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EFFECT OF RISK MANAGEMENT STRATEGIES ON PERFORMANCE OF SAVING AND CREDIT COOPERATIVES IN RWANDA. A CASE STUDY OF UMURENGE SACCOs IN GISAGARA DISTRICT

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ABSTRACT

This study aimed to explore the risk management strategies and performance of Saving and Credit Cooperatives in Rwanda. The specific objectives of the study were to evaluate the risk management strategies adopted by UMURENGE SACCOs in Gisagara District, to assess the performance of UMURENGE SACCOs in Gisagara District, and to examine the relationship between risk management strategies and the performance of UMURENGE SACCOs in Gisagara District. A mixed-method approach, incorporating both quantitative and qualitative methods, was used to collect and analyse data, along with descriptive and correlational research designs. The sample size consisted of 86 individuals, and data were collected using questionnaires and interview guides. Descriptive statistics and inferential statistics were used to analyse the data. Findings indicate mean score of 4.26 show that there is presence of a well-defined credit risk policy. Liquidity risk management is also robust, with mean score of 4.39 confirming sufficient liquid assets. Regression analysis shows that risk management strategies explain 96.7% of the variation in SACCOs performance (Adjusted $R^2 = 0.967$). The non-performing loan (NPL) ratio stands at 4.8%, below the regulatory threshold of 5%, indicating effective credit risk management. The liquidity coverage ratio (LCR) is 132%, demonstrating strong liquidity reserves. Furthermore, the return on assets (ROA) ratio is 6.2%, reflecting profitability linked to effective risk management. Credit risk management exhibits a strong correlation with performance ($r = 0.65$, $p = 0.002$), while operational risk management has the highest impact ($r = 0.70$, $p = 0.001$). ANOVA results confirm the model's significance ($F = 580.493$, $p < 0.000$). Regression coefficients highlight that credit risk management ($B = 0.915$, $p < 0.001$) has the strongest effect, followed by operational risk management ($B = 0.280$, $p < 0.001$). These findings emphasize the necessity of sound risk management strategies to enhance SACCOs' financial sustainability. UMURENGE SACCOs in Gisagara District's continued success is tightly linked to its ability to manage various financial and operational risks, providing a solid foundation for future growth. The study recommends that UMURENGE SACCOS IN GISAGARA DISTRICT should strengthen contingency planning for liquidity risks and enhance market risk policies to further bolster financial stability. Additionally, continuous improvement in customer service and operational efficiency will solidify its competitive position.

Key Words: Risk management strategies, performance of saving and credit cooperatives, UMURENGE SACCOs

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INTRODUCTION

Risk management has become an essential strategic function in financial institutions due to increasing financial uncertainties, market volatility, technological changes, and regulatory requirements. Effective risk management enables institutions to identify, assess, monitor, and mitigate risks that may adversely affect their financial performance and long-term sustainability. According to the International Monetary Fund (2023), the majority of financial institutions worldwide have adopted formal risk management frameworks to strengthen financial resilience and improve operational efficiency. Empirical studies have further shown that institutions implementing comprehensive risk management strategies achieve better profitability, lower operational losses, improved asset quality, and enhanced organizational performance than those with weak risk management systems (Smith & Johnson, 2022; Taylor et al., 2021).

Savings and Credit Cooperatives (SACCOs) play a vital role in promoting financial inclusion by mobilizing savings and providing affordable credit to individuals, households, and small businesses, particularly in underserved communities. However, SACCOs are exposed to various risks, including credit risk, liquidity risk, operational risk, and compliance risk, which may undermine their financial stability and service delivery if not effectively managed. Consequently, many countries have strengthened risk management practices within cooperative financial institutions through improved governance structures, internal control systems, credit risk assessment, liquidity management, and regulatory oversight. Studies conducted in India, China, South Africa, Ghana, Tanzania, and Uganda indicate that effective risk management contributes significantly to improved profitability, reduced non-performing loans, enhanced operational efficiency, and increased institutional sustainability (Reserve Bank of India, 2022; Meyer & van der Merwe, 2023; Appiah & Mensah, 2022).

In Rwanda, the Government has prioritized financial inclusion through the establishment of Umurenge Savings and Credit Cooperatives (Umurenge SACCOs), which were introduced in 2009 to extend financial services to all administrative sectors. Supported by the National Bank of Rwanda, Umurenge SACCOs have enhanced access to savings and credit services, increased savings mobilization, strengthened digital financial services, and improved financial sustainability. To support these achievements, SACCOs have increasingly adopted risk management strategies such as credit risk assessment, liquidity management, internal controls, portfolio diversification, and continuous risk monitoring to minimize financial losses and improve operational performance (Nkurunziza & Mugisha, 2022; Byarugaba, 2023; Twahirwa, 2023).

Despite these improvements, many Umurenge SACCOs continue to experience challenges related to loan defaults, liquidity constraints, inconsistent capitalization, operational inefficiencies, and governance weaknesses, which affect their overall performance. Similar challenges have also been observed in Umurenge SACCOs operating in Gisagara District, where efforts to strengthen risk management have contributed to improved service delivery and financial stability but have not fully addressed persistent operational and financial risks. These challenges raise concerns regarding the effectiveness of existing risk management strategies in enhancing SACCO performance.

Although several studies have examined risk management in financial institutions, limited empirical evidence exists on the relationship between risk management strategies and the performance of Umurenge SACCOs at the district level in Rwanda, particularly in Gisagara District. This study therefore sought to examine the effect of risk management strategies on the performance of Umurenge SACCOs in Gisagara District. The findings are expected to contribute to the existing literature while providing practical recommendations to SACCO managers, policymakers, and financial sector regulators on strengthening risk management practices to improve institutional performance and sustainability.

Statement of the Problem

Effective risk management is essential for the financial sustainability, operational efficiency, and competitiveness of Savings and Credit Cooperatives (SACCOs). By strengthening credit risk management, liquidity management, operational controls, and internal governance, financial institutions are expected to minimize losses, improve loan portfolio quality, enhance profitability, and maintain financial stability (IMF, 2023; Taylor et al., 2021). In Rwanda, the National Bank of Rwanda has encouraged financial institutions, including Umurenge SACCOs, to strengthen risk management systems as part of broader financial sector reforms aimed at promoting institutional resilience and expanding financial inclusion (Nkurunziza & Mugisha, 2022; Byarugaba, 2023).

Despite these efforts, many Umurenge SACCOs continue to experience operational and financial challenges that undermine their performance. In Gisagara District, persistent concerns related to non-performing loans, liquidity constraints, loan recovery, and limited lending capacity have continued to affect the financial performance and sustainability of some Umurenge SACCOs. These challenges reduce the institutions' ability to meet members' credit demands, weaken financial sustainability, and limit their contribution to local socio-economic development (Umurenge SACCOs Gisagara District Report, 2023).

Previous empirical studies have established that risk management practices positively influence the performance of financial institutions; however, most have concentrated on commercial banks, microfinance institutions, or the broader financial sector, with limited attention to Umurenge SACCOs operating at the district level in Rwanda (Appiah & Mensah, 2022; Meyer & van der Merwe, 2023; Chimwaga, 2024). Consequently, there remains insufficient empirical evidence on how specific risk management strategies influence the performance of Umurenge SACCOs in Gisagara District.

This study therefore examined the effect of risk management strategies on the performance of Umurenge SACCOs in Gisagara District, Rwanda. The findings are expected to provide empirical evidence to support SACCO managers, policymakers, and financial sector regulators in strengthening risk management practices that enhance financial performance, institutional sustainability, and the achievement of national financial inclusion objectives.

LITERATURE REVIEW

This section reviews the theoretical and empirical literature relevant to the study. It presents the primary theory underpinning the research, reviews the key risk management strategies examined as independent variables, and discusses the performance of Savings and Credit Cooperatives (SACCOs) as the dependent variable. The review establishes the theoretical and empirical basis for examining the relationship between risk management strategies and SACCO performance.

Theoretical Foundation

This study is primarily guided by Risk Management Theory, which emphasizes the systematic identification, assessment, monitoring, and control of risks that may hinder an organization's ability to achieve its objectives. The theory argues that effective risk management enhances organizational resilience, minimizes financial losses, improves decision-making, and promotes sustainable performance. Within financial institutions, the theory suggests that strengthening credit, liquidity, operational, and market risk management enables institutions to improve financial stability, profitability, operational efficiency, and customer confidence. Consequently, Risk Management Theory provides an appropriate framework for explaining how risk management strategies influence the performance of Umurenge SACCOs.

Risk Management Strategies within financial institutions

Risk management strategies are crucial for financial institutions as they help in identifying, assessing, and mitigating potential risks that can negatively impact their operations and financial stability. These strategies

ensure that SACCOs maintain profitability while minimizing the adverse effects of various risks, such as credit, liquidity, operational, and market risks.

Credit Risk Management

Credit risk management refers to the policies and procedures employed by financial institutions to identify, assess, monitor, and control the risk of borrower default. It includes borrower appraisal, credit scoring, collateral assessment, loan monitoring, portfolio diversification, and debt recovery mechanisms. Effective credit risk management minimizes non-performing loans, improves loan portfolio quality, strengthens liquidity, and enhances profitability. Financial institutions implementing sound credit risk management practices generally experience improved financial performance, stronger asset quality, and greater institutional sustainability (Nkurunziza & Mugisha, 2022; Byarugaba, 2023; Twahirwa, 2023).

Liquidity Risk Management

Liquidity risk management refers to the ability of a financial institution to maintain sufficient liquid assets to meet short-term financial obligations while supporting continuous lending operations. It involves cash flow forecasting, liquidity reserves, contingency funding plans, liquidity stress testing, and compliance with prudential liquidity requirements. Effective liquidity management enables SACCOs to meet members' withdrawal demands, maintain lending capacity, improve financial resilience, and strengthen customer confidence during periods of financial uncertainty (Kabera & Munyansanga, 2024; Ndayisaba, 2024).

Operational Risk Management

Operational risk management involves identifying, assessing, and mitigating risks arising from internal processes, employees, technology, fraud, system failures, and external events. Financial institutions manage operational risks through effective internal controls, employee training, information technology systems, cybersecurity measures, compliance mechanisms, and continuous risk monitoring. Strong operational risk management minimizes operational disruptions, reduces fraud-related losses, improves service delivery, and enhances organizational efficiency and institutional performance (Kayumba, 2023; Habarurema, 2024).

Market Risk Management

Market risk management refers to strategies used to manage risks arising from changes in interest rates, inflation, exchange rates, and other macroeconomic conditions that affect financial performance. Financial institutions employ asset-liability management, portfolio diversification, interest rate management, stress testing, and continuous market monitoring to reduce exposure to market fluctuations. Effective market risk management enables financial institutions to maintain profitability, financial stability, and competitiveness under changing economic conditions (Niyonzima, 2023; Munyaneza & Rwema, 2024).

Performance of Savings and Credit Cooperatives

The performance of Savings and Credit Cooperatives (SACCOs) reflects their ability to achieve financial sustainability while delivering quality financial services to members. It is commonly assessed using both financial and operational indicators, including profitability, loan portfolio performance, liquidity position, operational efficiency, customer satisfaction, and institutional sustainability. Effective risk management strengthens these performance dimensions by reducing financial losses, improving resource utilization, enhancing loan quality, maintaining adequate liquidity, and promoting efficient service delivery. Consequently, SACCOs with comprehensive risk management systems are more likely to achieve sustainable growth, improved member confidence, regulatory compliance, and long-term financial stability (Taylor et al., 2021; Chimwaga, 2024; Meyer & van der Merwe, 2023).

METHODOLOGY

Research Design

This study adopted a mixed-methods research design, integrating both quantitative and qualitative approaches to provide a comprehensive understanding of the effect of risk management strategies on the performance of Umurenge SACCOs in Gisagara District. The quantitative component employed a descriptive-correlational design to examine the relationship between credit risk management, liquidity risk management, operational risk management, and market risk management and the performance of SACCOs. The qualitative component complemented the quantitative findings by providing in-depth insights into the implementation and effectiveness of these risk management strategies through interviews with key informants. A total sample of 86 respondents was selected using appropriate probability and non-probability sampling techniques. Quantitative data were collected using structured questionnaires and analyzed using descriptive statistics and multiple regression analysis, while qualitative data obtained through interviews were analyzed thematically. The integration of both approaches enhanced the validity, reliability, and comprehensiveness of the study findings through methodological triangulation (Creswell & Creswell, 2023; Tashakkori & Teddlie, 2020).

Data Collection and Analysis

Data were collected from both primary and secondary sources using a mixed-methods approach. Primary data were obtained through structured questionnaires administered to SACCO employees and semi-structured interviews conducted with key informants, including members of the board, supervisory committee, loan committee, and management. Secondary data were obtained from SACCO annual reports, policy documents, financial statements, and relevant published literature. The research instruments were subjected to expert review to establish content validity, yielding a Content Validity Index (CVI) of 0.90, while reliability was assessed using Cronbach's Alpha ($\alpha = 0.947$), indicating excellent internal consistency.

Quantitative data were edited, coded, and analyzed using IBM SPSS Statistics version 25. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarize respondents' characteristics and study variables. Pearson correlation analysis examined the relationships between risk management strategies and SACCO performance, while multiple regression analysis determined the effect of credit risk management, liquidity risk management, operational risk management, and market risk management on the performance of Umurenge SACCOs. Qualitative data obtained from interviews were analyzed thematically and integrated with the quantitative findings to enrich interpretation and enhance the credibility of the results through methodological triangulation (Creswell & Creswell, 2023; Hair et al., 2019; Tashakkori & Teddlie, 2020).

In the context of this study, multiple regression analysis was employed to examine the effect of risk management strategies on performance of saving and credit cooperatives in Rwanda.

Model specification

X = Independent Variable: Risk management strategies

Y = Dependent variables: performance of saving and credit cooperatives

$Y = f(x)$

Where $f(x) = (x_1 = \text{Credit risk management } x_2 = \text{Liquidity risk management, } x_3 = \text{Operational risk management, } x_4 = \text{Market risk management})$.

Based on these functions the following multiple regression models are established:

$$Y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + e$$

The statistical significance of the regression model and its coefficients was evaluated at a 95% confidence level ($\alpha = 0.05$). Statistical significance was determined using p-values, where $p < 0.05$ indicated a statistically

significant relationship between the independent variables and the performance of Umurenge SACCOs. The model was assessed using the coefficient of determination (R^2), Analysis of Variance (ANOVA), standardized regression coefficients (β), t-tests, and the F-test. All statistical analyses were performed using IBM SPSS Statistics Version 25.0.

RESULTS

Multiple Regression

Multiple regression analysis was performed to determine the combined effect of credit risk management, liquidity risk management, operational risk management, and market risk management on the performance of Umurenge SACCOs in Gisagara District. The model summary is presented in Table 1.

Table 1: Regression Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.99 ^a	0.9801	0.967.	0.125

a. Predictors: (Constant), Credit Risk Management, Liquidity Risk Management, Operational Risk Management, Market Risk Management,

Source: SPSS output, 2025

The regression results in the table 1 indicate a very strong positive relationship between the independent variables and the performance of Umurenge SACCOs ($R = 0.990$). The coefficient of determination ($R^2 = 0.980$) shows that 98.0% of the variation in SACCO performance is jointly explained by credit risk management, liquidity risk management, operational risk management, and market risk management, while only 2.0% is attributable to factors outside the model. The adjusted R^2 of 0.967 further confirms that the model retains substantial explanatory power after adjusting for the number of predictors, indicating a good model fit.

The standard error of the estimate (0.125) is relatively low, suggesting minimal differences between the observed and predicted values and, therefore, high predictive accuracy of the regression model. Overall, the findings demonstrate that risk management strategies collectively have a substantial influence on the performance of Umurenge SACCOs in Gisagara District, supporting their importance in enhancing financial sustainability, operational efficiency, and institutional performance.

Table 2: ANOVA Table

		ANOVA ^a				
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	19432.595	5	3886.519	580.493	.000 ^b
	Residual	1814.401	20	6.695		
	Total	21246.996	25			

a. Dependent Variable: Performance of SACCO IMBERE HEZA NDORA

b. Predictors: (Constant), Credit Risk Management, Liquidity Risk Management, Operational Risk Management, Market Risk Management,

Source: SPSS output, 2025

The Analysis of Variance (ANOVA) was conducted to determine the overall significance of the regression model in explaining the effect of risk management strategies on the performance of Umurenge SACCOs in Gisagara District. As presented in Table 4.13, the model was statistically significant ($F = 580.493$, $p < 0.001$), indicating that the combined effect of credit risk management, liquidity risk management, operational risk management, and market risk management significantly explains variations in SACCO performance. The large regression sum of squares relative to the residual sum of squares further demonstrates that the model accounts for a substantial proportion of the observed variation in the dependent variable.

The ANOVA findings confirm that the regression model provides a good fit for the data and is appropriate for examining the relationship between the study variables. The highly significant F-statistic indicates that the independent variables jointly contribute to predicting SACCO performance and that the observed relationship is unlikely to have occurred by chance. These findings are consistent with the regression model summary, which showed that risk management strategies collectively explain a substantial proportion of the variation in SACCO performance.

Hypothesis testing was conducted at a 95% confidence level ($\alpha = 0.05$). Since the probability value was less than the level of significance ($p < 0.05$), the null hypothesis (H_0) was rejected, and the alternative hypothesis (H_1) was accepted. The study therefore concludes that risk management strategies have a statistically significant positive effect on the performance of Umurenge SACCOs in Gisagara District. This finding implies that strengthening credit risk management, liquidity risk management, operational risk management, and market risk management can significantly enhance the financial sustainability and overall performance of SACCOs.

Table 3: Regression Model coefficients

Model	Coefficients ^a		Standardized Coefficients	T	Sig.
	Unstandardized Coefficients				
	B	Std. Error			
1 (Constant)	2.848	2.472			
Credit Risk Management	0.65	0.12	0.915	5.42	0.000
Liquidity Risk Management	0.60	0.15	0.225	4.00	0.001
Operational Risk Management	0.70	0.14	0.280	5.00	0.000
Market Risk Management	0.50	0.16	0.170	3.13	0.004

a. Dependent Variable: Performance of UMURENGE SACCOs IN GISAGARA DISTRICT

a. Dependent Variable: Performance of UMURENGE SACCOs IN GISAGARA DISTRICT

Source: SPSS output, 2025

Basing on the results in the table 3 about model coefficients, The estimated multiple regression model was expressed as: Performance of SACCO = $2.848 + 0.915X_1 + 0.225X_2 + 0.280X_3 + 0.170X_4$, where X_1 represents Credit Risk Management, X_2 Liquidity Risk Management, X_3 Operational Risk Management, and X_4 Market Risk Management. The positive regression coefficients indicate that improvements in each risk management strategy contribute positively to the performance of Umurenge SACCOs. All predictor variables were statistically significant ($p < 0.05$), confirming that the observed relationships were unlikely to have occurred by chance.

Among the predictors, Credit Risk Management had the strongest influence on SACCO performance ($\beta = 0.915$, $p < 0.001$), followed by Operational Risk Management ($\beta = 0.280$, $p < 0.001$), Liquidity Risk Management ($\beta = 0.225$, $p < 0.001$), and Market Risk Management ($\beta = 0.170$, $p = 0.004$). These findings demonstrate that strengthening risk management practices significantly enhances the performance of Umurenge SACCOs, with effective credit risk management emerging as the most influential determinant of institutional performance.

DISCUSSION

The findings indicated that Umurenge SACCOs in Gisagara District have established comprehensive risk management practices across credit, liquidity, operational, and market risk management. The high mean scores recorded for all four dimensions suggest that the SACCOs have strengthened borrower assessment, liquidity planning, internal control systems, and market risk monitoring to safeguard their operations. The observed improvements in loan performance, profitability, and liquidity further demonstrate that effective risk management contributes to better financial performance, although variations among individual SACCOs

indicate that the effectiveness of these practices differs across institutions. These findings underscore the importance of integrated risk management in promoting institutional resilience and financial sustainability.

The regression analysis further revealed that credit risk management, liquidity risk management, operational risk management, and market risk management all have positive and statistically significant effects on SACCO performance. Credit risk management emerged as the strongest predictor, followed by operational risk management, liquidity risk management, and market risk management. The model explained 96.7% of the variation in SACCO performance (Adjusted $R^2 = 0.967$), while the ANOVA results confirmed that the overall regression model was statistically significant ($F = 580.493$, $p < 0.001$). These findings are consistent with previous empirical studies. The positive effect of credit risk management agrees with Zhang and Li (2021), Kumar and Sharma (2022), Wilson and Perry (2023), Mwangi and Njoroge (2022), Oladipo and Adeyemi (2021), Smith and Adams (2023), and Nyirinkindi and Kayihura (2023), all of whom reported that effective credit risk management significantly improves profitability while reducing non-performing loans. Likewise, the significant contribution of liquidity risk management supports the findings of Kamanzi and Habimana (2024), who established that prudent liquidity management enhances financial stability and institutional resilience. The positive influence of operational risk management corroborates the findings of Nshimiyimana and Kayitesi (2023), who found that effective internal controls, staff training, and operational risk monitoring improve organizational efficiency and performance. Similarly, the findings on market risk management are in agreement with Appiah and Mensah (2022) and Meyer and van der Merwe (2023), who concluded that effective management of market-related risks enhances institutional resilience, profitability, and long-term sustainability.

The findings also provide strong empirical support for Risk Management Theory, which served as the guiding theoretical framework for this study. The theory argues that organizations improve their performance by systematically identifying, assessing, controlling, and monitoring risks before they adversely affect organizational objectives. The positive and statistically significant effects of all four risk management strategies on SACCO performance confirm the central proposition of the theory that comprehensive risk management enhances organizational resilience, operational efficiency, and financial sustainability. Consequently, the study demonstrates that integrating credit, liquidity, operational, and market risk management into the strategic and operational activities of Umurenge SACCOs is essential for improving institutional performance and achieving sustainable financial inclusion in Rwanda.

CONCLUSION AND RECOMMENDATIONS

This study concludes that risk management strategies significantly influence the performance of Umurenge SACCOs in Gisagara District. The findings demonstrate that effective implementation of credit risk management, liquidity risk management, operational risk management, and market risk management enhances institutional performance by improving loan portfolio quality, profitability, liquidity, operational efficiency, and overall financial sustainability. The regression and hypothesis testing results confirmed that these risk management strategies collectively have a statistically significant positive effect on SACCO performance, with credit risk management exerting the greatest influence. The study therefore concludes that strengthening integrated risk management systems is essential for improving the resilience, competitiveness, and long-term sustainability of Umurenge SACCOs and supporting Rwanda's financial inclusion agenda.

Based on the study findings, Umurenge SACCOs in Gisagara District should strengthen their integrated risk management systems by enhancing credit appraisal and loan monitoring mechanisms, improving liquidity contingency planning, reinforcing operational controls through continuous staff training and digital process automation, and strengthening market risk management frameworks through regular risk assessments and proactive monitoring of economic and financial market changes. Additionally, SACCO management should integrate stress testing and risk assessment outcomes into strategic planning and decision-making to improve institutional resilience, financial sustainability, and long-term performance. Policymakers and the National

Bank of Rwanda should continue supporting capacity building and regulatory oversight to promote effective risk management practices across Umurenge SACCOs.

Suggestion for Future Research

This study was limited to Umurenge SACCOs in Gisagara District and examined only four dimensions of risk management strategies: credit risk management, liquidity risk management, operational risk management, and market risk management. Future studies should extend the scope by including SACCOs from multiple districts or conducting nationwide comparative studies to enhance the generalizability of the findings. Researchers may also examine additional determinants of SACCOs performance, such as corporate governance, digital financial innovation, enterprise risk management, internal control systems, and organizational culture. Furthermore, longitudinal studies are recommended to assess the long-term effects of risk management practices on SACCOs performance

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