employed purposive sampling as the sampling technique. Questionnaire, interview and documentation research used as tools of data collection. The statistical analysis of the collected data conducted using Statistical Package for Social Sciences (SPSS) which is a widely used tool for statistical computation in research. The model summary presents the results of a regression analysis on project risk control, project risk identification, project risk analysis, and project risk response, on the dependent variable of project performance within the context of the VUP Financial Services project in Gakenke District. The value of R is 0.729, indicating a linear effect of the predictors on project performance. The R-squared value is 0.532, indicating that approximately 53.2% of the variance in project performance can be attributed to the combined effects of project risk control, risk identification, risk analysis, and risk response. This indicates a moderate level of explanation and indicate that the included predictors collectively contribute to understanding project performance. Gakenke District should establish a comprehensive risk identification framework regarding VUP financial services project involving diverse stakeholders, implementing rigorous risk analysis practices with advanced tools, fostering a proactive risk response culture through cross-functional collaboration.

1. Introduction

Despite the fact that most project managers spend the majority of their time contemplating how to achieve the project's goals, the majority of projects do not conclude on schedule. Every year, many projects throughout the globe crash and burn, costing businesses and governments tens of millions of dollars. Project delays, cost overruns, and bad planning all contribute to project failure in Rwanda; between 2009 and 2012, 65% of public projects were delayed, and 5.2% of these projects had cost overruns (Amandin & Kule, 2016).

VUP has experienced issues such as poor beneficiary selection, where local administrations fail to pick appropriate beneficiaries, corruption in selection, poor utilization of VUP funding, beneficiaries who utilize VUP revenue for non-development expenditures, and inadequate coordination. The loan procurement and distribution procedures have presented various problems to the financial services program. Those seeking loans must submit a business plan that has been authorized by SACCO authorities. However, many participants in the financial services first saw the program as a gift, comparable to the unconditional transfers given via direct assistance (Timothy *et al.*, 2020).

While previous studies have explored project risk management in various contexts globally, there is a limited understanding of its specific implications for social development projects in Rwanda. Existing studies predominantly focus on developed countries or large-scale infrastructure projects, neglecting the unique challenges and characteristics of social development projects in Rwanda. Moreover, most of the available research fails to provide a comprehensive analysis of the specific project risk management practices employed in Rwanda and their influence on performance of VUP financial services project in Gakenke District. From this point, the researcher examined how project risk identification associated with the project influence its overall performance, the effect of project risk analysis and the performance of the VUP financial services project in Gakenke District, the effects of project risk response on the performance of the VUP financial services project in Gakenke District and also how project risk control influences the performance of the VUP financial services project in Gakenke District.

The main objective of the research is to assess the effect of project risk management on performance of social development projects in Rwanda.

This study had the following specific objectives:

i. To determine the effect of project risk identification on performance of VUP financial services project in Gakenke District.
ii. To find out the effect of project risk analysis on performance of VUP financial services project in Gakenke District.
iii. To assess the effects of project risk response on performance of VUP financial services project in Gakenke District.
iv. To analyze the effect of project risk control on performance of VUP financial services project in Gakenke District.

The followings are the null hypotheses of the study formulated based on research objectives:

Ho1: Project risk identification has no significant effect on performance of VUP financial services project in Gakenke District.
Ho2: Project risk analysis has no significant effect on performance of VUP financial services project in Gakenke District.

Ho3: Project risk response has no significant effect on performance of VUP financial services project in Gakenke District.

Ho4: Project risk control has no significant effect on performance of VUP financial services project in Gakenke District.

2. Literature review

For this study, theoretical framework is a thorough look at and evaluation of the existing theories and ideas about the topic under study. It is the process of systematically analyzing and putting together information from different sources in order to get a full picture of issue.

2.1 Goal setting theory

The goal-setting theory was first introduced by Edwin A. Locke and Gary P. Latham in 1968. Since then, the theory has been widely studied and applied in various fields, including business, education, sports, and personal development. According to Locke and Latham, goals should be explicit, quantifiable, achievable, relevant, and time-bound. They also stated that feedback and support from supervisors and coworkers might assist people in meeting their objectives and improving their performance (Latham & Locke, 2019).

The goal-setting theory is a way of thinking about how to run a business. It says that making goals that are hard and specific can increase motivation, performance, and success. The idea is that both individuals and teams perform better when they have clear goals to work toward and a sense of purpose and direction. Goal-setting theory's detractors claim that it might have unexpected implications, such as unethical conduct or a concentration on short-term objectives at the expense of long-term goals. Yet proponents of the idea say that by carefully selecting and managing goals, these risks may be reduced. Goal-setting theory has had a substantial influence on management practice and is an important area of study and development in organizational behavior (Seijts & Latham, 2020).

The goal-setting theory helped this research, which aims to improve project performance and get better results, by giving it a framework. The idea helped to make sure that everyone involved in a project is working toward the same goals and that resources are used in the best way possible by setting clear goals, creating motivation and commitment, and encouraging responsibility and ownership.

2.2 Theory of Change

The Theory of Change (ToC) is a management and planning approach that describes how change happens and what actions are needed to achieve specific goals. The origins of the Theory of Change are difficult to trace, but it is believed to have been first used in the 1960s by the social science community in the United States. In recent years, the Theory of Change has gained popularity as a planning and evaluation tool in the fields of international development, social innovation, and philanthropy. The ToC approach helps organizations and communities to clarify their goals, identify the necessary steps to achieve them, and measure progress towards their desired outcomes (Connell *et al*., 2020).

In this study, the Theory of Change (ToC) used to help plan, carry out, and evaluate projects. The ToC method is especially useful for big, complicated projects where it is important to know what changes are happening and why, as well as how they are happening. The ToC method helped project managers get a better understanding of the environment in which their projects run and come up with strategies that are more in line with the results and goals of the project.

2.3 Results Based Management Theory

Results-Based Management (RBM) theory emerged in the 1990s in response to a growing recognition of the need for more effective and accountable management of development programs and projects. The approach was developed in the context of international development organizations, such as the World Bank and the United Nations, but has since been adopted by a wide range of organizations in the public and private sectors. The basic premise of RBM is that organizations should focus on achieving results and outcomes rather than simply implementing activities. RBM involves a systematic and continuous process of planning, monitoring, and evaluation to ensure that programs and projects are achieving their intended results and making progress towards their objectives (Yeoh & Chong, 2021).

RBM emphasizes the importance of defining clear and measurable results and outcomes, and developing strategies and activities that are aligned with these objectives. It also emphasizes the importance of monitoring and evaluating progress towards these objectives, and using this information to adapt and improve programs and projects over time. RBM has evolved to include a range of tools and methodologies, such as logic models, performance indicators, and data management systems. RBM is widely used by governments, non-profit organizations, and private sector firms around the world to improve the effectiveness and accountability of their programs and projects (Segerstedt & Öhman, 2020).

2.4 Theory of Constraints

The assumptions of the TOC, as introduced by an Israeli physicist Dr. Moshe Eliyahu Goldratt, were first published in the 1984 book The Goal: Excellence in Manufacturing which offered comprehensive solutions for production management. One of the three principles of TOC is concentration, i.e. focus on the most important issues. It means that all processes and positions should be supervised, although the non-critical may enjoy a certain autonomy. Most attention should be given to tasks that are crucial from the point of view of the system as a whole. The main aim of every company is to increase the profit. According to this point of view, constraints are the main obstacles in achieving the aims of companies. In other words, anything that gets in the way of gaining more profit is considered as constraint. The identification of the constraint is the basis for improving the production system. This theory must be considered in project planning process just by identifying all threats and risk related to the project so that relevant strategies should be taken to address issues that can affect project performance (Trojanowska & Dostatni, 2017).

Project managers has to plan how those triple project constraints should be addressed as key to project performance. Early identification of project constraints/challenges helps in the selection of appropriate strategies to be used so that the project stay competitive regardless any factor that can hinder the project success. Each of those three limitations of the project (scope , cost and time)has its impacts on project s' execution yet since these components have some relationship, one imperative bears an impact on the other two, in the long run influencing ventures expectations to a more significant degree (Muchelule, 2018).

Most projects are difficult to manage because they involve uncertainty, and involve three different and opposing commitments (due date, budget, and content). Triple constraints criteria (time, scope and cost) in project management have been accepted as a measure of project success.

3. Research methodology
3.1 Research design

The researcher employed descriptive and correlational analysis in this approach. The methodology employed in this study involves conducting a descriptive analysis, wherein the frequency, proportion, and percentage of each factor under investigation computed. The Pearson correlation utilized to examine and quantify the quantitative association between two variables. The examination of the relationship between independent and dependent variables involves the utilization of a correlation matrix.

3.2. Population of the study and sample size

According to Snelson (2016), in research technique, the phrase population does not relate to the population of a nation, but rather to the objects, topics, facts, instances, events, or occupations indicated for selection. Target population of this study was 122 including 14 VUP staff at district level, 72 VUP at sector level and 36 Gakenke District Local leaders.

The total sample determined using Solvin formula.

$$n = \frac{N}{1 + N(e)^2}$$

In this formula, n represents the size of the sample, N the number of participants, and e the margin of error (0.05).

$$n = \frac{122}{1 + 122(0.05)^2} = \frac{122}{1 + 0.305} = \frac{122}{1.305} = 94$$

This calculation compared to the previous equation yields a representative sample of 94 for the study.

Cluster sampling used for selecting groups, or clusters, of participants from the population. The clusters chosen based on position and categories of population in VUP. The study also employed purposive sampling as the sampling technique. The main aim of purposeful sampling is to focus on specific characteristics of a population that hold significance, thereby allowing the researcher to effectively address research questions. The researcher utilizes purposive sampling methodology to gather data, deliberately selecting individuals who share a specific set of characteristics and information.

3.3 Data collection instruments

To guarantee the proper completion of the research, each target explored using precise questions. The following instruments utilized to gather data for the research: a questionnaire and a documentation research.

Upon comprehending and evaluating the relevance of written materials to this study, the researcher classified them on handwritten notes and subsequently transcribe them into a computer for consolidation. The exploration of literature and global perspectives is essential in the development of a modeling tool that can be reviewed and discussed by the readership.

The study employed response restrictions, wherein participants limited to providing predetermined answers or selecting from a predetermined list of responses. One advantage of using closed-ended statements is that the responses obtained are standardized and can be compared across multiple individuals. Coding and analysis can be simplified by directly coding survey responses, resulting in cost and time savings. As a result, participants generally informed of the objective of the statement and can frequently anticipate the anticipated response.

The interview is a methodological approach that involves the use of questioning to elicit responses. It typically involves two or more individuals engaging in a dialogue, with an interviewer posing questions and the interviewees providing their ideas and observations. The objective of this study is to gather data from the employees of VUP at district level.

3.4 Reliability

The internal consistency of the research instrument assessed using Cronbach's Alpha. The reliability coefficient is a statistical measure used to assess the consistency and stability of a given measure or test. It is commonly Cronbach's Alpha serves as a measure of the internal consistency or reliability of a set of variables or items. It indicates the extent to which the items in a scale or test are interrelated or correlated with each other. The present study utilized two distinct methods to assess trustworthiness: the comparability test and the internal consistency test.

Table 1: Reliability

Variables	N of Items	Cronbach's Alpha	Decision
Project risk identification	7	.805	Accept
Project risk analysis	7	.831	Accept
Project risk response	7	.783	Accept
Project risk control	7	.751	Accept
Project performance	7	.827	Accept

A satisfactory level of reliability is typically considered to be within the range of 0.7 to 1.0. The present study considers an alpha coefficient of 0.7 or higher as an acceptable level of validity.

3.5. Methods of data analysis

Creswell (2014) posits that during the process of data analysis, researchers employ quantitative and/or analytical methodologies to systematically explicate, present, synthesize, and evaluate data. The process of evaluating data involves the application of logic and analytical thinking to examine each component of the data. The study involved the aggregation of data from multiple sources, which was subsequently undergo evaluation and interpretation to yield a conclusive decision or outcome. The statistical analysis of the collected data conducted using Statistical Package for Social Sciences (SPSS) which is a widely used tool for statistical computation in research. Linear regression analysis utilized by the researcher to derive conclusions from the survey. The regression analysis model that utilized is as follows:

$$A = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon:$$

A is Project performance,
β_0 is constant coefficient

β_1, β_2 and β_3 are Regression Coefficients
X_1 is project risk identification,
X_2 is project risk analysis,
X_3 is project risk response,
X_4 is project risk control,
ε = error term

4. Research findings

The focus of this chapter was on providing specifics on the results of the research and discussing those results at length.

Table 2 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.729[a]	.532	.516	9.86622

a. Predictors: (Constant), project risk control, project risk identification, project risk analysis, project risk response

Source: Research findings, August 2023

The model summary table (Table 2) presents the results of a regression analysis that examines the effect of multiple predictors, including project risk control, project risk identification, project risk analysis, and project risk response, on the dependent variable of project performance within the context of the VUP Financial Services project in Gakenke District. The value of R is 0.729, indicating a linear the effect of the predictors on project performance. The R-squared value is 0.532, indicating that approximately 53.2% of the variance in project performance can be attributed to the combined effects of project risk control, risk identification, risk analysis, and risk response. This indicates a moderate level of explanation and indicate that the included predictors collectively contribute to understanding project performance. The findings from this study resonate with Ojiako *et al.* (2021), who stress the importance of evaluating project performance not only in terms of meeting time, cost, and quality objectives but also in terms of satisfying client needs in a sustainable and satisfactory manner. The positive correlations observed between various aspects of risk management (risk control, identification, analysis, and response) and project performance align with their assertion that continuous improvement and lessons learned from previous projects contribute to better project outcomes.

Table 3 ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	12925.983	4	3231.496	33.197	.000[b]
	Residual	11389.041	117	97.342		
	Total	24315.025	121			

a. Dependent Variable: Project performance
b. Predictors: (Constant), project risk control, project risk identification, project risk analysis, project risk response

Source: Research findings, August 2023

The ANOVA results, represented in Table 3, indicate a statistically significant effect of combined predictors (project risk control, risk identification, risk analysis, and risk response) on the dependent variable (project performance) of the VUP Financial Services project in Gakenke District. The F-statistic of 33.197 is significant at a $p<0.05$, This indicate that the collective impact of project risk management practices, including risk control, identification, analysis, and response, is associated with variations in project performance. As stated by Pinto

and Slevin (2019), effective project management practices are instrumental in improving project performance. The ANOVA results presented in Table 3 affirm this perspective by revealing a significant the effect of the combined predictors project risk control, risk identification, risk analysis, and risk response on project performance in the VUP Financial Services project in Gakenke District.

Table 4 Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	7.307	3.220		2.270	.025
	Project risk identification	1.272	.841	.390	1.513	.013
	Project risk analysis	.244	1.511	.076	.162	.002
	Project risk response	1.815	1.603	.561	1.132	.006
	Project risk control	.958	2.131	.294	.449	.045
a. Dependent Variable: Project performance						

Source: Research findings, August 2023

The Coefficients table (Table 4) presents the results of the multiple regression analysis, highlighting the effect of the individual predictors (project risk identification, risk analysis, risk response, and risk control) on the dependent variable (project performance) in the VUP Financial Services project in Gakenke District. The constant term is 7.307, indicating the expected project performance level when all predictors are set to zero. Among the predictors, project risk identification holds a coefficient of 1.272 with a significant p-value of 0.013, indicating a positive impact on performance. This aligns with findings from Ojiako et al. (2021), highlighting the importance of identifying risks early to enhance project outcomes. The coefficient for project risk analysis is 0.244, with a p-value of 0.002, indicating a less pronounced effect. However, this aligns with Timothy et al. (2020), emphasizing the role of risk analysis in improving project results. Project risk response holds the highest coefficient of 1.815 and a p-value of 0.006, indicating a significant positive influence. This finding resonates with Cagliano (2015), emphasizing proactive strategies to mitigate risks. Project risk control, with a coefficient of 0.958 and a marginally significant p-value of 0.045, also contributes positively, in line with Patil & Ade (2015), stressing the importance of continuous monitoring. Overall, the findings underscore the multifaceted nature of risk management in shaping project performance outcomes.

Table 5 Summary of hypotheses results

Hypotheses	P Value	Comment
Ho1: Project risk identification has no significant effect on performance of VUP financial services project in Gakenke District.	p<0.05	**Rejected**
Ho2: Project risk analysis has no significant effect on performance of VUP financial services project in Gakenke District.	p<0.05	**Rejected**
Ho3: Project risk response has no significant effect on performance of VUP financial services project in Gakenke District.	p<0.05	**Rejected**
Ho4: Project risk control has no significant effect on performance of VUP financial services project in Gakenke District.	p<0.05	**Rejected**

The null hypotheses of the study formulated based on research objectives: Project risk identification has no statistically significant effect on performance of VUP financial services project in Gakenke District. Project risk analysis has no statistically significant effect on performance of VUP financial services project in Gakenke District. Project risk response has no statistically significant effect on performance of VUP financial services project in Gakenke District. Project risk control has no statistically significant effect on performance of VUP financial services project in Gakenke District. The null hypotheses for project risk identification, analysis, response, and control indicates no significant effect on project performance. The respective all null hypotheses were rejected, indicating that the specific risk management aspect has a statistically significant impact on project performance.

5. Conclusion

The study aimed to assess the effect of project risk management on the performance of social development projects in Rwanda, specifically focusing on the VUP financial services project in Gakenke District. The research had four specific objectives related to project risk identification, analysis, response, and control. Null hypotheses were formulated for each objective, assuming no statistically significant effect on the project's performance. Upon analyzing the data and testing the hypotheses, the study concluded that all the null hypotheses were rejected. This implies that project risk identification, analysis, response, and control each have a statistically significant effect on the performance of the VUP financial services project in Gakenke District. In other words, the study found evidence to support that effective project risk management positively influences the overall performance of social development projects. This indicates that identifying, analyzing, responding to, and controlling risks in the VUP financial services project are critical components for achieving successful project outcomes. These findings emphasize the importance of a comprehensive and well-executed project risk management strategy in enhancing the overall performance of social development initiatives in Gakenke District.

6. Recommendations

VUP financial services project in Gakenke District would benefit from establishing a comprehensive risk identification framework that involves engaging diverse stakeholders and leveraging their views to comprehensively identify and assess potential risks across all phases of the project.

VUP financial services project in Gakenke District should implement rigorous risk analysis practices, integrating advanced analytical tools and techniques, to gain a deeper understanding of the potential impacts and probabilities of identified risks.

References

Alhawari, S. (2016). Relationship among project management processes and knowledge *repository* for project success. *International Journal of Enterprise Information Systems* 12(4), 16–30

Cagliano, A. C., Grimaldi, S., and Rafele, C. (2015). Choosing project risk management techniques. A theoretical framework. *Journal of Risk Research* 18(2), 232–248

Connell, J. P., Kubisch, A. C., Schorr, L. B., & Weiss, C. H. (2020). *New Approaches to Evaluating Community Initiatives*: Concepts, Methods, and Contexts. Aspen Institute.

Ojiako, U., Chipulu, M., Maguire, S., & Marshall, A. (2021). *Managing Projects for Performance Improvement:* Tools and Techniques for Tracking and Reviewing Progress. Routledge.

Patil, S., and Ade, R. (2015). A global software engineering knowledge management approach for intensive risk mitigation. *International Journal of Managing Public Sector Information and Communication Technologies* 6(1), 1–8

Pinto, J. K., & Slevin, D. P. (2019). *Project Success: Critical Factors and Behaviors*. Routledge.

Seijts, G. H., & Latham, G. P. (2020). *The Work of Leaders*: How Vision, Alignment, and Execution Will Change the Way, You Lead. Wiley.