http://journals.uonbi.ac.ke/index.php/adfj
ISSN 2522-3186

ADFJ ISSN 2522 – 3186.

African Development Finance Journal

VOLUME 8 (IX)

Service Quality Management Practices and Financial Sustainability of SACCOS in Magu and Kwimba Districts, Tanzania: The Mediating Effect of Service Innovation

Alex J. Ngowi

Kitala C. Malamsha

Lucas D. Mataba

Date Received: October 11, 2025

Date Published: November 20, 2025

African Development Finance Journal http://journals.uonbi.ac.ke/index.php/adfj
November Vol 8 No.9, 2025 PP 239-261 ISSN 2522-3186

Service Quality Management Practices and Financial Sustainability of SACCOS in Magu and Kwimba Districts, Tanzania: The Mediating Effect of Service Innovation

By: Alex J. Ngowi [1], Kitala C. Malamsha[2] and Lucas D. Mataba [3]

Abstract

The study examined the structural relationships between service quality management practices (SQMP) and financial sustainability (FS) with mediating effect of Service innovation practices (SIP). A cross-sectional research design was employed with a Quantitative approach. Data was collected from 351 SACCOS members in Mangu and Kwimba Districts using a structured questionnaire. Data was analyzed using Structural Equation Modelling (SEM) with bootstrapping method, revealing that SQMP significantly and positively ($\beta = 1.109$; $p < 0.001$; $\beta = 0.650$, $p < 0.05$) influence both the SIP and FS. The SIP strongly ($\beta = 0.860$; $p < 0.001$) mediate the relationship between SQMP and FS. The study concludes that, while SQMP directly enhances the FS, its effectiveness is reinforced when coupled with SIP. The study recommends SACCOS leaders, management, unions and supporting stakeholders to institutionalize SQMP integrated with SIP to ensure FS of SACCOS in the study area.

Keywords: *Service Quality Management, Service Innovation, Financial Sustainability, SACCOS.*

1. Introduction

The global credit union movement has long emphasized strengthening the financial sustainability (FS) of Savings and Credit Co-operative Societies (SACCOS) with particular attention in developing countries where they play major roles in financial inclusion and poverty reduction (Feng *et al.*, 2021). According to Kesanta, & Makona, (2025); Mpora *et al.*, (2025); Ntoiti, & Jagongo, (2021), the FS of several SACCOS is affected by high levels of non-performing loans and weak credit risk management which reduces income levels and capital. Mutai, & Muthimi, (2025); Mittal *et al.*, (2024); Gazu, (2024); Mbegu *et al.*, (2023), indicate that, the sustainable performance of SACCOS has been threatened by weak governance and limited managerial practices which is manifested in poor internal controls, inactive member participation, and poor leadership. Wanjiru *et al.*, (2024), assert that the FS has been affected by inadequate capitalization and limited access to stable sources of funds which constrains the ability of the SACCOS to extend financial services to their members and absorbing financial shocks. Moreover, (Lana *et al.*, 2025;

[1]*Department of Co-operative Development and Management; Moshi Co-operative University (MoCU) P.O.Box 474 Moshi Tanzania, E-Mail: alexngowi28@gmail.com*
[2] *Department of Economics and Statistics, Moshi Co-operative University (MoCU) P.O.Box 474 Moshi Tanzania*
[3] *Department of Banking and Microfinance, Moshi Co-operative University (MoCU) P.O.Box 474 Moshi Tanzania*

Anakpo *et al.,* 2025; Jackob, 2023) indicate that the FS of the SACCOS are affected by weak monitoring mechanisms and macroeconomic instabilities such as inflation and stiff competitions.

To strengthen the FS, there is need for a deliberate high quality strategic intervention and innovations focusing at improving delivery service, operational efficiency, and financial performance (Lana *et al.,* 2025; YuSheng & Ibrahim, 2020). Within financial service industry it has evidenced that, integrating service quality management practices (SQMP) and service quality innovations (SQI) practices has increasingly emerged as a strategic approach towards enhancing FS and competitiveness (Anakpo *et al.,* 2024; Maina *et al.,* 2020). This integration not only drives high quality services and financial performance but also fosters clients' satisfactions, loyalty and organizational resilience (Asiedu, *et al.,* 2024; Kusuma *et al.,* 2022). Moreover, financial institutions that integrate SQMP (such as process optimization, product and service standardization, employee engagement, and continuous service and product improvement) and SQI have consistently achieved high operational efficiency, high rate of member retentions, and quick adaptability to the evolving market conditions which are key attribute to the financial sustainability of the organizations (Ibrahim, & Yusheng, 2020; Otii, & Omondi, 2020; Nuruzzaman *et al.,* 2019).

Moreover, SQI plays a key mediating role in the relationship between SQMP and sustainability, enabling organizations to translate SQMP into new or improved products, operational processes, and marketing strategies that enhance customer satisfaction and organizational resilience (Abdulhakim, 2020). Also, integrating SQMP and SQI strengthens overall institutional performance (Hudnurkar, *et al.,* 2023; Albloushi, *et al.,* 2023; Tonjang, *et al.,* 2022). Furthermore, implementing both SQMP and SQI concurrently result into higher financial performance, organizational innovations, strong operational flexibility, employee relations, and improved responsiveness to customer needs compared to the organization relying on SQMP alone (Koomson, 2024; Ahinful, *et al.,* 2024; Maina, *et al.,* 2020). While integrating SQMP with SQI is key to sustainability as failure to do so it directly affects innovation outcomes, competitiveness and sustainability, there remains limited evidence on the nature and strength of their relationships in SACCOS particularly in Tanzania. Hence, this study examined the structural relationships between SQMP and FS with mediating effect of SQI. Achieving this objective contributes to a

deeper understating of how SQI can be used as too towards strengthening SQMP and FS for sustained relevance and sustainability of SACCOS.

1.1 Research Problem

Despite the growing body of empirical evidence suggesting that, the integration of SQMP and SQI is a key determinant of FS, there remains limited evidence on the nature and strength of their relationships in SACCOS particularly in developing countries including Tanzania. Existing studies (Magashi, 2023; Jacob, 2023; Wekesa, 2023; World Council of Credit Union, 2023) have largely concentrated on conventional factors such as risk management, technological adoption, governance, managerial capacity, and capital adequacy. While these factors are important, they gave limited attention on the critical question of how SQMP and SQI interact to influence the FS of the SACCOS. This knowledge gap persists despite ongoing efforts by policy makers, regulators, and SACCOS stakeholders of strengthening the FS of SACCOS (Mbegu, *et al.*,2024; Sife, & Mhando, 2022; Towo, 2020).

The continued FS vulnerability of many SACCOS continues to negatively affect member confidence and trust, retention, outreach, liquidity, and operational efficiencies. This suggests that existing interventions may not sufficiently address the service quality and financial sustainability challenges. Therefore, there is a need for empirical evidence that examine the mediating effect of SQI in the relationship between SQMP and FS to come up with a context fact that can inform evidence-based policies, strengthen managerial practices, and enhance the long-term sustainability of SACCOS. Achieving this objective is essential as it provides context-specific perspectives that can inform evidence-based policy reforms, strengthen managerial and operational practices, and ultimately enhance the long-term sustainability and relevance of SACCOS.

To achieve the study objective, the study sought to answer the following research questions: Do SQMP influence FS and SQI in SACCOS? Does SQI mediate the relationship between SQMP and FS? Additionally, the following research hypotheses were tested: H_1: SQMP has significant influence on the FS. H_2: SQMP has significant influence on SQI; H_3: SQI has significant effect on FS; H4: SQI mediates the relationship between SQMP and FS.

1.2 Research Objective

The study objective was to examine the structural relationships between service quality management practices and financial sustainability with mediating effect of service innovation practices.

2.0 Literature Review

2.1 Theoretical Framework

This study was grounded in Deming's Total Quality Management (TQMP) philosophy and the Resource-Based View (RBV), providing complementary views on how internal management systems and innovation capabilities contribute to the FS in SACCOS. Deming's philosophy pinpoints the importance of continuous enhancement, active involvement of employees, and a systematic approach to problem-solving as essential paths to achieving sustainable performance. The study objective was aligned with this perspective indicating that when SACCOS implement SQMP such as engaging members in decision-making, ensuring leadership accountability, and adopting participatory quality processes promote innovative thinking, enhance operational efficiency, and cultivate a resilient organizational culture. This quality-focused culture fosters an environment conducive to SQI, leading to the transformation of internal improvements into enhanced member experiences and financial outcomes.

Alongside, the RBV emphasizes that the innovation capabilities rooted in individuals' skills, organizational culture, and process knowledge represent valuable, rare, and inimitable resources that uphold competitive advantage. This indicates that SQMP by itself may not ensure FS unless there are innovative capabilities that convert quality enhancements into distinct services and value for members. The relationship between SQMP and SQI exemplifies the idea that continuing performance relies on an organization's capacity to adapt and combine its internal resources in reaction to evolving circumstances. Within the realm of SACCOS, characterized by democratic ownership and active member involvement, the integration of SQMP with SQI offers a strategic approach to attain FS while upholding the core Co-operative values.

2.2 Empirical Review

Empirical studies have consistently demonstrated that numerous SACCOS, particularly in developing countries, are FS vulnerable due to a variety of causes. For example, Feng *et al.*, (2021) reveal that, despite their global recognition as an engine of inclusive finance, poverty alleviation, and socio-economic empowerment, many SACCOS struggle to maintain their FS. Moreover, (Kesanta & Makona, 2025; Mpora *et al.*, 2025; Ntoiti & Jagongo, 2021) reveals that FS concerns

are driven by high levels of non-performing loans, poor credit risk management practices, and external shocks. According to studies (Gazu, 2024; Mbegu *et al.,* 2023), governance weaknesses impair FS, while (Mutai & Muthimi, 2025; Mittal *et al.,* 2024) indicate that limited managerial capacity, poor internal control mechanisms, inactive member participation, and ineffective leadership all have an impact on FS. Furthermore, inadequate capitalization and unreliable sources of funding have been cited as a constraint to FS within SACCOS (Wanjiru *et al.,* 2024). In addition, external issues such as macroeconomic instability such as high inflation rates and heavy competition from other financial providers affect the FS (Lana *et al.,* 2025; Anakpo *et al.,* 2025; Jacob, 2023). Based on the empirical studies reviewed, the FS issues confronting the SACCOS are multifaceted, chronic, and systemic, necessitating more comprehensive and innovative measures that go beyond typical risk-based treatments.

Numerous empirical studies indicate that in the financial industry, enhanced SQMP are an important technique for increasing institutional financial performance and sustainability. Studies (Ibrahim & Yusheng, 2020; Otii & Omondi, 2020; Nuruzzaman *et al.,* 2019), revealed that SQMP which includes process optimization, service standardization, employee training, and continuous improvement, has a positive impact on operational efficiency, customer retention, and institutional resilience. Moreover, successful SQMP increases member satisfaction and loyalty, which strengthens long-term sustainability (Asiedu *et al.,* 2024; Kusuma *et al.,* 2022). According to the empirical studies examined, most of the reviewed studies have concentrated on overall sustainability, with little attention paid to financial sustainability, especially in SACCOS.

While empirical studies have examined the relationship between SQMP and FS, most of them have given little attention to SQI. However, in the financial sector, service innovation has emerged as a strategic necessity for increased competitiveness and sustainability. In the Co-operative sector, empirical evidence suggests that SQI allows Co-operatives to introduce or improve products, digital platforms, operational processes, and member interaction mechanisms, resulting in increased value creation and performance (Lana *et al.,* 2025; YuSheng & Ibrahim, 2020). Moreover, (Anakpo *et al.,* 2024; Maina *et al.,* 2020) confirm that innovative methods promote Co-operatives' ability to adapt to changing market conditions, improve service efficiency, and effectively respond to members' dynamic requirements. Furthermore, (Koomson, 2024; Ahinful

et al., 2024) indicate that institutions that integrate SQI have reported higher levels of financial performance, greater operational flexibility, and better customer response than those that rely entirely on traditional procedures. These findings suggest that SQI is not simply a performance booster, but also a strategic lever for sustainable performance in increasingly competitive financial markets.

Furthermore, empirical evidence indicates that synergetic linkages between SQMP and SQI result in high organizational performance outcomes by transferring service quality improvement into new or enhanced products, processes, and marketing channels (Abdulhakim, 2020). Similarly, studies (Hudnurkar *et al.,* 2023; Albloushi *et al.,* 2023; Tonjang *et al.,* 2022) indicated that implementing SQMP and SQI concurrently improves overall institutional performance and organizational adaptability. Moreover, it has been demonstrated that organizations that combine SQMP with SQI results into greater financial performance, stronger organizational innovations, and higher customer satisfaction than those that employ SQMP alone (Maina *et al.,* 2020). The reviewed empirical evidence indicates that SQI is an important transmission mechanism by which SQMP influence FS.

Despite the substantial empirical body of knowledge on the relationship between SQMP, FS, and SQI, there is limited empirical literature focusing on SACCOS, notably in Tanzania. Most of them linked to empirical research focus on traditional factors of institutional performance and sustainability, including governance, credit risk, information technology, and capitalization (Magashi, 2023; Jacob, 2023; Wekesa, 2023; WOCCU, 2023). As a result, the mediating role of SQI within the SQMP-FS nexus has received limited attention.

2.2 Conceptual Framework

The conceptual framework (Figure 1) illustrates the relationship between SQMP, SQI, and the FS of SACCOS. On the left side, SQMP (independent variable) is conceptualized through five key practices: process/product standardization, employee engagement, continuous improvement, member/customer focus, and leadership commitment to quality. These practices are hypothesized to directly influence FS, measured by profitability, liquidity, and capital adequacy.

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ISSN 2522-3186

In addition, the framework highlights the mediating role of SQI, shown at the bottom. The SQI is assumed to be driven by SQMP, which in turn enhances FS. This suggests that while SQMP can directly improve FS, their effect is strengthened when they stimulate innovative services such as product and process innovation (new savings or loan products, new/improved product/service processes, and Organization and marketing innovation (delivery channels, innovative member engagement strategies) as perceived by the members. The dotted arrow (from SQI to FS) indicates that SQI may also independently contribute and serve as a mediator to the FS.

This study defined SQMP as SACCOS' strategic and systematic organizational practices aimed at improving service delivery, organizational processes, and member satisfaction through continuous improvement, employee engagement, process standardization, and effective governance (Menza, & Rugami, 2021). The FS was defined as SACCOS' ability to maintain and expand financial resources to satisfy operational expenditures, member demands, and long-term sustainability (Anakpo, *et al.*, 2024). SQI was defined as how members perceive the SACCOS ability to introduce new financial products, restructure operational processes, and implement innovative marketing strategies to improve member needs and satisfactions (Musah, *et al.*, 2023).

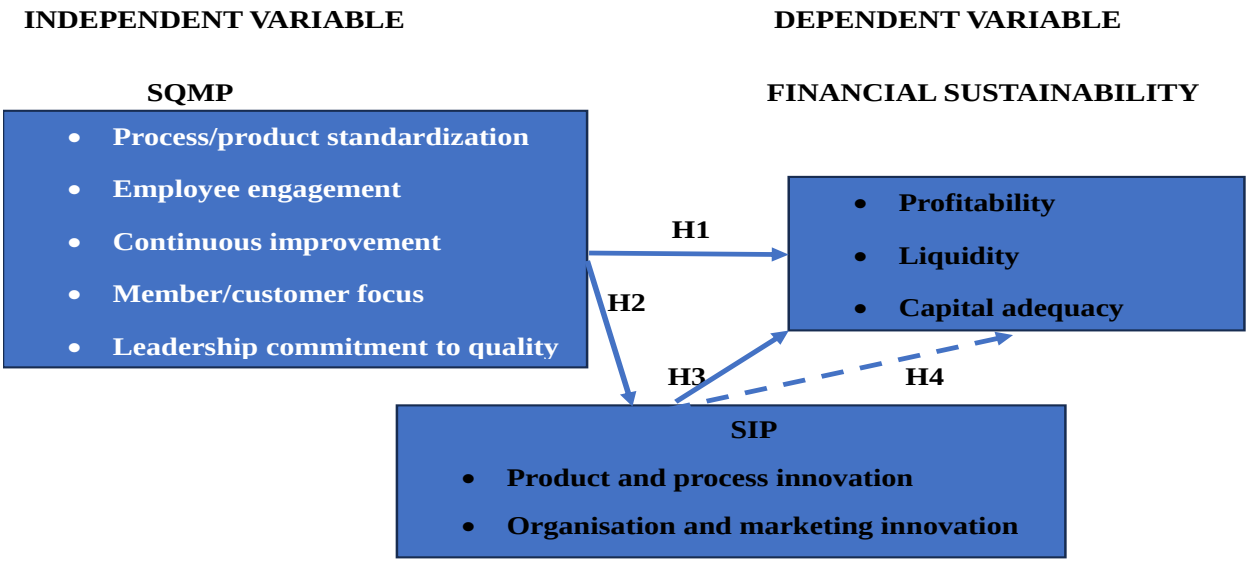

Figure 1: Conceptual Framework

3.0 Methodology

This study employed a cross-sectional research design to examine the relationship between SQMP, SQI, and FS in SACCOS from the members' perspectives. The cross-sectional design was appropriate as it allowed data collection at a single point in time, capturing members' perceptions and experiences while reducing the resource and time demands of longitudinal studies. This design also facilitated the integration of both quantitative and qualitative methods, enhancing the validity and robustness of the findings through methodological triangulation. The study population comprised active members of SACCOS in Magu and Kwimba districts, totaling 1 181 registered members during the period of data collection. Using a random sampling technique from membership registers, 351 respondents participated out of 384 expected respondents who were determined by Yamane Formula. Respondents were proportionally drawn from the six SACCOS in Magu and seven in Kwimba, ensuring representation across gender, age groups, and income levels.

Magu and Kwimba districts were purposively selected due to their high density of operational SACCOS during the period of data collection providing an ideal context to to achieve the study objectives. Moreover, the socioeconomic diversity and predominant engagement in agriculture, fishing, and small-scale trading in these districts create varied member needs and service demands, allowing for robust analysis of SQMP and their effect on FS along with the mediating effect of SQI. Data were collected using structured questionnaires with closed-ended items, complemented by Focus Group Discussions (FGDs) to explore members' perspectives on SQMP, FS and SQI. The questionnaire was pre-tested to enhance clarity and reliability, yielding Cronbach's alpha coefficients between 0.779 and 0.819, indicating strong internal consistency.

A five-point Likert scale (1= strongly disagree to 5 = strongly agree) was used to study constructs extracted from literature (SQMP, FS and SQI). The SQMP constructs were process/product standardization, leadership commitment to quality, employee engagement, member/customer focus and continuous improvement initiatives. The FS was measured through SACCOS ability to generate sufficient income (profitability), maintain capital adequacy, and liquidity. The SQI was measured though ability to initiate process and product innovations (introducing new products, new delivery channels and improved product/service processes), and ability to initiate Marketing

and Organizational Innovations (implement engagement strategies, product/service promotion and improved operations strategies).

Data analysis process and methods used were Exploratory Factor Analysis (EFA) to determine factor structures related to the study constructs. Then, confirmatory factor analysis (CFA) was performed to test how the measurement models agreed with the theoretical and empirical data. Also, structural equation modelling (SEM) was applied to analyses the structural relationship between the study constructs. SPSS 23.0 was used for EFA, while AMOS 23.0 was employed for CFA and SEM analysis. Data structure was done as illustrated in Figure 2.

Main Construct	Sub-Factors	Measurement Items (Indicators)
Total Quality Management (TQM)	**Process/Product Standardization**	- SACCOS services follow established procedures and quality standards. - Documentation and recordkeeping are consistent across departments. - Regular audits are conducted to ensure conformity with service standards. - Members receive standardized service outputs regardless of branch or staff.
	Employee Engagement	- Staff are involved in decision-making related to quality improvement. - Employees receive continuous training on quality management. - Staff are motivated to provide high-quality member services. - There is teamwork and open communication among employees.
	Continuous Improvement	- SACCOS regularly reviews and updates its processes for efficiency. - Feedback from members is used to enhance service delivery. - Innovation and creativity are encouraged among staff. - Benchmarking is done to improve operational practices.
	Member/Customer Focus	- SACCOS identifies and meets members' evolving needs. - Member satisfaction is regularly monitored and evaluated. - Complaints and suggestions are promptly addressed. - Services are customized to enhance member value.
	Leadership Commitment to Quality	- Top management prioritizes quality objectives in planning and budgeting. - Leaders communicate the importance of quality throughout the organization. - There is visible support from management for quality improvement initiatives. - Leadership fosters a culture of accountability and excellence.
Service Innovation (SI)	**Process and Product Innovations**	- Introduction of new savings and loan products tailored to members' needs. - Adoption of digital or mobile platforms for service delivery. - Simplification of lending and repayment procedures. - Use of technology to enhance efficiency and reduce operational costs.
	Organizational and Marketing Innovations	- Restructuring organizational systems to enhance flexibility and responsiveness. - New marketing strategies to attract and retain members. - Enhanced branding and communication of services. - Collaboration with other institutions to expand service offerings.
Financial Sustainability (FS)	**Profitability**	- SACCOS consistently generates operational surpluses. - Return on assets and equity has been improving over time. - Income exceeds operating and administrative costs. - Diversified income sources strengthen long-term growth.
	Liquidity	- SACCOS maintains adequate cash flow to meet members' withdrawals and loan demands. - Liquidity ratios are within recommended cooperative standards. - There is timely access to short-term financing when needed. - Financial planning ensures balance between assets and liabilities.
	Capital Adequacy	- SACCOS maintains adequate capital to cover risks and support growth. - Retained earnings and reserves are progressively increased. - Compliance with minimum capital adequacy requirements is ensured. - Member shares and deposits contribute to a strong capital base.

Figure 2: Data structure

4.0 Findings and Discussions

4.1 Socio-Demographic Characteristics

The study findings (Table 1) revealed that the average age of SACCOS members in the study area is 42.84 years, ranging from 21 to 88. The study also found that SACCOS members have attended formal education for 4–16 years, indicating variable educational attainment. However, some members have not completed their seven-year basic education, while others have completed secondary or higher school, including college. The study findings on income indicate that SACCOS members earn an average of 330 341 TZS every month, ranging from 150 000 to 1 500 000. This average is well below the Tanzanian government's minimum wage of 370 000 TZS, showing financial hardship for members. The study findings also show that participants have been members of SACCOS for 3 to 19 years, averaging 11.2 years. This shows that many members had SACCOS experience, which strengthens the study perspectives on SQMP, SQI and FS.

Table 1: Socio-demographic Characteristics (n = 351)

Characteristics	Min	Max	Range	Median	Mean	Mode	Std Dev	Var
Age (years)	21	88	67	47	42.84	44	13.12	172.7
Education level (Years)	4	16	12	7	5.2	7	2.88	8.32
Monthly income (000tsh)	150	1 500	1 350	500	330.341	480	101 280.9	318.25
Membership duration (Years)	3	19	16	10.7	11.2	9	4.65	21.7

4.2 An Exploratory Factor Analysis

The collected data underwent testing for various factors, including non-response bias and common method bias. Regarding Harmon's one-factor test, it was revealed that the one-factor solution of the study explained less than 50% (38.8%) of the total variance. This indicates that the study is free from issues related to common method bias. Moreover, the analysis revealed that there was no indications of non-response bias for the collected data. The expected study responses were collected during the projected study timeframe. Following this, EFA was performed to identify the factor structure linked to the data collected concerning SQMP, SQI and FS, including their respective subconstructs. A ten-factor solution, which accounts for approximately 68% of the total variance, was obtained from the 48 questionnaire items. Item's factor loading lower than 0.40,

along with an absolute variation among its cross loading below 20%, implies poor and unclean loading. Thus, six items were excluded from the analysis due to their load being below 0.40.

4.3 Measurement Model

The study teste reliability, convergent validity and discriminant validity aimed at confirming construct reliability and validity. A Crobanch Alpha was used to measure reliability or internal consistency whereas the obtained value of all constructs exceeded the threshold value of 0.7 implying they are statistically reliable. Regarding convergent validity, it was tested using composite reliability (CR) and average variance extracts (AVE), whereas the study result (Table 2) revealed that PPS, Pf, Lq and CA were below the CR and AVE threshold of above 0.7 and 0.5 respectively while others were above the threshold. Despite that, these constructs were accepted based on Fornell and Larcker (Afthanorhan, *et al.*, 2021) suggestion that when the AVE value is below 0.50 and the CR is above 0.6, the convergent validity can be regarded as satisfactory.

Table 2: Construct Reliability and Convergent Validity

First Order Construct	Second order construct	Item	Factor loading	CR	AVE	Crobanch's Alpha
Process and Product Standardisation (PPS)	Service quality Management practices (SQMP)	PPS1	0.548	0.731	0.410	0.710
		PPS2	0.623			
		PPS3	0.588			
		PPS4	0.514			
Employee Engagement (EE)		EE1	0.752	0.803	0.540	0.785
		EE2	0.508			
		EE3	0.917			
Continuous Improvement (CI)		EE4	0.681			
		CI1	0.818	0.782	0.542	0.780
		CI2	0.663			
		CI3	0.510			
Member/Customer Focus (MCF)		CI4	0.714			
		MCF1	0.685	0.805	0.595	0.788
		MCF2	0.813			
		MCF3	0.751			
		MCF4	0.727			
Leadership Commitment to Quality (LCQ)		LCQ1	0.701	0.882	0.634	0.880
		LCQ2	0.815			
		LCQ3	0.836			
		LCQ4	0.818			

Profitability (Pf)	Financial Sustainability (FS)	Pf1	0.911	0.786	0.479	0.806
		Pf2	0.878			
		Pf3	0.445			
		Pf4	0.545			
Liquidity (Lq)		Lq1	0.629	0.742	0.462	0.741
		Lq2	0.593			
		Lq3	0.623			
		Lq4	0.577			
Capital Adequacy (CA)		CA1	0.978	0.786	0.479	0.806
		CA2	0.974			
		CA3	0.489			
		CA4	0.419			
Process and Product Innovations (PPI)	Service Innovation Practices (SQI)	PPI1	0.780	0.906	0.707	0.800
		PPI2	0.816			
		PPI3	0.764			
Organizational and Marketing Innovations (OMI)		PPI4	0.719			
		OMI1	0.529	0.856	0.600	0.850
		OMI2	0.704			
		OMI3	0.762			
		OMI4	0.614			

Discriminant validity was tested following Fornell and Locker (1981) criteria that the square root of AVE should be greater than the squared correlation between dimensions. The study results (Table 2) indicate that the square root of the AVE for each construct is higher than the squared inter-construct correlations supporting discriminant validity. The cross-loadings was revealed that, each factor loading was higher than their cross-loadings for other constructs, proving discriminant validity. The study constructs (SQMP, FS and SQI) were considered as the second order constructs of which the hypothesized second-order structures should explain first-order constructs while being unique. The squared multiple correlations ($R^{2)}$, showed that all first-order constructs range from 0.6 to 1, implying that they explained their second-order constructs. Also, each construct was unique, affirming that SQMP adequately explains first-order structures.

Table 3: Discriminant Validity

Construct	PPS	EE	CI	MCF	LCQ	Pf	Lq	CA	PPI	OMI
PPS	0.640									
EE	0.550	0.735								
CI	0.520	0.580	0.736							
MCF	0.510	0.600	0.610	0.771						
LCQ	0.505	0.615	0.625	0.645	0.796					
Pf	0.430	0.450	0.460	0.475	0.500	0.692				
Lq	0.420	0.460	0.470	0.480	0.505	0.620	0.680			
CA	0.425	0.455	0.465	0.485	0.510	0.625	0.615	0.692		
PPI	0.500	0.520	0.525	0.535	0.540	0.480	0.485	0.490	0.841	
OMI	0.490	0.510	0.515	0.525	0.530	0.470	0.475	0.480	0.615	0.775

4.4 Structural Model and Hypothesis Testing

The structural model and hypotheses were tested using AMOS software, (23). Goodness-of-fit indices were employed to assess the fitness of the model with empirical data. The study findings indicate that the actual values of all fit indices exceeded the acceptable thresholds (Table 4).

Table 4: Good-ness Fit indices

Model fit Index	Threshold	Actual value	Interpretation
Normed chi-squared test(X^2/df)	≤5	2.306; p= 0.000	Acceptable
Goodness-of-fit index (GFI)	Acceptable value near to 1	0.916	Acceptable
Comparative Fit-index (CF)	≥ 0.7	0.901	Acceptable
Root means square error of approximation (RMSEA)	≤ 0.08	0.616	Acceptable
Tucker–Lewis index (TLI)	Near to1isacceptable	0.986	Acceptable
Incremental fit index (IFI)	Acceptable value near to1	0.983	Acceptable

The bootstrapping method was employed in the path analysis process. The results presented in Table 5 demonstrate the testing of the hypothesis, while study results in Figure 3 depicts the path analysis of the structural model.

Table 5: Hypothesis Testing

Hypothesis	Construct Relationships	β Estimate	SE	p-value	Inference
H1	SQMP→ FS	0.571	0.032	0.001	Accepted
H2	SQMP → SI	0.620	0.042	0.004	Accepted
H3	SI →FS	0.327	0.030	0.005	Accepted
H4	SQMP→ SI→ FS	0.354	-	0.022	Accepted

The study findings (Table 5) revealed a significantly positive direct relationship between SQMP and FS ($\beta = 0.571$; $p < 0.05$), which support H_1. On the other hand, the study findings from SEM revealed significant positive influence of SQMP on FS ($\beta = 0.650$, $p < 0.05$) implying that improving SQMP practices leads to improved financial outcomes. Regarding the FS dimensions, the study findings (Figure 3) indicate that liquidity ($\beta = 0.700$; $p < 0.05$) and capital adequacy ($\beta = 0.670$; $p < 0.05$) were the most significant indicators related with the FS of the SACCOS. The study findings align with (Osazevbaru, & Oyibo, 2023; Abdullahi, & Abdullah, 2021) who revealed a significant correlation between SQMP and the financial sustainability in microfinance institutions. The study findings imply that the direct relationships between SQMP practices like continuous improvement, process standardization, and member focus and enhanced financial performance of the SACCOS, contribute to the long-term financial resilience. Additionally, the study findings imply that the SACCOS model, while socially orientated, necessitates rigorous compliance with SQMP principles to maintain competitiveness in the financial sector. Moreover, study findings imply that integrating SQMP into the SACCOS organizational culture is essential for sustained liquidity and capital adequacy.

The study findings (Figure 3) also revealed that, profitability aspect of the FS of SACCOS was not significant ($\beta = 0.810$; $p > 0.05$). The study findings indicate that, in contrast to capital adequacy and liquidity that assures members access to financial services conveniently and reliably, profitability found not to have directly affected by SQMP practices within the SACCOS sector. The prevailing situation stems from the unique co-operative orientation of SACCOS, which prioritize members' welfare (social goals), reliable and accessibility of financial services, and long-term survival over profit maximization motives.

The study finding also revealed that the influence of SQMP dimensions on the FS of SACCOS is not equal across the board. It was revealed that (Figure, 3), leadership commitment to quality ($\beta = 0.760$; $p < 0.05$), member/customer engagement ($\beta = 0.870$; $p < 0.05$), process and product standardization ($\beta = 0.701$; $p < 0.05$), and continuous improvement ($\beta = 0.991$; $p < 0.05$) as the most significant determinants while employee engagement was found not be significant of the FS in the study area. The study findings imply that when leadership emphasizes quality, fostering a culture of standardization and continuous improvement, and actively focus on members' needs, SACCOS are more likely to attain financial resilience. The study findings contrast previous studies Abdulhakim, (2020) indicate that employee engagement is a crucial factor influencing sustainability performance. The contradicting findings highlight the unique nature of SACCOS in terms of their governance, operations and ownership frameworks, where the decision making power and strategic impact frequently reside more with members and leaders than with employees. However, it is alarming that overlooking employee engagement could lead to long-term challenges by diminishing innovation capacity, lowering internal efficiency, and impairing long term institutional adaptability.

The study findings (Table 5) revealed a significant positive relationship between SQMP and SQI ($\beta = 0.620$; $p < 0.05$), thereby supporting H2. Additionally, the study findings (Table 5) revealed that SI has a significant and positive effect on FS of the SACCOS in the study area ($\beta = 0.327$; $p < 0.005$), which supported H3. Moreover, the study results (Figure 3) indicate a strong direct influence of SQMP on SQI ($\beta = 1.109$; $p < 0.001$) while SQI indicate a positive influence ($\beta = 0.302$; $p < 0.001$) on FS implying that, SI enhances FS. Moreover, study results indicate that SI mediates the relationship between SQMP and FS ($\beta = 0.354$; $p < 0.05$) which supported H4. Thus, the direct influence of SQMP on FS through SQI ($\beta = 0.860$; $p < 0.001$) indicates that, the mediator (SQI) partially explains the relationship between SQMP and FS. The study findings imply that SQI enhances the effect of SQMP on FS, but SQMP still has a strong direct impact on FS even after accounting for SQI. Moreover, it implies that SQMP works not only as a managerial philosophy but also as strategic driver that fosters innovation-focused cultures and processes which ultimately enhance financial performance. The study findings corroborate (Hudnurkar, *et al.*, 2023) which indicate that SQMP enhances innovation capability by integrating learning and adaptability into operational routines, which in turn leads to enhanced FS through increased

revenues. Moreover, the study finding implies that SQMP not only improves internal operational efficiency but also serves as a driver for SQI by fostering a culture of continuous improvement, quality-focused leadership, and member-centered service design.

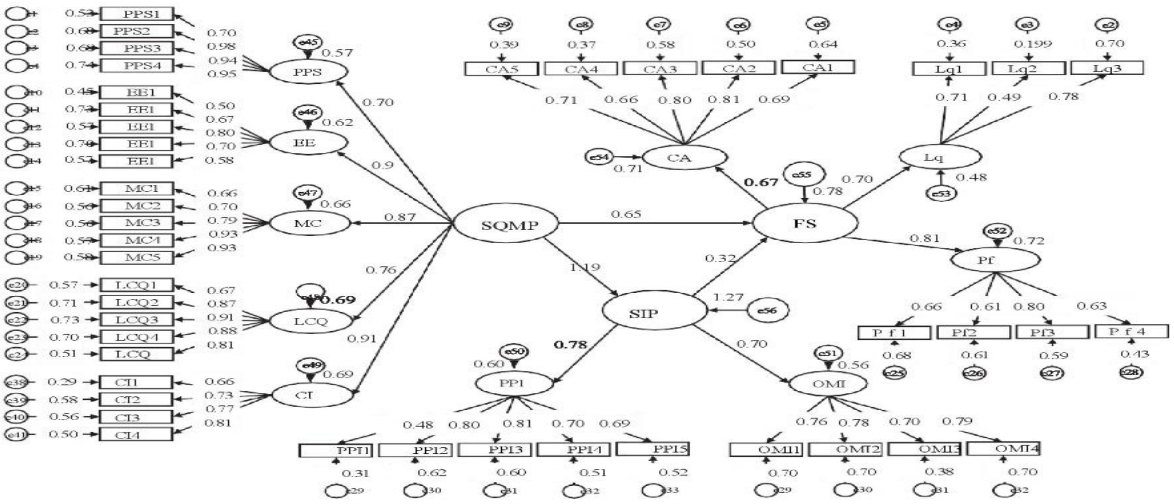

Figure 3: Structural Path for SQMP, SQI and FS

5.0 Theoretical and Policy Implications

From the theoretical standpoint, the study findings are consistent with Deming's TQMP philosophy and the RBV, providing a dual perspective on how internal management systems promote innovation and sustainability in SACCOS. According to Deming's philosophy, organizational performance and long-term achievement are attained through a persistent commitment to continuous improvement, employee participation, and systemic problem-solving. Hence, the study findings show that for SACCOS to foster innovative thinking and adaptive service delivery they must institutionalize SQMP practices like member participation in quality processes and leadership accountability. This recurrent cycle of development boosts internal efficiency and creates a resilient culture that encourages experimentation and member needs which are key to financial performance.

Moreover, the study findings support the RBV highlighting that innovation capabilities rooted in people skills, organizational culture, and process knowledge are distinctive, valuable, and

inimitable resources that sustain competitive advantage in SACCOS. Thus, technical, organizational, and relational capacities arise from co-operative values of trust, participation, and collective problem-solving in SACCOS. The study findings further imply that the partial mediation effect of SQI shows that SQMP alone may not be enough to FS without innovative capabilities that turn quality gains into differentiated offerings and member value generation. This supports RBV's assertion that sustainable performance depends on an organization's ability to reconfigure and integrate internal resources to adapt to changing environments.

Furthermore, the study findings contextualize both theories within the co-operative finance sector, which prioritizes mutual ownership and member-driven control over profit maximization. SACCOS, unlike traditional financial institutions, rely largely on social capital, democratic involvement, and community embeddedness, which can facilitate or hinder SQMP and innovation. Thus, the study suggests that SQMP and SQI synergy offers a new theoretical approach for understanding how Co-operatives can attain FS without compromising social goals. Additionally, as SQI transforms internal quality procedures into member benefits and financial returns, the study findings imply that future SACCOS performance models should incorporate dynamic capability perspectives. This is because innovation bridges internal quality efforts and external performance outcomes, rather than linear SQMP frameworks.

From the policy and managerial standpoint, the mediation effect implies that, enhancing the FS of the SACCOS requires two-fold strategic approaches. Thus, they must uphold robust SQMP along with proactive investment in SQI. SACCOS leaders and managers as well as policymakers ought to perceive SQMP as more than just a compliance mechanism. Thus, it obliges as a catalyst for innovation by promoting participatory decision making, integrating member feedback, and fostering innovation adoption. Likewise, supporting institutions and regulatory bodies, as well as credit unions ought to develop support programs that syndicates quality management training withing innovation gestation, thereby empowering SACCOS to constantly improve service delivery and fine-tune to the shifting needs of their members.

6.0 Conclusions and Recommendations

6.1 Conclusions

The study concludes that the FS of the SACCOS is not just a function of financial outcomes but also an outcome of service quality and innovation-driven management practices. Thus, mutual integration of SQMP and SQI are complementary strategic approaches towards enhancing the FS. Such integration creates a unique Co-operative advantage attached not only in efficiency and profitability but also in inclusivity, trust, and member empowerment. Moreover, such integration provides both structural and cultural foundation for consistent service delivery, facilitate institutional adaptability, diversifications, and sustain competitive advantage.

6.2 Recommendations

The study recommends SACCOS leaders and management to institutionalize SQMP through embedding quality management systems in the daily operation by standardizing process, establishing performance standards, investing in capacity building to members and employees as well as encouraging a culture of continuous improvement and innovation. Also, SACCOS policy makers and the government are recommended to emphasize integration of SQMP and SQI in regulatory framework whereby the Co-operative development stakeholders and supporting institutions are recommended to incorporate SQMP and SQI into their capacity building programs and compliance frameworks. Moreover, the study recommends s for a longitudinal study to analyze the long-term dynamics on how SQMP and SQI integrations evolve in SACCOS over time.

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