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SASRA Financial Monitoring and Reporting Tools and Financial Performance of DT-SACCOS in Kenya

Abdullahi Mohamed Muhumed [a++*] and Clement O. Olando [b#]

[a] Mount Kenya University, Kenya.
[b] School of Business and Economics, Mount Kenya University, Kenya.

Authors' contributions

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

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ABSTRACT

Despite being crucial to Kenya's socioeconomic development, DT-SACCOs' financial performance is significantly impacted by issues related to financial reporting and monitoring that are getting worse. Although, there is a wealth of research on financial performance aspects including; earnings, liquidity, asset quality, and capital adequacy, the findings of extant studies are inconsistent occasioned. The current study as a consequence closed these knowledge gaps by evaluating the impact of financial tools for financial reporting and monitoring provided by SASRA on the financial performance of DT-SACCOs in Kenya. The specific objective to guide the study was to find out the effect of capital adequacy, asset quality, earnings, and liquidity on the financial performance of deposit-taking savings and credit cooperative societies in Kenya. The study, which applied a

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[++] *Postgraduate Scholar;*
[#] *Lecturer;*
**Corresponding author: E-mail: kadogo345@gmail.com;*

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positivist paradigm, adopt a correlational research design, and employ a quantitative approach. The target population was the 181 DT-SACCOs engaged in Kenya SACCO business between 2018 and 2022, where census approach was employed. Quantitative evaluation of the data is required to produce descriptive and inferential statistics. The study concludes that; capital adequacy has a statistically significant positive impact on the financial performance of Kenyan DT-SACCOs, asset quality, conversely exerts a statistically significant negative influence on financial performance, earning ability, similarly, demonstrates a significant negative effect on financial performance of Kenyan DT-SACCO, and liquidity has a positive significant effect on Kenyan DT-SACCOs' financial performance. The study recommends that DT-SACCOs should, implement robust internal mechanisms to continuously monitor their capital adequacy ratios, enhance asset quality and maintain financial stability through comprehensive credit evaluation mechanisms, conduct a comprehensive review of operational costs to identify inefficiencies and reduce unnecessary expenditures, and continuously monitor liquidity levels and adjust policies to balance cash availability with profitability objectives.

Keywords: Asset quality; capital adequacy; earnings ability; financial performance; SASRA financial monitoring and reporting tools; liquidity.

1. INTRODUCTION

1.1 Background of the Study

In order to actively engage the Bottom of the Pyramid (BOP)sectors of the economy, of any country, into the financial system, it is presently imperative to offer loan products at substantially lower interest rates to them (Wanjiru & Jagongo, 2022). In light of this, the founding of Savings and Credit Cooperative Societies (SACCOs) is primarily focused on advancing the financial interests and overall well-being of its members (Lekaaso, Cherono, & Rintari, 2020). Deposit-taking SACCOs (DT-SACCOs) are key financial intermediaries within the SACCO sector, providing essential services such as savings mobilization, loans, and other financial products (Ng'eno, 2019). They bridge the gap between the formal financial sector and underserved populations. A significant contributor to their success is the provision of business loans, which empower borrowers to invest in income-generating activities, enhancing both personal and community wealth (Lekaaso et al., 2020). Since they are capable to offer loans at rates of interest that are less than what other financial organizations impose, these institutions are becoming significant in the financial sector (Maina & Jagongo, 2022). DT-SACCOs therefore have a significant impact on global economies (Sacco Societies Regulatory Authority [SASRA], 2015; Sacco Societies Regulatory Authority [SASRA], 2017).

Globally, the SACCO industry boasts an impressive global turnover of 2.2 trillion US dollars (Lydia, 2018). In Africa, SACCOs play a pivotal role in providing financial services to underserved populations, promoting financial inclusion, and helping to alleviate poverty by enabling members to access affordable credit and build their savings (Nassuna, Jeppesen & Balunywa, 2024). In Kenya, SACCOs have emerged as a major force within the financial sector, positioning the country as a leader in cooperative finance on the continent. Kenya's SACCOs are not only the most prominent in Africa but are also ranked 11th globally (World Council of Credit Unions [WOCCU], 2020). DT-SACCOs, in particular, have seen significant growth, serving an increasing number of rural and urban households (Sacco Societies Regulatory Authority [SASRA], 2021). These institutions play a crucial role in supporting the financial sector by providing a wide range of financial products and services, including savings accounts, loans, and investment opportunities (Ojili, 2023).

Despite their successes, DT-SACCOs in Kenya face several challenges that have hindered their financial performance. One of the major issues is ineffective loan monitoring and reporting, which has resulted in poor financial outcomes and dissatisfaction among stakeholders (Fundi & Wamugo, 2023). Additionally, Kenyan DT-SACCOs are exposed to various financial risks, including credit risk, liquidity risk, and interest rate risk. In Kenya, the role of SACCOs, especially DT-SACCOs, remains critical to the financial well-being of a large portion of the population. However, addressing the operational and financial risks they face is essential for ensuring their continued success and long-term stability. Pointedly, Sacco Societies Regulatory Authority (SASRA, 2019) regulations must be followed by Kenyan SACCOS. Thus, in order to

monitor and report on the safety and stability of their operations, Kenyan DT-SACCOs have to adhere to the financial tools outlined in the SASRA Regulations 2010 for DT-SACCOs. These tools include capital adequacy, quality of assets, earnings, and liquidity, within several others derived from globally accepted standards and best practices (SASRA, 2022). Even with these instruments, Kenyan DT-SACCOs' financial performance is unstable (inconsistent). Thus, the goal of this research remains to examine how these financial instruments affect DT-SACCOs' financial performance in Kenya in order to facilitate SASRA reporting and oversight.

1.2 Statement of the Problem

Kenya has the largest DT-SACCO marketplace in Africa, which is crucial to offering financial services to the country's citizens (WOCCU, 2020). However financial performance of Kenyan DT-SACCOs, measured in terms of Return on assets has been inconsistent. even though the ROA grew in 2022, the rate of profitability growth has been decreasing. It was 2.45% in 2016, grew to 2.69% in 2917, decreased to 2.40% in 2018, increased to 2.60% in 2019, and then to 2.65% in 2020 before experiencing a sharp decline to 1.59% in 2021 and then to 2.61% in 2022 (SASRA, 2023; SASRA, 2022, SASRA, 2021; SASRA, 2020). The Kenyan SACCO component has persisted in operating with a subpar financial monitoring and control system, endangering the funds of its members, (Wamukota, Ondiek & Musiega, 2022). SASRA has devised that the SASRA financial monitoring and reporting tools for helping Kenyan DT-SACCOS address issues that are negatively impacting their financial performance (SASRA, 2020). Yet, prior studies lacked an in-depth examination of the profitability mechanism and as a result, did not provide an adequate evaluation for financial due diligence. So, it is still unknown the manner in which SASRA financial monitoring and reporting tools, as a financial instrument used for SASRA reporting and monitoring, influences the financial performance of DT-SACCOs in Kenya, despite the fact that a great deal of research has already been done on the subject. Most empirical studies had conceptual gaps (Ng'eno, 2019); some had contextual gaps (Okumu & Oyugi, 2016); still others, like Ojili's (2023) research, had methodological gaps (Ogweri, Otinga & Miroga, 2022). This shows that there was limited empirical evidence regarding Kenyan DT-SACCOs' use of SASRA financial monitoring and reporting tools as financial reporting and SASRA monitoring tools to ensure their financial performance; hence this study.

1.3 Objectives of the Study

The main objective of this study was assessing effects of SASRA financial monitoring and reporting tools on financial performance of DT-SACCOs in Kenya.

Specific objective to guide the study were:

i. To establish the effect of capital adequacy on financial performance of Deposit Taking Savings and credit co-operative societies in Kenya.
ii. To find out the effects of asset quality on financial performance of Deposit Taking Savings and credit co-operative societies in Kenya.
iii. To determine the effects of earning ability on financial performance of Deposit Taking Savings and credit co-operative societies in Kenya.
iv. To find out the effect of liquidity on financial performance of Savings and Deposit Taking credit co-operative societies in Kenya.

1.4 Research Hypothesis

The research tested the hypotheses;

H_{01}: Capital adequacy does not significantly affect financial performance of Savings and credit co-operative societies in Kenya.

H_{02}: Asset quality does not significantly affect financial performance of Deposit Taking Savings and credit co-operative societies in Kenya.

H_{03}: Earning ability does not significantly affect financial performance of Deposit Taking Savings and credit co-operative societies in Kenya.

H_{04}: Liquidity does not significantly affect financial performance of Deposit Taking Savings and credit co-operative societies in Kenya.

2. LITERATURE REVIEW

2.1 Theoretical Framework

2.1.1 Capital buffer theory

The Capital Buffer Theory, introduced by Jokipii and Milne (2011), emphasizes the importance of capital adequacy as a key criterion in financial institutions' lending practices. SACCOs tend to

prioritize managing capital over assets, often maintaining reserves above recommended levels to stabilize their operations (Abbas, Butt, Masood & Javaria, 2019). This theory highlights that during economic upswings, financial institutions may lend more, driven by capital formation regulations, but risk insufficient reserves during downturns (Allen, McAleer, Powell & Singh, 2016). In such cases, SACCOs may resort to high-interest rates or illicit means to preserve capital buffers and avoid regulatory penalties (Abbas & Younas, 2021). Capital buffers not only enhance financial stability but also improve institutional credibility, mitigate default risks, and ensure compliance with central bank regulations, ultimately fostering a resilient financial system.

2.1.2 Expense-preference behavior theory

The Expense-Preference Behavior Theory, introduced by Williamson (1963) and refined by Rees (1974), suggests that managers prioritize utility maximization over profit maximization under certain conditions, such as the separation of ownership and control, costly managerial oversight, and weak market competition or regulation (Gropper & Oswald, 1996). This theory offers an alternative to the profit-maximization model by highlighting managerial tendencies to allocate resources toward personal preferences rather than organizational profitability. Excessive expenditures on non-essential items, beyond what profit maximization would justify, reflect this behavior. The theory is relevant in assessing financial performance, particularly in SACCOs, by linking profitability to earnings ability; expressed in terms of operational expenses and total assets (Le, Nguyen & Ngo, 2024).

2.1.3 Liquidity preference theory

The Liquidity Preference Theory, posits that interest rates are determined by money demand and represent the cost of forgoing liquidity (Ogum & Jagongo, 2022). A strong preference for liquidity correlates with higher interest rates and discourages long-term investments, as cash, which is preferred for transactional, precautionary, and speculative motives, does not generate income (Yoon & Neupane, 2024). The transactional motive ensures sufficient cash for operations, while the precautionary motive addresses emergencies and unforeseen opportunities. Although critics argue that interest rates are also influenced by factors like savings, capital productivity, and investments, the theory remains relevant for DT-SACCOs, supporting their focus on maintaining adequate liquidity to foster growth and financial stability.

2.1.4 Empirical literature

In the research by Ojili (2023), inferential statistics show a significant inverse relationship between capital adequacy and the financial success of DT-SACCOs in western Kenya. In accordance to the research, the absence of capital led to a decline in the financial performance of DT-SACCOs in western Kenya. The condition of having enough capital to protect member deposits and creditors from business losses is known as capital sufficiency. In their study, Lekaaso et al. (2020) found no evidence of a relationship between capital sufficiency and the Samburu County SACCOs' financial performance. Mwangi (2020) studied manner in which to keep DT-SACCO capital adequate to find a considerable and positive influence of capital adequacy on DT-SACCO's financial performance. In their study, Nyabaga and Wepukhulu (2020), established that ROA was negatively impacted by asset quality, but insignificantly while leverage significantly improved ROE and had a minor but favourable influence on ROA. Ng'eno (2019) discovered that the relationship among financial performance and the capital adequacy framework was significantly impacted by the allocation of funds.

In their Mutunga and Gatauwa (2021) s determined that the SACCOs' financial performance was positively impacted by asset quality. Meanwhile research by Gadzo, Kportorgbi, and Gats (2019) showed that asset quality significantly improved the banks' performance. The results Adebayo (2017) l showed a significant negative correlation between bank performance and asset quality. Ademba (2019) discovered that asset quality and the financial performance of DT-SACCOs significantly correlated. IN their study, Okumu and Oyugi (2016) showed that asset quality and Sacco performance had a strong and positive association.

The research by Thisaranga and Ariyasena (2021) showed that performance is significantly improved by earning potential. The study by Barus, Muturi, Kibati, and Koima (2017) showed that financial performance of DT-SACCOs was influenced by their earnings capacity.

The liquidity ratio was shown to have a negative low association with non-performing loans in the study by Onyango and Olando (2020). The

results of the study by Charmler, Musah, Akomeah, and Gakpetor (2018) discovered that the capital adequacy ratio and bank size all correlated positively with the control variables. The paper states that in order for banks to optimize their profits, there should be a predetermined optimal amount of liquid assets. Onyekwelu, Chukwuani, and Onyeka's (2018) study showed that profitability ratios are positively and significantly impacted by liquidity as well as employees' return on capital. An effective management of liquidity fosters public confidence in a financial system, and consequently, on banks' liquidity positions.

3. RESEARCH METHODOLOGY

This study tackled the question of the links among the measured variables using a quantitative method in order to comprehend, forecast, control, and predict phenomena. For this reason, the study utilized data from 2018 to 2022. Such yielded as much data as possible about the financial performance of DT-SACCOs and SASRA financial monitoring and reporting tools for the entire population under investigation. The positivist paradigm, which maintains that facts constitute the basis of scientific knowledge and ensures that only what was observed and measured was taken into account, was the basis for this study. Positivists have an interest in testing highly reliable hypotheses and produce extremely precise and particular quantitative data from large samples (Creswell & Creswell, 2020).

3.1 Research Design

This study employed a correlational research strategy for its exploration and analysis. Through examining the relationships between multiple variables, this kind of research design was used to establish forecasts and investigate associations (Wisenthige, 2023). The correlational research strategy was chosen based on the current study, which compares the financial performance of DT-SACCOs with financial tools used for SASRA monitoring and reporting.

3.2 Target Population

As SASRA (2019), the target population consisted of 181 DT-SACCOs, of which 176 have licenses that were then in effect and 7 had licenses that had been revoked. Thus, the target population for the study consisted of the 181 DT-SACCOs that were operational in Kenya from 2018 to 2022. The research used a census for its sampling because the target population was easily accessible and controlled. Given that a census was used, 181 respondents from the 181 DT-SACCOs were included in the sample size. As mentioned earlier, the target population was 181, and since the census took place with the entire population, the sample size was 181.

3.3 Research Instruments

This study used secondary data sources considering this was a financial study. The SASRA, the regulatory body that oversees the country's banking sector, was the source of secondary data that was used. The research used to gather data was a data collection sheet.

3.4 Data Analysis

Descriptive statistics such as means (M), minimum (Max), maximum (Min), and standard deviation (SD) were produced by the study using quantitative methods in accordance with the research objectives. Tables displaying the results were accompanied with narratives providing an explanation of the data.

Analysis of Variance (ANOVA) was used to test the hypothesis at a significance level of 0.05 (p-value =.05). Then Multiple regression Analysis (MRA) was carried out to establish a study model.

4. RESEARCH FINDINGS, ANALYSIS AND PRESENTATION

4.1 Univariate Analysis

In this section, the study presents the univariate analysis, encapsulating the outcomes derived from the quantitative investigation of the characteristics of both the independent variables (IVs) and the dependent variable (DV) (Tessler, 2022). The analysis employed a suite of descriptive statistical measures, including the mean (M), standard deviation (SD), minimum (Min), maximum (Max), percentage (%), and frequency (N), to succinctly summarize the findings. These descriptive statistics illuminated key trends and patterns inherent in the variables under study.

4.2 Descriptives Statistics

The results were systematically displayed in tabular formats, accompanied by in-depth narrative interpretations, ensuring a clear and comprehensive understanding of the data. These

variables were; capital adequacy measured as a ration of core capital to total assets., asset quality which was measured as ratio of the NPLs to gross loans, earning rating expressed as ratio of operating expense to total assets ratio as well as liquidity ratio which was presented as a ratio of total loans to total deposits for the IVs and the financial performance of DT-SACCOs in Kenya (measured using ROA) for the DV and the results were captured in Table 1.

The results show that the number of observations, N, were 871 comprising of annual data collected among the 181 Kenyan DT-SACCOs for the period 2018 to 2022 about their financial performance as well as SASRA financial monitoring and reporting tools; capital adequacy, capital adequacy, asset quality, and liquidity.

The financial performance of DT-SACCOs during the study period, measured by Return on Assets (ROA), averaged 2.37% (M = 2.37%, SD = 0.78%), with a range of -0.05% to 10.3% and moderate variability (CV = 32.16%) (Shechtman, 2013). This performance reflects the asset-intensive nature of DT-SACCO operations, where substantial investments in assets are required to generate earnings (CFI Team, 2024). The low ROA highlights inefficiencies in asset utilization, elevated operating costs, and strategic management challenges. The moderate variability suggests disparities in operational efficiency, governance, and market conditions within the sector. These findings emphasize the need for robust financial planning, cost management, and capacity-building strategies to improve asset productivity and overall financial performance.

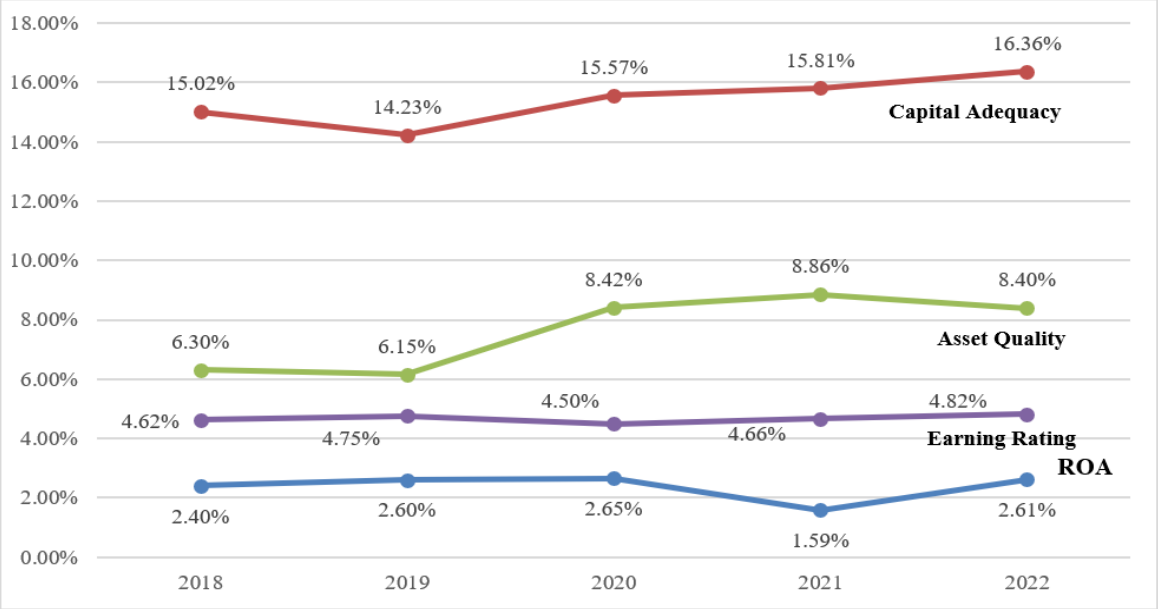
The capital adequacy of DT-SACCOs averaged 15.40% (M = 15.40%, SD = 16.67%) with a wide range of -77.31% to 102.94%, exceeding the SASRA-recommended minimum of 10% of core capital to total assets, ensuring a secure environment for member deposits (SASRA, 2022). This ratio reflects the capacity to absorb risks and liabilities, with Ksh 15.40 reserved for every Ksh 1 in potential losses. However, the variability indicates inconsistent risk management practices. Sufficient cash reserves are critical for operational stability and consistent performance, as ineffective capital management can lead to financial instability and insolvency risks (Almazari & Alamri, 2017). Capital sufficiency is a key indicator of the financial health and resilience of DT-SACCOs, with regulatory frameworks mandating adequate capital adequacy levels to safeguard member deposits and creditors from potential losses (Chepkemoi, 2023). SASRA, as the regulatory authority, enforces these requirements, promoting sector stability and mitigating financial shocks. The average capital adequacy ratio of 15.40% signifies a secure environment for members, ensuring sufficient reserves to address risks such as non-performing loans, particularly those maturing within one to twelve months. This regulatory oversight enhances member trust and supports the long-term sustainability of Kenya's cooperative financial sector.

Based on the dataset of 871 observations, the study assessed the asset quality of Deposit-Taking SACCOs (DT-SACCOs) using the loan loss coverage ratio (gross). The results revealed a range of values between 0% and 65.11% (Min = 0.00%; Max = 65.11%), with the average asset quality standing at 7.64% (M = 7.64%; SD = 8.77%). This figure exceeds the 5% threshold recommended by the Sacco Societies Regulatory Authority for maintaining adequate capital reserves against NPLs (SASRA, 2021). An average asset quality of 7.64% indicates that for every Ksh. 1 attributed to the cost of NPLs, the SACCOs provisioned Ksh. 7.64. This substantial provision reflects the considerable burden of NPLs, suggesting that the DT-SACCOs face significant challenges in managing loan portfolios and mitigating associated risks. Additionally, the observed standard deviation of 8.77% highlights considerable variability in asset quality across the SACCOs, emphasizing inconsistency in financial health within the sector. The findings indicate that the asset quality of Kenyan DT-SACCOs is unsatisfactory, as the ratio exceeds the maximum 5% threshold established by both SASRA (2021) and the Central Bank of Kenya (CBK, 2020) prudential guidelines. These guidelines stipulate that financial institutions should maintain an NPL ratio below 5% to safeguard financial stability. Surpassing this threshold signals a critical NPL problem, suggesting heightened credit risk and potential mismanagement of loan portfolios, which can undermine institutional stability and growth. The rising accumulation of NPLs in the sector is a major concern, as it often correlates with financial distress within institutions and may contribute to broader systemic vulnerabilities in the financial sector. These present a significant threat to the sustainability and stability of the SACCO sector in Kenya, necessitating urgent regulatory attention and corrective measures to improve asset management and risk mitigation strategies.

Table 1. Descriptive statistics

Parameter	N	M	SD	Min	Max
Financial performance of Kenyan DT-SACCOs	871	2.37%	0.78%	0.00%	6.98%
Capital adequacy	871	15.40%	16.67%	-77.31%	102.94%
Asset quality	871	7.64%	8.77%	0.00%	65.11%
Earning ability	871	4.67%	2.52%	-5.51%	10.37%
Liquidity	871	110.42%	29.42%	0.00%	288.16%

Source: Research data (2024)



Source: Research data (2024)

Fig. 1. Capital adequacy, asset quality, earning ability and ROA

The analysis of earning ability among DT-SACCOs revealed a range of values from -5.51% to 10.37% (M = 4.67%; SD = 2.25%), indicating variability in performance. The high Operating Expense to Total Assets (OETA) ratio observed suggests inefficiency in asset utilization, as a substantial portion of assets is consumed by operating expenses such as administrative and general costs. This inefficiency may stem from factors like overstaffing, poor management practices, or high overhead expenses, undermining profitability and overall financial performance (Van der Merwe & Pistorius, 2019). High OETA ratios raise concerns among stakeholders, as they indicate weak cost control mechanisms and reduced ability to convert assets into value. Persistently elevated ratios could result in diminished profitability, challenges in maintaining capital adequacy, and financial instability. Akintoye (2020) highlights that such inefficiencies may threaten long-term sustainability, necessitating robust cost optimization strategies to enhance operational efficiency and safeguard the financial health of SACCOs.

The liquidity analysis of DT-SACCOs revealed an average liquidity ratio of 110.42% (SD = 29.42%), with values ranging from 0.00% to 288.16%. This indicates that, on average, SACCOs maintained sufficient liquid assets to cover short-term liabilities, with Ksh. 110.42 available for every Ksh. 1 of obligations, demonstrating strong financial health. However, the high standard deviation highlights variability, suggesting that some SACCOs were highly liquid while others faced liquidity challenges, potentially due to differences in management practices or asset allocation. A liquidity ratio above 100% is a positive indicator, reflecting the ability to meet obligations without external funding, yet excessively high ratios may signal inefficiencies in asset utilization, as idle liquid assets could reduce profitability (Roe & Bricker, 2018). While the high average ratio underscores robust risk management, monitoring is needed to ensure

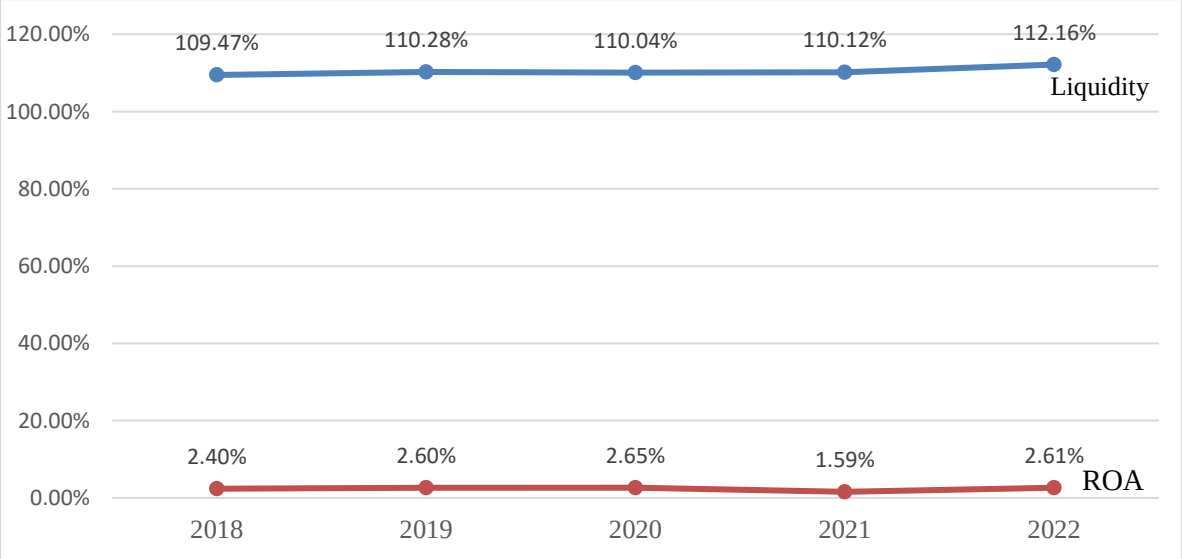
liquid assets are effectively deployed to balance stability and profitability.

4.3 Trends Between IVs and the DV

The results depicted in Fig. 1 illustrate the trends in capital adequacy and the financial performance of Kenyan Deposit-Taking SACCOs (DT-SACCOs) over the years 2018 to 2022. In 2018, capital adequacy stood at 15.02%, while the financial performance of DT-SACCOs was 2.40%. In 2019, capital adequacy decreased slightly to 14.23%, but the financial performance improved to 2.60%. The year 2020 saw a rise in both capital adequacy to 15.57% and financial performance, which increased to 2.65%. However, in 2021, despite capital adequacy increasing further to 15.81%, the financial performance of DT-SACCOs sharply declined to 1.59%. By 2022, capital adequacy had reached 16.36%, while financial performance recovered to 2.61%. Overall, the results suggest a generally positive, directly proportional relationship between capital adequacy and financial performance, where an increase in capital adequacy is often associated with improved financial outcomes for the DT-SACCOs. This supports the notion that maintaining sufficient capital is crucial for the stability and financial performance of DT-SACCOs as financial institutions (SASRA, 2021; Chepkemoi, 2023).

The analysis of the asset quality and financial performance of Kenyan Deposit-Taking SACCOs (DT-SACCOs) over the years 2018 to 2022 reveals a fluctuating, inverse relationship between these two variables. In 2018, asset quality was recorded at 6.30% declined slightly to 6.15% in 2019. The year 2020 saw a rise in asset quality to 8.42%, and increase to 8.86%, in the year 2019 In 2022, asset quality decreased again to 8.40%. These results suggest that asset quality and financial performance of DT-SACCOs exhibit an indirect, or negatively proportional, relationship. As asset quality fluctuates, financial performance increases. This pattern indicates that higher asset quality may not necessarily translate into improved financial performance, and vice versa, highlighting the complex dynamics between asset management and profitability within these financial institutions (Njiru & Muchemi, 2021).

In 2018, earning ability was recorded at 4.62% which in 2019, slightly to 4.75%, However, in 2020, there was slight decrease in earning ability to 4.50%. The year 2021 saw a further increase in earning ability to 4.66%. Finally, in 2022, as earning ability rose to 4.82%, Overall, the trend analysis suggests a generally blend of direct/indirect relationship between earning ability and financial performance, as increases in earning ability are typically associated with increases in financial performance. However, the abrupt decline in 2021 suggests that this relationship may not always be linear and may be influenced by other external or internal factors. This finding aligns with existing literature that posits a positive but occasionally volatile correlation between earning capacity and profitability.



Source: Research Data (2024)

Fig. 2. Liquidity and ROA

The analysis of liquidity and financial performance among Kenyan Deposit-Taking SACCOs (DT-SACCOs) reveals a complex, non-linear relationship. From 2018 to 2019, both liquidity (109.47% to 110.28%) and financial performance (2.40% to 2.60%) increased, indicating a positive correlation. However, in 2020, despite a slight decline in liquidity to 110.04%, financial performance improved to 2.65%, suggesting that additional factors like management efficiency or market conditions might influence outcomes. In 2021, liquidity rose marginally to 110.12%, yet financial performance dropped sharply to 1.59%, reflecting an indirect relationship. By 2022, liquidity decreased to 112.16% while financial performance rebounded to 2.61%, underscoring the variability in the liquidity-performance link. These findings highlight that while liquidity plays a significant role, financial performance is shaped by multiple internal and external factors, making the relationship intricate and time-sensitive.

4.4 Inferential Analysis

4.4.1 Correlation analysis

Using Pearson's Product Moment (PPM) correlation, this study investigated the relationship between the independent variables (IVs) and the dependent variable (DV), with the results displayed in Table 2. This statistical method helps determine the strength and direction of linear relationships between the financial characteristics and performance metrics of the SACCOs, thus providing a clearer understanding of how these variables interact (Pallant, 2020).

Based on the results presented in Table 2, the relationships between the dependent variable (DV) and each independent variable (IV), capital adequacy ($p < 0.01$), asset quality ($p < 0.01$), earnings ability ($p < 0.01$), and liquidity ($p < 0.01$), were all statistically significant, with p-values below the conventional threshold of 0.05. Among these relationships, liquidity ($r = 0.5858$) exhibited the strongest correlation, followed by capital adequacy ($r = 0.4827$). In contrast, asset quality ($r = 0.1945$) and earnings ability ($r = -0.1617$) demonstrated weaker correlations, as their respective absolute correlation coefficients were less than 0.3. The moderate strength of the relationship between liquidity and capital adequacy with the financial performance of DT-SACCOs suggests that these variables have a more substantial influence on financial outcomes. Specifically, liquidity ($r = 0.5858$) and capital adequacy ($r = 0.4827$) had correlation coefficients above 0.3, indicating a moderate association with financial performance. On the other hand, asset quality ($r = 0.1945$) and earnings ability ($r = -0.1617$), with their lower correlation values, suggest weaker relationships with financial performance. These findings underscore the varying degrees of influence that the different financial performance of DT-SACCOs in Kenya have on the performance of SACCOs, providing valuable insights into the factors that contribute to their financial outcomes.

4.4.2 Regression analysis

By utilizing all relevant IVs, MRA enhances the reliability of predictions regarding financial performance, offering valuable insights for decision-making and policy formulation within the SACCO sector.

In the present study, the p-value for the regression model falls below the conventional significance threshold of 0.05, thereby indicating that at least one of the beta coefficients is significantly different from zero. This conclusion is reinforced by the statistical findings ($p < 0.01$, $F = 137.21$), which demonstrate a robust relationship between the independent variables and the dependent variable. Consequently, the null hypothesis (H_0: $\beta i = 0$), which asserts that the coefficients for the independent variables—namely, capital adequacy, asset quality, earnings ability, and liquidity—are equal to zero, is rejected. The rejection of this null hypothesis in favour of the alternative hypothesis (H_a: $\beta i \neq 0$) affirms that the independent variables exert a statistically significant influence on the financial performance of Kenyan Deposit-Taking SACCOs (DT-SACCOs) at a significance level of $\alpha < 0.05$. Moreover, the p-values associated with each of the independent variables are all less than 0.05, confirming that capital adequacy, asset quality, earnings ability, and liquidity all significantly contribute to explaining the financial performance of Kenyan DT-SACCOs.

The coefficient of determination (R^2) value of 0.5601 indicates that the combined effects of the independent variables, capital adequacy ($p < 0.01$), asset quality ($p < 0.01$), earnings ability ($p = 0.017$), and liquidity ($p < 0.01$), account for 56.01% of the variance in financial performance. This suggests that the model, incorporating these financial indicators, is able to explain a substantial proportion of the variability in financial

Table 2. Analysis by correlation analysis

	Financial performance of DT-SACCOs in Kenya	Capital adequacy	Asset quality	Earning ability	Liquidity
Financial performance of DT-SACCOs in Kenya	1				
Capital adequacy	0.4827	1			
	0.0000				
Asset quality	0.1945	0.1275	1		
	0.0000	0.0002			
Earning ability	-0.1617	-0.1245	-0.1310	1	
	0.0000	0.0002	0.0001		
Liquidity	0.5858	0.3985	0.4160	-0.137	1
	0.0000	0.0000	0.0000	0.000	

Source: Research Data (2024)

Table 3. Regression coefficients

Source	SS	df	MS		Number of obs = 871	
					F (8,862) = 137.21	
Model	0.47308	8	0.05913		Prob > F = 0.000	
Residual	0.37150	862	0.00043		R-squared = 0.5601	
					Adj R-squared = 0.5561	
Total	0.84458	870	0.00097		Root MSE = .02076	
Financial performance	Coef.	Std. Err	T	P>|t|	[95% Conf	Interval]
Capital adequacy	0.11671	0.02952	3.95	0.000	0.05876	0.17465
Asset quality	-0.22879	0.02831	-8.08	0.000	-0.28435	-0.17323
Earning ability	-0.06412	0.02686	-2.39	0.017	-0.11683	-0.01140
Liquidity	0.29683	0.03067	9.68	0.000	0.23664	0.35702
Year						
2019	-0.03389	0.00299	-11.34	0.000	-0.03975	-0.02802
2020	-0.04187	0.00321	-13.02	0.000	-0.04817	-0.03556
2021	-0.04996	0.00314	-15.93	0.000	-0.05612	-0.04381
2022	-0.03479	0.00348	-9.99	0.000	-0.04163	-0.02795
cons	0.03468	0.00254	13.65	0.000	0.02969	0.03967

Source: Research Data (2024)

performance, thereby offering relatively accurate predictions based on fluctuations in these key financial metrics. Therefore, changes in capital adequacy, asset quality, earnings ability, and liquidity can reliably predict the financial performance of Kenyan DT-SACCOs. These findings are consistent with the broader body of literature on financial determinants of institutional performance. Notably, Mutunga and Gatauwa (2021) also underscore the value of incorporating multiple financial indicators into regression models to provide valuable insights into performance dynamics and profitability forecasting. These studies further validate the significant role that variables such as capital adequacy, asset quality, earnings ability, and liquidity play in shaping the financial outcomes of financial institutions.

The study investigated the hypotheses listed below;

> *H_{01}: Capital adequacy does not significantly affect financial performance of Savings and credit co-operative societies in Kenya.*

The capital adequacy statistics (β = 0.1167; p = 0.001) indicate a p-value below the conventional threshold of 0.05, signifying that capital adequacy plays a crucial role in assessing the financial performance of Kenyan Deposit-Taking SACCOs (DT-SACCOs). This outcome supports the rejection of the null hypothesis (H_0) at the α = 0.05 significance level, thereby confirming that capital adequacy is not zero and has a substantial positive impact on financial performance. These findings align with previous research by Ojili (2023), which identified a

significant inverse relationship between capital adequacy and the financial success of DT-SACCOs in Western Kenya. Specifically, the study found that inadequate capital contributed to a decline in financial performance, underscoring the importance of capital sufficiency in safeguarding member deposits and protecting creditors from business losses. Capital sufficiency, defined as having enough capital to cushion against potential losses, is a key determinant of financial stability.

The next step in this analysis is to assess the impact of asset quality, guided by the following hypothesis:

> *H_{02}: Asset quality does not significantly affect financial performance of Deposit Taking Savings and credit co-operative societies in Kenya.*

The analysis of asset quality in this study reveals a coefficient (β) of -0.2288, accompanied by a p-value of less than 0.01, which is well below the conventional threshold of 0.05. This statistically significant p-value leads to the rejection of the null hypothesis (H_0), which posits that the coefficient for asset quality is zero. Therefore, at a significance level of α = 0.05, there is compelling evidence to support the conclusion that asset quality exerts a significant impact on the financial performance of Deposit-Taking SACCOs (DT-SACCOs) in Kenya. The negative coefficient associated with asset quality suggests that poor asset quality negatively affects the financial performance of these SACCOs. Specifically, a high level of non-performing loans (NPLs) or suboptimal asset management practices are correlated with diminished financial outcomes. These findings are consistent with prior research, such as Adebayo (2017), which identified a significant negative correlation between asset quality and bank performance. In their study, poor asset quality, characterized by an elevated proportion of NPLs, was shown to directly contribute to lower profitability and financial instability in financial institutions. Similar conclusions were drawn by SASRA (2022) that DT-SACCOs with higher levels of non-performing assets experienced reduced profitability and capital adequacy, further validating the critical role of asset quality in influencing financial performance. Thus, the evidence presented in this study underscores the importance of asset quality as a determinant of financial performance, emphasizing the need for effective asset management and prudent lending practices in order to enhance the financial health of DT-SACCOs in Kenya.

The study examined the impact of earnings ability on the financial performance of Kenyan DT-SACCOs by testing the associated hypothesis.;

> *H_{03}: Earning ability does not significantly affect financial performance of Deposit Taking Savings and credit co-operative societies in Kenya.*

The analysis of earnings ability in this study yields a coefficient (β) of -0.0641, coupled with a p-value of 0.017, which is well below the conventional significance threshold of 0.05. This statistically significant result prompts the rejection of the null hypothesis (H_0), which asserts that the earnings ability coefficient is zero. Consequently, at a significance level of α = 0.05, there is compelling evidence to conclude that earnings ability significantly influences the financial performance of Kenyan Deposit-Taking SACCOs (DT-SACCOs). These finding is consistent with previous studies such as those by Mollah et al. (2014) and Kosmidou et al. (2008), which emphasize the pivotal role of earnings ability in sustaining the profitability and stability of financial institutions. Mollah et al. (2014) highlights that earnings ability not only boosts profitability but also serves as a buffer against financial instability, particularly in times of economic volatility. This is crucial for financial institutions, including Deposit-Taking SACCOs (DT-SACCOs), as they need to generate consistent income to weather external shocks. Similarly, Kosmidou et al. (2008) stress that robust earnings are directly correlated with improved financial performance and a bank's long-term viability. These findings underscore the critical importance of enhancing income-generating strategies and improving operational efficiency within DT-SACCOs.

In the context of hypothesis testing, this study aimed to investigate the impact of liquidity on the financial performance of Deposit-Taking SACCOs (DT-SACCOs) in Kenya. Specifically, it sought to evaluate how liquidity, as a financial variable, interacts with other established financial performance indicators, such as capital adequacy, asset quality, and earnings ability. The role of liquidity in financial performance has been widely discussed in the literature, with research consistently highlighting its importance in maintaining solvency and ensuring smooth

operations in financial institutions (Fundi & Wamugo, 2023; Wanjiru & Jagongo, 2022).

> *H_{04}: Liquidity does not significantly affect financial performance of Deposit Taking Savings and credit co-operative societies in Kenya.*

The results of the analysis, with a p-value of less than 0.05 and a regression coefficient (β = 0.2968; p < 0.01), provide strong evidence for rejecting the null hypothesis (H_0), which posits that liquidity has no significant impact on financial performance. At the significance level of α = 0.05, the findings demonstrate that liquidity exerts a statistically significant and positive influence on the financial performance of Kenyan Deposit-Taking SACCOs (DT-SACCOs). This result aligns with the work of Wanjiru, and Jagongo (2022)., whose study similarly established a positive and significant relationship between liquidity and the financial performance of DT-SACCOs in Kenya. The positive coefficient suggests that higher liquidity levels enable these institutions to meet short-term financial obligations more effectively, which in turn contributes to improved financial stability and performance. This outcome is consistent with broader research on liquidity in financial institutions, which often finds that sufficient liquidity is essential for maintaining solvency, managing risks, and ensuring efficient operations. Studies further support the notion that liquidity is a key determinant of profitability and overall financial success in the banking sector. Charmler et al. (2018) found a weak but positive correlation between liquidity and asset returns, suggesting that while liquidity plays a role in influencing returns, its impact is relatively minor. Additionally, the study indicated a negligibly negative relationship between net assets, gross interest-bearing liabilities, and Return on Equity (ROE), signalling that these factors do not significantly drive profitability in the observed context. The research further revealed that the capital adequacy ratio and bank size had positive correlations with various control variables, highlighting the influence of financial fundamentals on the performance of banks. The paper emphasized the need for banks to identify an optimal level of liquid assets to maximize profitability. It posited that an excessive accumulation of liquidity could be detrimental to returns, as holding too many liquid assets may prevent banks from deploying resources more profitably. Consequently, banks must evaluate the point at which increasing liquidity could begin to erode their profitability. This idea resonates with the findings of Onyekwelu et al. (2018), who demonstrated a significant and positive relationship between liquidity and profitability ratios in financial institutions. The authors further noted that efficient liquidity management enhances public confidence in the financial system, which in turn supports the stability of institutions.

The regression model is;

$$Y = 0.03468 + 0.1167X_1 - 0.2288X_2 - 0.0660 + 0.2039X_4 \quad \text{(i)}$$

Such that

Financial performance of DT-SACCOs in Kenya = 0.03468 + 0.1167 (capital adequacy)- 0.2288 (asset quality) -0.0641 (earning ability) + 0.2968 (liquidity).

The analysis underscores key dynamics between financial performance and various independent variables in Kenyan Deposit-Taking SACCOs (DT-SACCOs). When all independent variables are zero, the financial performance baseline is 0.03468, representing the inherent financial state before considering the influence of external factors. Based on asset quality (β_1 = -0.2288), A one-unit increase in asset quality results in a 0.2288-unit reduction in financial performance. This inverse relationship suggests that higher asset quality, often reflected by higher proportions of non-performing loans (NPLs), adversely impacts profitability. This finding highlights the critical need for robust credit management practices to minimize NPLs and enhance financial stability. On earning ability (β_1 = -0.0641), a one-unit rise in earning ability corresponds to a 0.0641-unit decrease in financial performance. This counterintuitive result could stem from inefficiencies in income-generating strategies or rising costs associated with earnings expansion that fail to translate into proportional returns. Addressing operational inefficiencies might mitigate this negative impact. Based on capital adequacy (β_1 = 0.1167), capital adequacy also positively impacts financial outcomes, with a one-unit increment leading to a 0.1167-unit rise in performance. Adequate capitalization ensures the ability to absorb financial shocks and protects member deposits, promoting institutional resilience. With liquidity (β_1 = 0.2968), liquidity exhibits the strongest positive influence, with a one-unit increase yielding a 0.2968-unit improvement in financial

performance. Effective liquidity management enables DT-SACCOs to meet financial obligations while leveraging opportunities for growth, thereby enhancing profitability.

5. CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

The study concludes that capital adequacy has a statistically significant positive impact on the financial performance of Kenyan DT-SACCOs, accounting for 11.67% of the variation in financial performance. An increase in capital adequacy by one-unit results in a proportional improvement of 0.1167 units in financial performance, underscoring its pivotal role in ensuring financial stability.

In conclusion, asset quality, conversely, exerts a statistically significant negative influence on financial performance, with a negative impact accounting for 22.88% of the variance in financial outcomes. High levels of non-performing loans (NPLs) and elevated loan loss provisions drain financial resources, diverting funds from productive uses and undermining shareholder equity. This results in weakened financial performance, highlighting the urgent need for improved asset quality management among DT-SACCOs.

The study concludes that earning ability, similarly, demonstrates a significant negative effect on financial performance of Kenyan DT-SACCO. The study concludes that an increase in earning ability reduces financial performance, while a reduction in earning ability enhances it. This inverse relationship suggests that excessive earning ability, though indicative of short-term stability, may constrain profitability due to suboptimal asset utilization.

The study concludes that liquidity has a positive significant effect on Kenyan DT-SACCOs' financial performance, where for every Ksh.1 short term liabilities, these DT-SACCOs have liquid asset to the tune of Kshs 110 and 42 cents for repay such. Liquidity leads to 0.2968 units rate of change of financial performance of Kenyan DT-SACCOs in the same direction.

Overall, the study emphasizes the critical need for SASRA financial monitoring and reporting tools to address pressing concerns related to asset quality, earning ability, and liquidity management. These findings affirm the utility of SASRA monitoring and financial reporting tools in evaluating and enhancing financial performance and fostering long-term sustainability in the sector. Immediate strategic interventions in these areas are imperative to optimize the financial health of DT-SACCOs.

5.2 Recommendations

The study suggested policy recommendation guided by the objectives.

5.3 Policy Recommendations

This multifaceted analysis illustrates the interplay between key financial variables and performance outcomes. It emphasizes the dual need to capitalize on strengths (liquidity and capital adequacy) while addressing weaknesses (asset quality and earning ability). Such a balanced approach is pivotal for sustainable growth and financial stability in Kenyan DT-SACCOs. This research suggest the Kenya DT-SACCOS should seek to enhance their ROA, by ensuring that the movements of assets including loans and advances grow with time. These banks should seek to reduce high NPL occurrences through implementing quality management strategies geared towards improving their financial performance. such strategies should emphasis on effectiveness in loan disbursement and collection as well as focusing on capital adequacy lending and collection of disbursed funds.

The financial performance of Kenyan Deposit-Taking SACCOs (DT-SACCOs) demonstrates suboptimal efficiency, as evidenced by an average ROA of 2.37% during the study period. Factors contributing to this low ROA may include suboptimal asset utilization, elevated operating costs, or strategic inefficiencies in asset management. Such findings underscore the importance of implementing targeted strategies to enhance asset productivity and improve overall financial performance within Kenyan DT-SACCOs. These interventions may include robust financial planning, strategic cost management, and capacity building to address the operational challenges faced by the sector.

Based on the significance of capital adequacy in enhancing financial performance and stability, the following recommendations can be made for Deposit-Taking SACCOs (DT-SACCOs) to

strengthen their operational resilience and performance: DT-SACCOs should implement robust internal mechanisms to continuously monitor their capital adequacy ratios, ensuring compliance with regulatory requirements and preparing for economic fluctuations, align capital adequacy levels with the SACCOs risk profile by identifying areas of high risk and maintaining proportional capital reserves, and minimise operational inefficiencies to preserve capital and enhance overall profitability.

Based on the analysis of asset quality, which highlights the significant negative impact of high non-performing loan (NPL) ratios on financial performance, the following recommendations are made for DT-SACCOs to enhance asset quality and maintain financial stability:, implement comprehensive credit evaluation mechanisms to ensure loans are granted only to borrowers with a strong repayment capacity, periodically assess the performance of loan portfolios to identify potential default risks early and take corrective action, and leverage credit scoring tools to enhance objectivity and accuracy in evaluating borrower creditworthiness.

Based on the analysis revealing a moderate earning ability and negative relationship with the financial performance of Kenyan DT-SACCOs, the following recommendations are proposed; DT-SACCOs should conduct a comprehensive review of operational costs to identify inefficiencies and reduce unnecessary expenditures. Efficient cost management can improve the net returns from current earnings. They should as well implement advanced financial management systems to streamline operations, reduce transaction costs, and improve service delivery, which may translate into better earnings and profitability. They should invest in high-yield assets and limit the proportion of non-performing loans (NPLs) to maximize returns from existing investments.

Based on the study findings that DT-SACCOs maintain a strong liquidity position, which positively influences their financial performance, the following recommendations are proposed to ensure continued strength in liquidity management and optimize its contribution to financial success; DT-SACCOs should avoid excessive liquidity that could reduce opportunities for earning higher returns through investments or lending as they ensure liquidity levels are consistent with SASRA requirements while optimizing surplus funds for income-generating activities. . They should implement advanced cash flow forecasting tools to anticipate and manage short-term and long-term liquidity requirements effectively. They should continuously monitor liquidity levels and adjust policies to balance cash availability with profitability objectives.

Lastly, the research recommends that Kenyan DT-SACCOs should be employing SASRA monitoring and reporting financial.

5.4 Recommendations for Further Study

Based on the findings of this research, several areas for further exploration are suggested:

1. Asset quality was found to be above the prescribed 5% threshold but it was clear the rising NPLs which might have led to this. Accordingly, other studies should be done to establish the factors occasioning the high occurrence of NPLs and means of dealing with asset quality.
2. While the high average liquidity ratio indicates the DT-SACCOs' capacity to fulfill short-term liabilities, it is important to assess whether these liquid assets are being deployed effectively to balance risk management with profitability goals. A longitudinal study could examine the long-term trends in non-performing loans within Kenyan DT-SACCOs and their correlation with financial performance and risk management strategies. This would help in understanding how the accumulation of NPLs over time affects asset quality hence the operational health of SACCOs.

5.5 Relevance to Socioeconomic Development

The findings offers critical insights into the financial performance of Deposit-Taking Savings and Credit Cooperative Societies (DT-SACCOs) in Kenya, a sector with significant socioeconomic implications. The findings emphasize how SASRA financial monitoring and reporting tools contribute to enhancing the performance of DT-SACCOs. This, in turn, facilitates economic empowerment, poverty reduction, and sustainable development. By ensuring transparency, stability, and efficiency, these tools enable SACCOs to serve as engines of socioeconomic progress, making them vital to Kenya’s financial landscape and overall development trajectory.

5.6 Addressing Financial Performance Challenges

By systematically examining the impacts of financial monitoring tools such as capital adequacy, asset quality, earnings ability, and liquidity, the research provides a good understanding of the complex factors driving financial performance in cooperative financial institutions.

5.7 Integration of SASRA's Role

SASRA's regulatory framework aligns with Kenya's Vision 2030, which emphasizes financial sector reforms to enhance inclusivity and sustainability. By ensuring SACCOs operate effectively, SASRA tools contribute to the achievement of national goals such as economic empowerment, gender equality, and rural development.

5.8 Strengthening Institutional Governance

SASRA's financial tools improve governance by enforcing financial discipline and operational efficiency in SACCOs, minimizing risks such as fraud and mismanagement. Strong governance enhances member confidence and ensures that SACCO resources are used to support productive activities.

5.9 Policy and Practical implications

Policies derived from these findings can enhance regulatory effectiveness, improve financial stability, and expand financial inclusion. Practically, SACCOs can leverage the insights to refine their internal processes, boost member confidence, and contribute to Kenya's socioeconomic development.

DISCLAIMER (ARTIFICIAL INTELLIGENCE)

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc.) and text-to-image generators have been used during the writing or editing of this manuscript.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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