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THE ROLE OF COOPERATIVE FINANCIAL AND OPERATIONAL SERVICES IN PROMOTING FINANCIAL INCLUSION AMONG TEACHERS IN RURAL RWANDA: A CASE OF UMWALIMU SACCO IN NYARUGURU DISTRICT (2020-2024)

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ABSTRACT

This study examined the effect of cooperative financial and operational services on teachers' financial inclusion, using Umwalimu SACCO in Nyaruguru District as a case study for the period 2020–2024. The specific objectives were to identify the financial and operational services offered by the SACCO, assess the level of financial inclusion among teachers, and determine the relationship between SACCO services and financial inclusion. The study adopted a descriptive and correlational research design, targeting teachers who are members of Umwalimu SACCO. A sample size of 97 respondents was selected using appropriate sampling techniques. Data were collected using structured questionnaires and interview guides, and analyzed using descriptive statistics (means, standard deviations, and coefficients of variation) and inferential statistics (multiple linear regression and ANOVA) with the support of SPSS. The findings revealed that cooperative financial and operational services are highly rated, with savings products (Mean = 4.24) and service quality (Mean = 4.22) emerging as the strongest components, while loan processing efficiency recorded the lowest mean (Mean = 4.04). The level of financial inclusion among teachers was found to be high (Overall Mean = 4.16), with reliability (Mean = 4.29) and affordability (Mean = 4.18) being the most prominent dimensions. Regression results indicated a strong and statistically significant relationship between SACCO services and financial inclusion ($R = 0.812$, $R^2 = 0.659$, $p < 0.05$), implying that 65.9% of the variation in financial inclusion is explained by cooperative financial and operational services. Among the predictors, service quality ($\beta = 0.281$), savings products ($\beta = 0.238$), and loan provision ($\beta = 0.214$) had the greatest influence. The study concludes that cooperative financial and operational services play a critical role in promoting financial inclusion among teachers. It recommends that Umwalimu SACCO should strengthen service quality, improve loan processing efficiency, expand branch coverage, and enhance digital financial services to further improve access and participation. Future research should explore the role of financial literacy and digital adoption in influencing financial inclusion in rural contexts.

Keywords: *Financial inclusion, SACCO services, teachers, cooperative finance, Rwanda.*

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INTRODUCTION

Financial inclusion is widely recognized as a key driver of poverty reduction, economic empowerment, and inclusive economic growth. It enables individuals and businesses to access affordable financial services such as savings, credit, insurance, and payment systems. Despite global progress, about 1.4 billion adults remain financially excluded, particularly in rural and low-income economies where formal financial services are limited (World Bank, 2022; Reach Alliance, 2023). In Sub-Saharan Africa, financial inclusion remains constrained by inadequate banking infrastructure and limited access to affordable credit, making Savings and Credit Cooperative Organizations (SACCOs) important institutions for expanding financial access to underserved populations (African Development Bank, 2021).

In Rwanda, promoting financial inclusion is a national priority under Vision 2050 and the National Strategy for Transformation (NST1). To support this agenda, Umwalimu SACCO was established in 2006 to provide teachers with affordable savings, credit, and other financial services. Previous studies show that the SACCO has improved teachers' access to formal financial services and enhanced their socio-economic welfare, while recent digital reforms have further strengthened service delivery and accessibility (Government of Rwanda, 2021; Ntuite, 2022; Karenzi, 2024).

Nyaruguru District provides an appropriate context for examining financial inclusion because it is predominantly rural, with limited commercial banking services. For many teachers, Umwalimu SACCO serves as the primary financial institution for savings, loans, and other cooperative services. Although the SACCO has recorded significant growth in membership and financial outreach, studies report challenges related to service accessibility and operational efficiency, particularly in remote areas (NISR, 2022; RCA, 2023; Mushinzimana, 2024).

Despite the increasing role of cooperative financial institutions in Rwanda, limited empirical evidence exists on how cooperative financial and operational services promote financial inclusion among teachers in rural areas. Therefore, this study examines the role of cooperative financial and operational services in promoting financial inclusion among teachers in rural Rwanda, using Umwalimu SACCO in Nyaruguru District as a case study for the period 2020–2024. The findings are expected to contribute to cooperative finance literature and inform policies aimed at strengthening financial inclusion and rural development.

Statement of the Problem

Financial inclusion remains a major development challenge in rural areas, where access to affordable financial services and formal credit is still limited despite the expansion of cooperative financial institutions (World Bank, 2024). In Rwanda, Umwalimu SACCO was established to improve teachers' access to savings, credit, and other financial services. Although the SACCO has contributed significantly to financial inclusion, persistent challenges remain, including limited access to credit, relatively high lending rates, low digital financial adoption, inadequate branch coverage, and delays in loan processing, all of which reduce teachers' ability to fully benefit from formal financial services (RCA, 2023; Umwalimu SACCO, 2021; KT Press, 2024). These constraints often compel some teachers to rely on informal lenders, increasing their financial vulnerability.

Operational inefficiencies further constrain service delivery, particularly in rural districts such as Nyaruguru, where teachers depend largely on Umwalimu SACCO as their primary financial institution. Challenges such as limited staffing, weak digital infrastructure, delayed service delivery, and inadequate customer support continue to affect the accessibility, affordability, reliability, and timeliness of financial services (Mushinzimana, 2024; NISR, 2023). Although the Government of Rwanda has implemented reforms to strengthen SACCO operations, empirical evidence on the combined effect of cooperative financial and operational services on teachers' financial inclusion in rural areas remains limited. Therefore, this study examines the role of cooperative financial and operational services in promoting financial inclusion among teachers in rural Rwanda, using Umwalimu SACCO in Nyaruguru District during the period 2020–2024.

LITERATURE REVIEW

This section reviewed the literature relevant to the study. It briefly presented the Financial Intermediation Theory, which suggests that financial institutions promote efficient allocation of financial resources by mobilizing savings and providing credit to underserved populations (Gurley & Shaw, 1960). The section further synthesized previous studies on cooperative financial and operational services and financial inclusion.

Cooperative Financial and Operational services

Previous studies have shown that loan provision is one of the most important financial services offered by cooperative institutions in promoting financial inclusion. Affordable loans with flexible repayment terms enable teachers and other low-income earners to finance housing, education, and income-generating activities while reducing dependence on informal lenders. However, strict loan requirements, lengthy approval procedures, and collateral conditions continue to limit access for some members, particularly in rural areas (African Development Bank, 2021; Tumwine, 2021; Ntuite, 2022; Beck et al., 2022; Mushinzimana, 2024).

Researchers have further established that savings products strengthen financial inclusion by encouraging regular saving, improving financial security, and providing the capital required for cooperative lending. Studies indicate that accessible and flexible savings products enhance financial discipline, increase resilience to economic shocks, and improve access to affordable credit. Nevertheless, low financial literacy and limited awareness continue to constrain savings participation among some rural members despite the growing adoption of digital savings services (MFW4A, 2023; Tumwine, 2021; Beck et al., 2022; NISR, 2023; Mushinzimana, 2024).

Evidence also suggests that branch coverage is a key operational service influencing access to formal financial services. The establishment of branches within rural communities reduces travel costs, increases service utilization, and strengthens member participation. However, inadequate branch distribution, understaffing, and poor rural infrastructure continue to limit service accessibility and quality in remote areas, although innovations such as satellite branches and mobile service units have improved outreach in some regions (African Development Bank, 2021; Nguyen & Simkin, 2022; Tumwine, 2021; NISR, 2023; Mushinzimana, 2024).

Similarly, previous studies have demonstrated that digital financial platforms improve operational efficiency and financial accessibility by enabling members to access savings, loan, and payment services remotely. Digital banking reduces transaction costs, improves convenience, and enhances transparency in financial service delivery. However, digital adoption in rural areas remains constrained by inadequate ICT infrastructure, low digital literacy, and concerns over cybersecurity, limiting the full benefits of digital financial inclusion (KT Press, 2024; Beck et al., 2022; Nguyen & Simkin, 2022; NISR, 2023; Mushinzimana, 2024).

Studies have also identified loan processing efficiency as an important determinant of member satisfaction and financial inclusion. Efficient loan appraisal and timely disbursement improve access to credit, strengthen trust, and encourage continued participation in cooperative financial institutions. Conversely, administrative delays, inadequate staffing, and manual processing systems increase waiting time and discourage members from utilizing SACCO services. The adoption of digital loan management systems has been reported to substantially reduce processing time and improve institutional performance (African Development Bank, 2021; Nguyen & Simkin, 2022; RCA, 2023; KT Press, 2024; Harelimana, 2025).

Finally, empirical studies consistently indicate that service quality significantly influences members' satisfaction, loyalty, and continued use of cooperative financial services. Reliable, responsive, and customer-oriented service delivery enhances trust and strengthens financial inclusion, whereas poor communication, long queues, and delayed responses reduce confidence in cooperative institutions. Researchers therefore recommend continuous staff training, customer care improvement, and investment in digital service delivery to improve service quality and expand financial inclusion, particularly among rural teachers (Parasuraman et al., 1988; Zeithaml et al., 2021; African Development Bank, 2021; Mushinzimana, 2024; Harelimana, 2025).

Teachers' Financial Inclusion

Teachers' financial inclusion represents their ability to access, use, and benefit from formal financial services such as savings, credit, and other financial products provided by institutions like Umwalimu SACCO. It is a critical factor influencing teachers' financial security, welfare, and economic empowerment, particularly in rural areas where access to financial institutions may be limited by geographical distance, transaction costs, and technological barriers (Tumwine, 2021; NISR, 2023). Effective financial inclusion requires not only the availability of financial services but also their affordability, convenience, reliability, and responsiveness to teachers' needs. In Rwanda, strengthening teachers' access to SACCO services has been recognized as an important strategy for improving household financial stability and reducing dependence on informal financial providers (Mushinzimana, 2024; Beck et al., 2022).

Accessibility is a fundamental dimension of teachers' financial inclusion because it determines the ease with which teachers can obtain SACCO services. It is influenced by factors such as proximity of service points, membership requirements, availability of financial products, and access to digital platforms (MFW4A, 2023). In rural districts such as Nyaruguru, challenges related to long distances, transport costs, and limited digital literacy may reduce teachers' interaction with Umwalimu SACCO services (NISR, 2023). However, institutional outreach, collaboration with schools and local authorities, and expansion of digital financial services have improved access among teachers. Studies indicate that SACCOs with flexible membership conditions, diversified products, and wider outreach achieve greater participation and satisfaction among members (Allen et al., 2021; Tumwine, 2021). Therefore, accessibility remains essential in ensuring that cooperative financial services reach all teachers regardless of their location and socio-economic status.

Affordability, timeliness, and reliability are also important determinants of teachers' engagement with financial services. Affordable financial products, reflected in reasonable interest rates, transparent charges, and flexible repayment arrangements, encourage teachers to borrow, save, and invest in productive activities (Beck et al., 2022). Umwalimu SACCO's relatively lower loan interest rates compared with commercial banks have increased teachers' ability to access credit, although hidden costs and compulsory requirements may still affect affordability (NISR, 2022; Mushinzimana, 2024). Similarly, timely service delivery, including quick loan processing and efficient transaction management, enhances teachers' satisfaction and trust, while delays may push members toward costly informal lenders (African Development Bank, 2021). Reliability further strengthens financial inclusion by ensuring accurate records, secure savings, transparent loan conditions, and consistent service delivery. Through improved governance and digital systems, SACCOs can enhance reliability, increase member confidence, and promote long-term participation in formal financial systems (Parasuraman et al., 1988; Beck et al., 2022). Thus, this study examines accessibility, affordability, timeliness, and reliability as key dimensions influencing teachers' financial inclusion through Umwalimu SACCO in Nyaruguru District.

METHODOLOGY

Research Design

This study adopted a descriptive and correlational research design to examine the relationship between cooperative financial and operational services and financial inclusion among teachers in rural Rwanda, focusing on Umwalimu SACCO in Nyaruguru District (2020–2024). The descriptive aspect presents a comprehensive account of the financial and operational services provided by the SACCO and the extent to which teachers access them. The correlational aspect, on the other hand, determines the strength and direction of the relationship between the independent variables (loan provision, savings products, branch coverage, digital platforms, loan processing efficiency, and service quality) and the dependent variable (teachers' financial inclusion) .The study employed a mixed-methods approach, integrating both quantitative and qualitative techniques to provide a holistic understanding of the research problem.

Data Collection and Analysis

This study employed both quantitative and qualitative approaches to collect primary data. Quantitative data were obtained from 97 teachers who were members of Umwalimu SACCO in Nyaruguru District, selected using appropriate sampling techniques. A structured questionnaire was used to collect quantitative data on cooperative financial and operational services and teachers' financial inclusion. Qualitative data were collected through key informant interviews with Umwalimu SACCO staff using a semi-structured interview guide to provide deeper insights and complement the quantitative findings.

Quantitative data were analyzed using Statistical Package for the Social Sciences (SPSS). Descriptive statistics, including means, standard deviations, and coefficients of variation, were used to summarize respondents' perceptions of cooperative financial and operational services and the level of teachers' financial inclusion. Inferential statistics comprised multiple linear regression and Analysis of Variance (ANOVA) to examine the effect of cooperative financial and operational services on teachers' financial inclusion. Statistical significance was evaluated at the 95% confidence level ($p < 0.05$). Qualitative data were analyzed using thematic analysis, where responses were organized into themes and used to triangulate and enrich the quantitative findings.

To determine the extent to which cooperative financial and operational services influenced teachers' financial inclusion, the following multiple linear regression model was estimated;

$$Y=\beta_0+\beta_1X_1+\beta_2X_2+\beta_3X_3+\beta_4X_4+\beta_5X_5+\beta_6X_6+\varepsilon$$

Where:

Y = Dependent variable (Teachers’ Financial Inclusion)

X_1–X_6 = Independent variables (Loan Provision, Savings Products, Branch Coverage, Digital Platforms, Loan Processing Efficiency, and Service Quality)

$\beta0$ = Constant term (intercept)

$\beta1\ldots\beta6$ = Regression coefficients for each predictor variable

ε = Error term representing unexplained variation

This model helps determine whether improvements in SACCO services significantly predict increases in teachers’ financial inclusion in Nyaruguru District.

RESULTS

The multiple regression was conducted and The model summary provides key statistics such as the correlation coefficient (R), coefficient of determination (R^2), and adjusted R^2, which show how well the independent variables collectively explain variations in financial inclusion. These results help assess the overall fitness of the regression model in predicting the dependent variable.

Table 1: Regression Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of Estimate
1	0.812	0.659	0.642	0.421

Source: Field data, (2026)

The results in Table 1 indicated a strong positive relationship between cooperative financial and operational services and financial inclusion, with a correlation coefficient of R = 0.812. The coefficient of determination ($R^2 = 0.659$) shows that 65.9% of the variation in financial inclusion is explained by the independent variables, while the remaining 34.1% is attributed to other factors not included in the model. The adjusted R^2 of 0.642 confirms the robustness of the model. This means that improvements in SACCO services significantly enhance financial inclusion among teachers. These findings are consistent with Beck et al. (2022) and Demirgüç-Kunt et al. (2022), who found that access to quality financial services strongly predicts financial inclusion outcomes.

Table 2: ANOVA Results

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	58.214	6	9.702	54.721	0.000
Residual	30.071	90	0.334		
Total	88.285	96			

Source: Field data, (2026)

The ANOVA results indicate that the regression model is statistically significant, with F = 54.721 and p-value = 0.000 < 0.05. This means that the independent variables jointly have a significant effect on financial inclusion. Therefore, the model is appropriate for explaining the relationship between SACCO services and financial inclusion. This finding supports Allen et al. (2021), who found that financial service delivery factors significantly influence financial inclusion levels.

Table 3: Regression Coefficients

Variable	Beta (β)	Std. Error	t-value	Sig.
Constant	0.512	0.221	2.316	0.023
Loan Provision (X_1)	0.214	0.067	3.194	0.002
Savings Products (X_2)	0.238	0.072	3.306	0.001
Branch Coverage (X_3)	0.121	0.059	2.051	0.043
Digital Platforms (X_4)	0.147	0.063	2.333	0.022
Loan Processing Efficiency (X_5)	0.165	0.066	2.500	0.014
Service Quality (X_6)	0.281	0.075	3.747	0.000

(*Significance at p < 0.05)

a. Dependent Variable: Financial inclusion

Source: Field data, (2026)

The regression results indicate that all independent variables have a positive and statistically significant effect on financial inclusion. Service quality (β = 0.281, p = 0.000) has the strongest influence, implying that improved service delivery significantly enhances financial inclusion. Savings products (β = 0.238, p = 0.001) and loan provision (β = 0.214, p = 0.002) also have strong effects, indicating that financial accessibility and savings mechanisms are key drivers. Digital platforms (β = 0.147, p = 0.022) and loan processing efficiency (β = 0.165, p = 0.014) contribute moderately, while branch coverage (β = 0.121, p = 0.043) has the least but still significant effect. These findings imply that both financial and operational service components are critical in promoting financial inclusion. The results are consistent with Demirgüç-Kunt et al. (2022) and Beck et al. (2022), who found that service quality, accessibility, and financial products significantly influence financial inclusion.

The multiple linear regression model used in this study to examine the effect of cooperative financial and operational services on teachers' financial inclusion is expressed as: $Y = 0.512+0.214X1+0.238X2+0.121X3 +0.147X4+0.165X5+0.281X6+\varepsilon$. This model indicates that all independent variables have a positive contribution to financial inclusion, with service quality and savings products having the strongest effects, implying that improvements in these areas lead to significant increases in teachers' financial inclusion. The results indicate that the null hypothesis (H_0) was rejected since the p-value (0.000) is less than the significance level (0.05). This confirms that there is a statistically significant relationship between cooperative financial and operational services and teachers' financial inclusion in Nyaruguru District.

DISCUSSION

The study examined the effect of cooperative financial and operational services on teachers' financial inclusion in Umwalimu SACCO, Nyaruguru District, during 2020–2024. The findings revealed a strong positive relationship between SACCO services and teachers' financial inclusion ($R = 0.812$), with the model explaining 65.9% of the variation in financial inclusion ($R^2 = 0.659$). The significant ANOVA result ($F = 54.721$, $p < 0.001$) confirmed that cooperative financial and operational services jointly influence teachers' financial inclusion. These findings support the Financial Intermediation Theory, which explains that financial institutions enhance inclusion by mobilizing savings, providing credit, reducing transaction costs, and improving access to financial services. Therefore, Umwalimu SACCO plays an important intermediary role in connecting teachers with financial resources and promoting participation in the formal financial system.

Regarding the first objective, the study established that Umwalimu SACCO provides important financial and operational services, including loan provision, savings products, branch accessibility, digital platforms, efficient loan processing, and quality service delivery. These services significantly contributed to improving teachers' access to formal financial services. The findings agree with Singh and Patel (2021), who found that cooperative loans and accessibility improved rural teachers' financial participation in India, and Kwarteng and Osei (2022), who reported that affordability and reliability enhanced cooperative usage among teachers in Ghana. Similarly, Ntuite (2022) confirmed that affordable cooperative loans improved teachers' financial access in Rwanda. This suggests that teacher-based SACCOs are effective mechanisms for reducing financial barriers and responding to members' financial needs.

Concerning the second objective, the findings indicated that teachers served by Umwalimu SACCO experienced improved financial inclusion through increased access to savings, credit, and other formal financial services. The significant contribution of savings products ($\beta = 0.238$, $p = 0.001$) and loan provision ($\beta = 0.214$, $p = 0.002$) demonstrates that SACCO membership strengthens teachers' ability to save, borrow, and manage financial resources. These findings are consistent with Mushinzimana (2024), who found that savings mobilization significantly predicted teachers' financial inclusion in Rwanda, and NISR (2023), which identified cooperative institutions as key drivers of rural financial inclusion. The findings therefore confirm that SACCO services contribute substantially to improving teachers' financial participation.

Regarding the third objective, the study found a significant relationship between Umwalimu SACCO financial and operational services and teachers' financial inclusion. Financial services, particularly loans and savings, improved access to financial opportunities, supporting the Financial Intermediation Theory that emphasizes credit allocation and savings mobilization as core functions of financial institutions. This finding is consistent with Tumwine (2021), who found that cooperative loans significantly enhanced teachers' financial access in Uganda, and Souza and Lima (2023), who reported that credit cooperatives increased teachers' formal financial participation in Brazil. Thus, effective financial products remain essential in promoting financial inclusion among teachers.

The study further revealed that operational services significantly influenced financial inclusion, with service quality having the strongest effect ($\beta = 0.281$, $p < 0.001$), followed by loan processing efficiency ($\beta = 0.165$, $p = 0.014$), digital platforms ($\beta = 0.147$, $p = 0.022$), and branch coverage ($\beta = 0.121$, $p = 0.043$). These findings indicate that efficient, reliable, and accessible service delivery determines the extent to which teachers benefit from SACCO services. The results agree with Dlamini and Jacobs (2021), who found that service reliability improved cooperative financial usage, and Harelimana (2025), who established that timeliness and reliability enhanced financial access among teacher-based SACCO members in Rwanda. They also support Mutua and Mwangi (2023), who emphasized the role of digital platforms in expanding financial inclusion.

CONCLUSION AND RECOMMENDATIONS

This study concludes that Umwalimu SACCO provides a comprehensive range of financial and operational services that contribute significantly to enhancing teachers' financial inclusion in Nyaruguru District. The services, including loan provision, savings products, branch-based services, digital platforms, efficient loan processing, and customer support, have created opportunities for teachers to access and utilize formal financial services. These services have strengthened teachers' participation in the financial system by improving access to credit, encouraging savings behavior, and supporting better financial management.

The study further concludes that the level of financial inclusion among teachers served by Umwalimu SACCO during the period 2020–2024 was relatively high. Teachers demonstrated improved access to, usage of, and engagement with formal financial services through SACCO membership. This reflects the important role played by teacher-based cooperative institutions in reducing financial barriers and promoting financial participation. However, challenges related to service accessibility, geographical coverage, and timely delivery of some services remain areas requiring continued improvement, particularly for teachers located in remote areas.

The findings also confirm that there is a significant positive relationship between Umwalimu SACCO's financial and operational services and teachers' financial inclusion. The regression results demonstrated that improvements in SACCO services significantly enhance teachers' ability to access and benefit from financial services. While all service dimensions contributed positively, service quality, savings products, loan provision, and operational efficiency emerged as particularly important factors influencing financial inclusion outcomes. This confirms that effective financial intermediation through SACCOs depends not only on the availability of financial products but also on the quality, reliability, and efficiency of service delivery.

Overall, the study concludes that cooperative financial and operational services are essential drivers of teachers' financial inclusion in Nyaruguru District. Consistent with the Financial Intermediation Theory, Umwalimu SACCO facilitates financial inclusion by mobilizing savings, providing affordable credit, reducing access barriers, and improving the delivery of financial services. Therefore, strengthening service quality, expanding digital financial solutions, improving operational efficiency, and increasing accessibility remain critical strategies for ensuring sustainable and inclusive financial service delivery for teachers in Rwanda

Based on the study findings, the following recommendations are proposed to enhance teachers' financial inclusion through Umwalimu SACCO services. Umwalimu SACCO management should prioritize continuous improvement of service quality through staff capacity building, customer care systems, and responsive service delivery mechanisms, as service quality was identified as the strongest predictor of financial inclusion. The SACCO should also improve loan processing efficiency by simplifying procedures, adopting automated systems, and reducing delays in loan approval and disbursement.

Furthermore, Umwalimu SACCO should strengthen digital financial services by improving digital platforms, providing user training, and increasing awareness among teachers to promote wider adoption. Expanding service accessibility through mobile banking solutions, outreach programs, and improved branch coverage would also help address geographical barriers, particularly for teachers in remote areas.

Government institutions and policymakers should support SACCO development by strengthening regulatory frameworks, improving ICT and transport infrastructure, and creating an enabling environment that allows cooperative financial institutions to maintain affordable and sustainable financial services. Such interventions would enhance equitable access to financial services, especially in rural communities.

Teachers, as SACCO members, should actively participate in savings programs, utilize available digital financial services, and engage proactively with SACCO services to improve their financial security and maximize the benefits of cooperative membership. Increased member participation will contribute to stronger SACCO performance and improved financial inclusion outcomes.

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