

Effects of Firm Size and Prudential Regulations on Financial Stability of Deposit Taking Saccos in Nakuru County, Kenya

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Abstract

The purpose of the study was to assess the effects of firm size and prudential regulations on financial stability of deposit taking saccos (DTS) in Nakuru County, Kenya. Further, in recent times, DTS have been facing financial instability especially those that wait for check off deductions in order to sustain their finances. Members have to wait for long, more than two months to be awarded the loan. The specific objective of the study was: to examine the relationship between capital adequacy and the financial stability of DTS. The theories used in this study are the CAMEL model and the capital buffer theory of capital adequacy. The study adopted survey research design. This research was done in Nakuru County, in which case, according to SASRA website, 4 out of 172 registered DTS in Kenya were the target population. Data was analyzed by various tools such as excel and SPSS version 20. The target population of the study comprised of licensed DTS SACCOs in Nakuru county for a period of five years between 2016-2020. The study used data from DT-SACCOs in Kenya found in the recently published financial statements by SASRA annual report. The study used panel data regression analysis model. Descriptive statistics and inferential statistical techniques were used to analyze the data. All inferential statistics was tested at 0.05 significance level. The findings revealed that there is a positive relationship between the capital adequacy and financial stability of deposit taking SACCOs ($p=0.037<0.05$). From the findings, the study concludes that capital adequacy has a statistically significant relationship with financial stability of DT-SACCOs in Nakuru. In conclusion, the study recommends that saccos should hold more capital to cover the related risk, higher provisions and prepare for the losses. Finally, Sacco's should focus on improving their investment assets levels in order to improve their financial performance.

Keywords: firm size, prudential regulations, financial stability, capital adequacy

Background to the Study

Cooperatives were founded by Rochdale Society of Equitable Pioneers in 1844, one of the earliest consumer cooperatives to award a benefaction dividend which started the modern cooperative movement. The Rochdale Pioneers' co-operative became the model for UK societies, notwithstanding earlier co-operatives. These Pioneers founded the Rochdale philosophy, a set of cooperative regulations that cooperatives use today (Gatuguta, 2014).

Cooperative analysts exploit structural trends in Russian agriculture, such production cooperatives (Hendrikse & Feng, 2013). Russia's market economy has benefited agriculture. Given that the country's agriculture is handled by unhindered market forces, the survival of Russian agricultural cooperatives may be a proof of their inventiveness. People lacked infrastructure, money, and time. Consequently, employees formed fabrication cooperatives. Production cooperatives integrate vertically like other cooperatives. Russians valued rural life and resisted change (Golovina, 2013).

A mutual fire insurance company was the first well-known cooperative enterprise in the United States. It was started by Benjamin Franklin in 1752 and is still in operation today. In 1845, a concerted push to develop consumer cooperatives was launched (Pitman, 2018). It is also worth noting that the status of a country's economy has an impact on SACCO membership and loan intake. With SACCOs accounting for 48.0 percent of the nation's gross savings, it's critical that this sector be well-protected to ensure market and economic stability. The global financial markets meltdown of 2007 has serious implications for economic growth in both developed and developing nations. The long-term viability of Kenya's economy and financial system is still threatened by foreign threats (Annual Sacco Supervision Report, 2019). Ratios are checked on a regular basis to ensure that the SACCOs remain solid. In reality, the World Council of Credit Unions has established a financial ratio that incorporates profitability, earnings, assets, returns, liquidity, and sales and is crucial in determining the SACCOs' viability (WOCCU, 2014).

Traditional Kenyan cooperatives began in 1908, according to SACCO's Sector Republic of Kenya (2007). In 1908, the country's first dairy co-op was created. In 1931, the Kenyan government enacted the first Co-operative Regulation to regulate cooperatives. The colonial authority recognized the need for Africans to participate in the economy via co-operatives in 1946, leading to the approval of a new Co-operative Societies Ordinance. The 1955 Swynnerton Plan encouraged Africans to produce cash crops, paving the way for new co-operatives. Session Paper No. 8 of 1970 was the first post-independence Government Co-operative Development Policy to consolidate co-operative activities.

According to the Kenya Population and Housing Census - KPHC (2019) the Census Report (2019), and the SACCO subsector Demographic Study Report, 10.5% of the country's 47.55 million people and 19.35% of adults over 18 were members of DT-SACCOs. The latter is the national diffusion level of the proportion of economically

active people who are members of DT-SACCOs, illustrating their attractiveness as alternative financial service providers to many Kenyans. This evaluation challenges the SACCO subsector since 80% of the economically active population is not a member of any DT-SACCO (Annual Sacco Supervision Report, 2019).

Deposit-taking SACCOs that were in the transitional period were evaluated, and those that did not fulfill the specified minimum license requirements were ordered to shut and discontinue their deposit-taking and non-deposit-taking operations. In Kenya, the supervisory and regulatory framework for Deposit Taking SACCOs has therefore completed a full cycle. The main emphasis has now switched away from transitional difficulties and toward creative efforts aimed at taking the sub-sector to new heights while consolidating and reinforcing the gains obtained during the transition period. According to the World Organization of Credit Unions, the Kenyan Sacco sub-sector remained Africa's biggest and most dynamic cooperative financial institution over the time, while improving its worldwide rating to 11th from 13th the previous year. In the year 2014, the four-year transition period established by legislation for everybody to fulfill the minimum license requirement expired (WOCCU, 2014).

The Sacco Societies Act (Cap 490B of Kenyan Laws) formed SASRA. The Sacco Societies (Deposit-Taking Sacco Business) Regulations, 2010 were effective on June 18, 2010, (Regulations, 2010). According to the Act and the 2010 Regulations, the Authority's principal functions are to issue Sacco Societies licenses to conduct deposit-taking Sacco enterprises in Kenya (often referred to as FOSA) and to manage and regulate such Sacco Societies in Kenya. DT-SACCOs in Kenya accept deposits and provide withdrawable savings accounts like banks. FOSA offers front-office services so members may make withdrawals and deposits at local banks. SASRA licenses deposit-taking SACCOs (Co-operative Societies Act, 2012).

In this context, the SACCO Societies Regulatory Authority (SASRA) is working with stakeholders in the sub-sector to develop legislative and regulatory measures targeted at boosting member trust in the Sacco sub-sector and strengthening the financial stability of Deposit Taking SACCOs. According to the Authority's second strategic plan, these are being pursued. Given the sector's importance, the momentum for prudential regulation of deposit-taking SACCOs has continued to achieve its intended objectives, as evidenced by increases in key performance indicators, overall sector stability, and increased public confidence in joining and patronizing deposit-taking SACCO financial services. The approval and implementation of progressive legislative and policy changes will only serve to amplify this momentum.

Due to the importance of this industry, SACCOs must be competently managed so they may continue to serve their members and the economy. The Kenyan cooperative movement focuses on movement building, extension service delivery, corporate governance, market access, and marketing efficiency to support long-term economic growth (International Monetary Fund, 2007).

SACCO's Prudential Regulatory Framework

Prudent laws demand the establishment of an appropriate system of incentives and standards. As a result, financial institutions must maintain control by avoiding too many risks that might negatively affect their results. The Sacco Societies Act's prudential regulatory framework for DT-SACCOs has also been achieved, as indicated by the cumulative stability and financial dependability of DT-SACCOs recorded. As the Authority approaches its ten-year anniversary in 2020, its main focus will be on catapulting DT-SACCOs to the next level of elasticity that will enable them to withstand external shocks, particularly in light of the Kenyan financial sector's dynamic and ever-changing technologically driven competition (Deng, Casu & Ferrari, 2014).

Because monitoring only affects the affiliation loan, there is a distinction between transactional and association lending. In addition, cumulative prudential ratios have become a standard tool for assessing financial stability. Financial institution regulators use prudential ratios to monitor and assess the financial soundness of their institutions. Prudent regulating ratios are critical processes for SACCO potency and buoyancy. SACCOs use data from risk management, credit, and financial reporting systems to make decisions. This requires a complex control mechanism (Cihak & Schaeck, 2010).

There are a variety of financial parameters that may be examined in order to assess a company's financial health and determine the possibility of SACCOs being successful businesses in Kenya. The broad trend of financial ratios, and whether they are improving over time, is also an important factor to evaluate. Liquidity, solvency, profitability, and operational efficiency are the four elements that must be evaluated. All four are crucial, but profitability is the most critical factor in determining a company's financial health (Gatuguta, 2014).

Prudential guidelines restrict corporations' risk-taking to protect bank stability (Yu, 2014). Some governments split banks into numerous classes to differentiate requirements; others implement specialized criteria for the submission of particular needs for a subset of prudential norms, including as disclosure requirements, liquidity ratios, significant exposure limitations, and market risk. These disparities, called regulatory-driven market fragmentation, may make prudential measures less comparable and appropriate among cooperatives. Beck (2015) Fragmented markets may deter or make it difficult for globally active banks to do certain cross-border transactions. As a consequence, the effectiveness and capability of the international financial system to encourage risk sharing among nations may suffer (Coelho, 2020).

Capital Adequacy of Sacco is a measure of capital adequacy based on the ratio between equity capital and total risk-weighted assets of a Sacco. An increase in the capital adequacy ratio by commercial banks can help increase financial stability. However, when the capital adequacy ratio is too high, banks are not efficient in using existing capital sources, thereby reducing profitability, which can cause financial instability (Ahmed & Karim, 2016). The capital adequacy ratio is used by bank managers and investors to assess a bank's level of risk in paying due debts. Banks are required to ensure a certain capital adequacy ratio prescribed by each country's regulations where the

bank is located. Adhering to regulations on capital adequacy helps the State manage the stability of the banking sector in particular and the economy in general (Białas & Solek, 2016).

Firm characteristic includes the knowledge and information capabilities and processes within a firm. The firm size influenced financial performance as part of capital structure. There are many factors affecting firm performance, however, financial leverage was the main factor (Danso, 2014). It is because proportion of borrowed capital can be used to make money for operations. The characteristic of this firm was based on debt related to the conditions that limit growth. The efficient of firm size is the value of performance based on return of assets. Firm size is difficult to the busing expansion as it provides large liquidity which may limit cash flows activities. There is no effect of firm size on financial performance but the firms expect to increase in tax liability to enhance performance (Gathogo & Ragui, 2018).

Financial Stability of DT-SACCOS

The CAMEL variables capital adequacy, asset quality, management efficiency and liquidity have been associated with monetary instability in several commercial banks, including those that have been put under receivership (Kandir, 2015). In the modern world, a Sacco's financial instability is determined by its aggregate prudential ratio, or the proportion of gross loans to non-performing loans. The most common indicator in the credit market, it acts as a warning flag for widespread Sacco bankruptcy (Cihak & Schaeck, 2010).

According to the SASRA report, no new SACCO societies were registered in 2017, and seven applications were pending at the start of the year, five of which were denied for failing to satisfy the statutory minimum licensing criteria. The other two are currently being considered. A total of 176 DT-SACCOS began operations, with two of them failing to meet their financial obligations, resulting in their licenses being cancelled. In the nation, there were still 174 DT-SACCOS in service (SASRA Supervision Annual Report, 2017).

Six SACCOs (Moi University, Nitunze, Uchongaji, Ainabkoi, and Nandi Hekima) failed to produce acceptable financial accounts for the period ending December 2017 due to IFRS non-compliance and inadequate disclosure of major concerns. Given these difficulties, the DT-SACCO industry appears in danger (SASRA Supervision Annual Report, 2017). Nonperforming loan ratio rose from 4.72 percent in 2013 to 6.14 percent in 2017. The increase in total NPLs is due to a hard year for community-based, private-sector, and government-based SACCOs. In 2017, 12 DT-SACCO societies Limited had half-year licenses. Comoco, Jitegemee, Kenya Midland, Miliki, Moi University, Nandi Hekima, Nanyuki Equator, Nitunze, Orient, Rachuonyo, Telepost, and Uchongaji are mentioned. Five SACCOs held limited licenses in 2016. This shows their inability to handle important licensing compliance concerns.

Sacco Size

Total assets are all of a Sacco's current and non-current assets, stated in Kenyan shillings, whereas total income is all of a Sacco's revenue, expressed in Kenyan shillings. The model assumes a relationship between Sacco size and capital ratios, and capital plays a key impact in the sorts of financing SACCOs. Smaller SACCOs utilize various sorts of lending technology than larger SACCOs, owing to the fact that smaller SACCOs lend to more information-sensitive borrowers who need close monitoring (Cihak & Schaeck, 2010). Furthermore, Sacco size is sometimes defined as a change in a SACCO's total assets and earnings, with a rise in one representing growth in the other (Ghafoorifard, 2014).

Because of the size of the SACCO, the barriers to effective prudential ratio compliance varied greatly, yet the research listed did not take this into account. Despite the notion that DTS are rated by asset size, this is the case. Because unemployment is on the rise, remittances are down, and there are unprecedented job losses, clients in higher education and other private organizations face greater repayment difficulties than clients in other sectors. Profits are also down, and access to liquidity from their SACCOs is becoming increasingly difficult. As a result, DTS is forced to borrow money at a high cost from commercial banks to cover short-term liquidity shortages, jeopardizing their financial stability and, at the expense of member safety deposits. The Authority has peer-grouped DT-SACCOs based on their total assets into three (3) groups in order to establish comparative risk assessments, compliance, and performance trends based on similarity of common features. These include the large-tiered DT-SACCOs, with total assets exceeding Kshs 5 billion; the medium-tiered DT-SACCOs, with total assets ranging from 1 billion to 5 billion Kshs; and the small-tiered DT-SACCOs, with total assets less than 1 billion Kshs (Sacco Supervision Report, 2019).

Statement of the Problem

SACCOs have continued to struggle financially to remain afloat in their operations. These SACCOs have been experiencing financial instability, particularly those that rely on check-off deductions to keep their finances afloat. In this respect, members wait for long time when applying for a credit facility, since they do not have enough funds therefore, they have to wait for even up to two months for their loans to be approved. Due to delayed check off remittances, the Deposit Taking Saccos have been on the point of financial collapse. Thus, they had difficulty issuing loans sought by members. Critically, this demonstrates that the funds available to them are inadequate. It is clear that these institutions' chronic inability to timely remit deductions will continue to jeopardize these SACCOs' capacity to satisfy their financial responsibilities to members, as well as their financial soundness and stability. Although the Authority has given SACCOs with short-term administrative directions to address the issue, long-term policy and legislative interventions are required to reverse the situation (SASRA Report, 2019). As of September 2019, different employer-institutions owed SACCOs a total of Kshs 3.86 billion in unpaid deductions, of which Kshs 3.42 billion was for repayments of loans and other credit facilities given to members by the SACCOs, and the rest was for non-withdrawable deposits. According to SASRA, Report (2019) DTS records regular delays

in check off remittances, causing DTS to be unable to support its clients in terms of timely loan and credit facility issuance. This situation has a detrimental impact on DTS's liquidity, core capital. Second, there has been financial mismanagement and swindling by management authorities. Without a question, this bad trend has an impact on DTS profits. As a result, certain DTS licenses have been canceled, and in other severe cases, closures have occurred. As a result of these conditions, a financial crisis has developed, and their capacity to pay their financial responsibilities to members has been significantly harmed.

General Objective of the Study

The main objective of this research was to examine the effects of the firm size and prudential regulations on financial stability of deposit taking Saccos in Nakuru County, Kenya.

Specific Objective

To examine the relationship between capital adequacy and the financial stability of deposit taking SACCOS in Nakuru County, Kenya.

Research Hypothesis

H0: There is no significant relationship between capital adequacy and the financial stability of deposit taking SACCOS in Nakuru County, Kenya.

Theoretical Review

The study was anchored on CAMEL Model and the Capital Buffer Theory respectively.

The CAMELS Model

The CAMELS model was developed by the American supervisory rating system to assess the general health of banks. In 1979, the Federal Financial Institutions gave its approval. (FFI). The abbreviations for Capital Adequacy, is the CAMEL (Kandrac, 2014). The most popular method for examining bank performance is the CAMEL, which is also a contemporary model of financial analysis and the most recent innovation in the examination of banks' financial performance. In this research, CAEL models' effects on performance are evaluated and studied. A key element of this inquiry is the bank performance evaluation model known as the CAMELS model.

The CAMELS model system approach looks at the funding sources, financial statement, cashflow, macroeconomic data and budget while also keeping an eye on how dynamic the organization is (Deyoung, 2001). Gupta (2014) examined the performance of India's state banks using a related approach. It is significant to recognize that CAMEL model is the model of choice for examining the performance of SACCOS owing to the complexity of both the AHP and DEA techniques of performance evaluation. The simplicity of the CAMELS paradigm is what gives it its potency. The five CAMELS elements are represented by various financial measurements (Dang, 2011).

Financial ratios are often used to evaluate the overall financial soundness and management prowess of a bank (Wirnkar & Tanko, 2008). The CAMELS model is probably the framework that regulators use the most often when comparing the other models to gauge bank performance (Kouser & Saba, 2012). The model analyzes financial ratios to evaluate bank performance. The financial ratios in the CAMELS model also contain ratios like return on assets (ROA), return on equity (ROE), and net interest margin (NIM). In terms of capital, asset quality, management competency and soundness, earnings, and liquidity, this model assesses the performance of banks. The likelihood of a bank failure rises if any of these requirements show signs of deficiency (Sangmi & Nazir, 2010).

Ratio-based SASRA's web-based electronic submission of returns (CAMELS) is used to dispassionately evaluate the financial reports supplied by authorized SACCOs. The financial soundness of SACCOs is assessed using the CAMELS performance rating system, with a focus on asset quality, capital adequacy operational sustainability, liquidity, and strong management practices to ensure member deposits are secure. According to SASRA, compliance in terms of timely and correctly filed returns averaged 80% in 2012, while there are problems with return accuracy since certain Sacco societies lack technological know-how and accounting procedures.

On the other hand, financial ratio analysis has shown to be a useful method for getting a glimpse of SACCOs. There is no way to determine a theoretically ideal value for any of the ratios since there is no financial theory that can explain what should be the case (or value) for any of the ratios (SASRA Supervision Report, 2013). The prudential ratios, SACCO size, and financial stability of the research were all handled by this approach. It helped to make this research simpler as a consequence.

The Capital Buffer Theory

Milne and Whalley developed the capital buffer theory in 2001. According to the capital buffer notion, a bank's risk is decreased with more capital. Capital buffers may help Saccos function better by decreasing lending rates, which boosts loan demand. According to the Buffer Theory of Capital Adequacy, Saccos may prefer to preserve a "buffer" of extra capital to reduce the danger of falling below legal capital requirements, especially if their capital adequacy ratio is fluctuating (Aruwa & Naburgi, 2014).

Gupta and Kashiramka (2020) say Saccos with appropriate capital reserves can absorb financial crises and sustain financial stability, as well as fuel company growth. The capital adequacy ratio determines liquidity and shock absorption from credit, operational, market, and payment risks. Safe and healthy banking system expansion is the route ahead for all countries' fast and diverse financial market and economic development. To do this, Saccos must be financially stable. Maintaining the appropriate capital adequacy ratio is crucial for commercial bank growth.

Saccos may develop a cushion against financial shocks by maintaining financial stability and achieving capital requirements. Following and achieving capital adequacy ratio standards supports not just the bank's effective operation but also its long-term

development and ability to function as a financial intermediary in the economy. A good capital adequacy ratio implies a bank is prepared for risks, sustaining financial stability and reassuring customers and investors (Kabir & Hassan, 2016).

The capital buffer is the surplus capital held by Saccos beyond the minimum requirement. According to the capital buffer theory, banks with significant capital buffers should preserve them, whereas Saccos with poor buffers should raise capital. Less capital absorbs negative shocks, reducing failure risk. Regulatory capital and portfolio risk may be associated. When portfolio risk rises, Saccos boost their capital cushion. The hypothesis will assist explore the link between enough capital and Nakuru SACCOs' financial stability.

Empirical Literature Review

Empirical literature has been presented in this section. The review focused on the independent variables under study. Further, it outlines the findings of previous studies on the subject matter in order to eventually expose knowledge gaps that this study was filled.

Capital Adequacy and Financial Stability

Oduora, Ngokab, and Odongoba (2017) studied African financial stability. 167 African banks participated between 2000 and 2011. NPL ratio measured financial stability. Small banks have a positive impact on financial stability, unlike large banks. The study was too broad and did not specify the countries it covered. Studying Kenyan banks, it used financial fragility index as an early warning indicator of an institution's financial health.

Kioko (2016) studied Kenya's SACCO capital regulations and described 35 SACCOs. Using descriptive statistics, we examined SACCOs' capital adequacy needs. According to the research, the legislation helped SACCOs manage credit risk, enhance public confidence, offer a safety net for members' savings, provide operating capital, expand their lending potential, and prevent insolvency. SACCOs struggle to meet capital adequacy rules. Member payments, new member acquisition, investment possibilities, and lending capacity all declined.

Research was conducted by Biwott (2020) to determine the influence of the prudential requirement for capital sufficiency on effectiveness of Kenya deposit-taking cooperatives societies. Total deposits were calculated combined all deposits, interest included, made by members as well as all other deposits. The capability of the DTS to peacefully pursue a mobilization of savings plan may be constrained by the core capital to total deposit requirements. The majority of regulatory regimes in worldwide modern financial systems still prioritize capital sufficiency. Despite the financial advantages of adhering to capital adequacy standards, their logic and effectiveness continue to be heavily contested by scholars.

Kahuthu (2016) studied the influence of Kenya's prudential legislation on DTS financial performance. He utilized linear regression and comparative studies to show how

prudential rules affect SACCOs' financial performance. After prudential regulations were enacted, he discovered that core capital requirement predicted financial performance. This confirmed Mutinda's (2016) findings that capital adequacy requirements improved financial performance.

Summary of Theory, Literature Review and Research Gaps

The CAMELS model evaluates bank performance in six key areas: liquidity, asset quality, management, earnings, and enough capital. This is fiscally responsible. Simple is CAMELS' strength. Financial ratios are CAMEL proxies. This ratio-based methodology examines licensed SACCOs' financial results. CAMELS evaluates SACCOs based on their capital sufficiency, asset quality, operational sustainability, liquidity, and good management procedures that protect member deposits.

Waweru (2018) says a SACCO's assets undermine its financial stability. Since they have more assets, large SACCOs leverage economies of scale. This study assessed SACCO assets. All reviewed literature was commercial. They haven't studied how SACCO size affects DTS's prudential ratios and financial stability in Kenya's Nakuru County. This research will discuss DT-SACCOs' challenges in Nakuru County.

Research Methodology

This study was guided by the positivist paradigm, in which, scientific processes were used to hypothesize fundamental laws and then deduce the observations to ascertain whether the hypothesis was true or false. Positivism is a quantitative method of research that adheres to a scientific approach. Also, this study was quantitative in nature, with the goal of empirically verifying the propositions by operationalizing variables in the conceptual framework to allow for measurement and then generalizing the results. The most appropriate design for this study was explanatory research design. Data on prudential ratios and financial stability of DT-SACCOs was extracted, the relevant ratios were computed and the pertinent variables were analyzed respectively.

The population size was determined by the number of licensed SACCOs as per SASRAs register. Hence, the target population of the study comprised of all licensed DTS SACCOs in Nakuru county Kenya as at December 2020. The accessible population included four DTS in Nakuru County which have their head office and origin in Nakuru County they included: Cosmopolitan SACCO, Uni-SACCO, Vision Africa SACCO and Egerton University SACCO. Since the target population was small, the study adopted the census technique to include all four DTS in Nakuru County. Census was ideal as the accessible population was manageable.

The study utilized secondary data which was collected using data collection sheet containing information that the study seeks to assess on capital adequacy and firm size on financial stability of the Sacco. Data was collected from the SACCO'S financial supervision reports for the period 2016 to 2020.

Data Collection Procedures

The research drew on data from DT-SACCOs in Kenya, which were accessed in the SASRA annual report's latest disclosed annual financial accounts. This is the statutory organization that oversees the operation of DT-SACCOs. The researcher first sought clearance from St Paul's University. The researcher further sought a permit from the National Council of Science and Technology and Innovation (NACOSTI). After the essential approval the researcher sought consent from the administration of respective DT-SACCOs whose headquarters are in Nakuru County.

To ensure completeness and integrity of data collected the researcher assured the Sacco management that the data collected was solely for academic purposes. Using the NACOSTI permit the researcher sought the permission from the management of DT-SACCO within Nakuru County. With the consent from the university, the NACOSTI permit and the consent of the management of the DT-SACCO, the researcher then proceeded to sought for financial statement to collect the data required for the study. The study utilized secondary data which was collected using data collection sheet containing information that the study seeks to assess on capital adequacy and firm size on financial stability of the Sacco.

Data Analysis

The study used panel data regression analysis model. Panel data utilizes observations that carry both cross-sectional and time series dimensions. The benefit of panel data is that it assumes that different Saccos are heterogeneous in nature, it equally considers the variability in the data, and it provides more instructive data, and hence panel data provides more efficiency than cross-sectional data methodology (Baltagi, 2001).

Both descriptive and inferential statistical techniques were used to analyze the data. The descriptive statistical techniques involved the use of mean and std. For inferential analysis both correlation and regression analysis were used in the study to identify the relationship between prudential ratios and financial performance of Saccos in Kenya. This was done with the aid of a computer program – SPSS package for windows was used. All inferential statistics were tested at $\alpha = 0.05$ significance level.

Diagnostic Tests

The study conducted various diagnostic tests. The first one was linearity test. Linearity test was done to ensure that the relationships between the independent and dependent variables were linear. The research used a scatter plot to run linearity tests to see whether the existing connection between variables was linear and the confidence intervals were not deceptive. In addition, the study conducted a normality test to determine whether data is normally distributed. Finally, the study conducted a multicollinearity test.

Linearity Test

The correlation and linear regression analyses both require a linearity test. Linearity denotes a straight-line association between predictor variables in the regression and the result variable. Scatterplot testing methods can be used to ascertain linearity. The data points are aligned in an oval shape to demonstrate linearity. Anova can also be used to ascertain the linearity test. When the Sig. value is less than the selected level of significance, an assumption is made that the connection between the dependent and independent variables is curved, and thus the independent and dependent variables have a linear connection.

Normality Test

Normality denotes that the test's distribution is normally distributed. When constructing reference intervals for variables, the assumption of normality is especially important. Normality can be assessed in two ways: graphically and numerically. Numerically, the Shapiro-Wilk test is regarded as the best option for determining data normality. The histogram and normality plot are two graphical methods.

Multicollinearity Test

When the predictor variable has a high correlation with each other, they have multicollinearity. The assumption only applies to multiple linear regressions with multiple predictor variables. The presence of multicollinearity can be ascertained using two methods: correlation coefficients (correlation matrix) and variance inflation factor (VIF) values. The predictors were strongly correlated if they were multicollinearity. When using VIF values, the values must be less than 10.00, and preferably less than 5.00. Multicollinearity was ascertained in this study by obtaining VIF values.

Findings and Discussions

The study sought to ascertain the moderating effect of size on the relationship between prudential ratios and financial stability of DT-SACCOs in Nakuru. Secondary data was retrieved from annual audited reports of four licensed DTS SACCOs with their headquarters in Nakuru Town. The data collected covered a period of five years, that is between 2016-2020 respectively.

Trend Analysis

Year	2016	2017	2018	2019	2020	Mean
Capital Adequacy	0.15814	0.176765	0.1817675	0.185705	0.1506625	.1711569

Source: Field Data, 2022

Trend Analysis of Capital Adequacy of the Four Licensed DTS SACCOs in Nakuru Town

The study further sought to establish the trend analysis of capital adequacy of the four licensed DTS SACCOs in Nakuru Town for 5 years (2016-2020). The findings revealed that in 2019, the 4 licensed DTS SACCOs in Nakuru Town had the highest capital adequacy with a mean of 0.185705 while in 2020 the four licensed DTS SACCOs in Nakuru Town had the lowest capital adequacy with a mean of 0.15814. In addition, the results indicated that between 2016 to 2019 there was a constant rise in the capital adequacy among the four licensed DTS SACCOs in Nakuru Town which implies that the four licensed DTS SACCOs in Nakuru town had adequate capital for their operations. The capacity of a financial institution to meet long-term commitments and other risks like credit risk and operational risk are both impacted by capital adequacy. By helping to insulate the bank from potential losses, it safeguards the bank's depositors and other lenders. From the standpoint of bank solvency and protection against negative events that arise as a result of liquidity risk and credit risk that financial institutions confront in the usual course of business, the capital adequacy ratio is important.

According to Hales (2016) the capital adequacy ratio is important from the point of view of solvency of the Sacco's and their protection from untoward events which arise as a result of liquidity risk as well as the credit risk that Sacco's are exposed to in the normal course of their business. The solvency of Sacco's is not a matter that can be left alone to the banking industry. This is because Sacco's have the savings of the entire economy in their accounts. Hence, if the banking system were to go bankrupt, the entire economy would collapse within no time. Also, if the savings of the common people are lost, the government will have to step in and pay the deposit insurance.

Trend Analysis of Saccos Size of the Four Licensed DTS SACCOs in Nakuru Town

The study further sought to establish trend analysis of size of the four licensed DTS SACCOs in Nakuru Town for 5 years (2016-2020). The findings revealed that in 2020 the four licensed DTS SACCOs in Nakuru Town had the biggest size in terms of asset base with a mean of 2,475,279,385 while in 2016 the four licensed DTS SACCOs in Nakuru Town had the smallest size in terms of asset base with a mean of 1,668,010,824. In addition, the results indicated that there has been a constant growth in the size of the four licensed DTS SACCOs in Nakuru Town which implies that Saccos have experience a season of growth in size in terms of assets base. According to return on assets, a company's size has a positive influence on its financial performance (ROA). A company's size can suggest that it is growing and expanding, which would make the market respond positively. The sum of a company's assets and sales determines its size or scale. The efficient of firm size is the value of performance based on return of assets. Firm size is difficult to the busing expansion as it provides large liquidity which may limit cash flows activities. There is no effect of firm size on financial performance but the firms expect to increase in tax liability to enhance performance (Gathogo & Ragui, 2018).

Trend Analysis of ROA of the Four Licensed DTS SACCOs in Nakuru Town

The study further sought to establish trend analysis of return on Asset of the four licensed DTS SACCOs in Nakuru Town for the 5 years (2016-2020). The findings revealed that in 2017 the four licensed DTS SACCOs in Nakuru Town had the highest return on equity with a mean of 0.864823 while in 2020 the four licensed DTS SACCOs in Nakuru Town had the lowest return on equity with a mean of 0.652898. Return on Investment (ROI) is one of the most crucial financial metrics for stock investors seeking for high value companies (ROI). It's a straightforward and practical measure of how well a business can generate profits from the capital it invests. One of the most important fundamental statistics that investors take into account is the return on equity. It's a straightforward way to gauge how well a company's management controls the funding it gets from investors. The return on Asset (ROA) reveals if management is steadily raising the company's worth.

According to Majnoni, (2015) ROA is considered a gauge of a corporation's profitability and how efficient it is in generating profits. The higher the ROA, the more efficient a company's management is at generating income and growth from its equity

financing. Return on equity can be a very useful financial metric to take into account when analyzing a stock. When used correctly, it can help investors better understand the financial health of the company.

Diagnostic Tests

Test of Multicollinearity

The research conducted multicollinearity test of the data. If there exists an exact or near exact association between more or two of the predictor variables, then multicollinearity is said to occur.

Test of Multicollinearity

Model		Collinearity Statistics	
		Tolerance	VIF
1	Capital adequacy	.463	2.160

a. Predicted Variable: Financial stability of deposit taking SACCOs

Source: Field Data, 2022

The variance inflation factors (VIF) and tolerance values were calculated, with values of VIF less than 10 and tolerance more than 0.1 indicating a lack of multicollinearity. There was no multicollinearity since the VIF values in table 4.13 were less than 10, but the tolerance factors were higher than 0.1.

Test of Normality of Data

The research aspired to test the normality of the data. The findings are displayed in the table below.

Tests of Normality

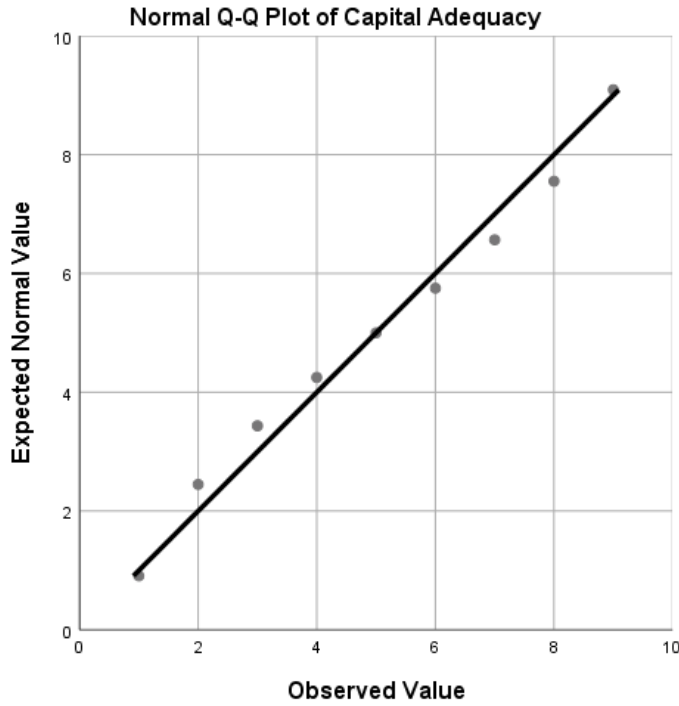
Tests of Normality	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	df	Sig.
Capital adequacy	.293	55	.000	.788	19	.000

a. Significance Correction

Source: Field Data, 2022

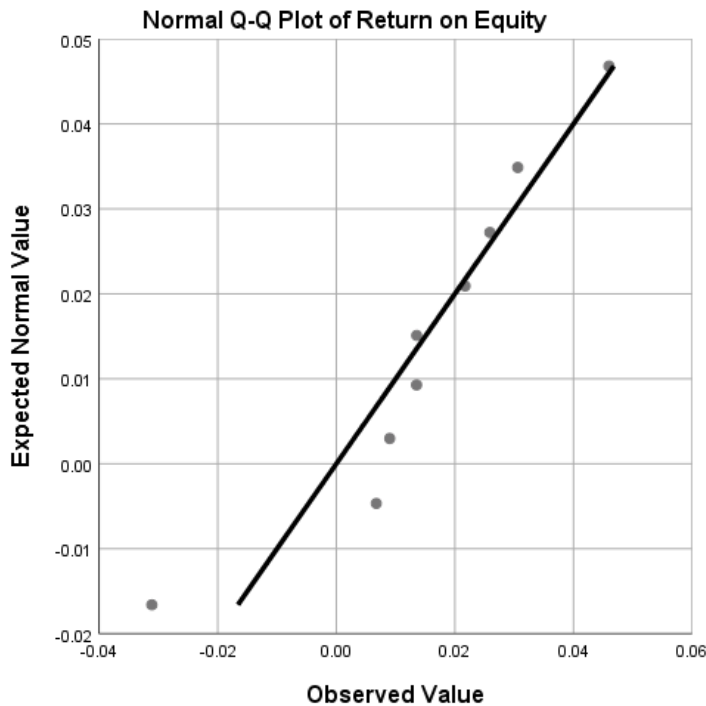
The results are consistent with Shapiro-Wilk and Kolmogorov-Smirnov tests that produced 0.000 values or less than 0.05. The research supports Ghasemi and Zahediasl's (2012) finding that, for samples bigger than 30, normality may be assumed, even though Shapiro or Kolmogorov results imply otherwise.

Linearity test



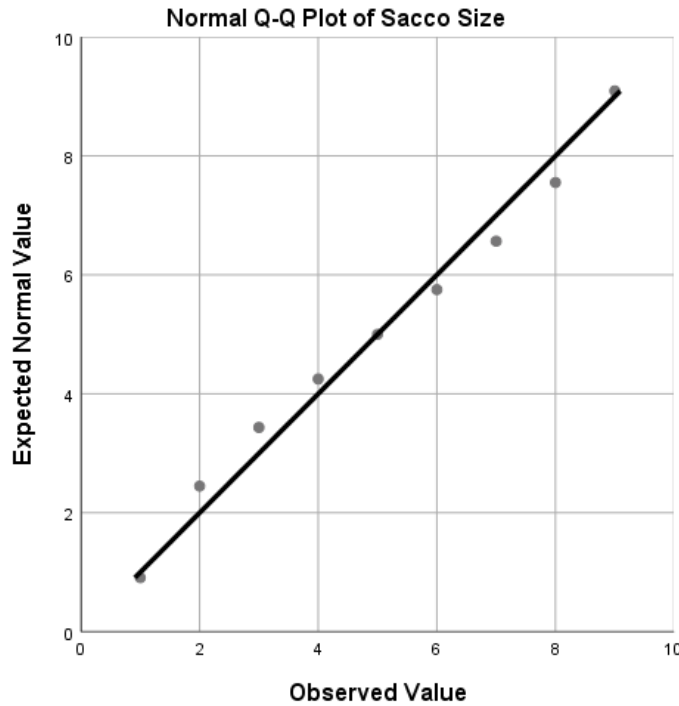
Normality q-q Plot of Capital Adequacy

The results show that the Q-Q-normal graphic forms a normally distributed cluster around the horizontal line. The capital adequacy shows a little slant away from the straight line. This suggests that the data were collected according to a normal distribution.



Normal q-q Plot of Financial Stability of Deposit Taking SACCOs

In the figure above, the points in the Q-Q-normal plot cluster around the horizontal line. The financial stability of deposit taking SACCOs is a long straight line. This indicates normal distribution.



Normal q-q Plot of Sacco Size

In the figure above, the points in the Q-Q-normal plot cluster around the horizontal line. The Sacco size is a long straight line. This indicates normal distribution

Inferential Statistics

The study looked at the relationship between deposit-taking SACCOs' adequate capital and their financial soundness. According to the findings, $r=0.382$ and $p=0.05$, respectively. The results showed a moderate relationship between deposit taking SACCOs' capital adequacy and financial stability. The findings show that having enough capital enhances the financial stability of deposit-taking SACCOs. The findings are in line with those of Kioko (2016), who found that increasing the capital adequacy ratio stabilizes financial indicators and has a positive impact on them, increasing profitability and return on capital invested and, as a result, achieving efficiency in SACCO performance. The effectiveness and stability of the financial institution are safeguarded by capital adequacy ratios, which reduce the possibility of the SACCO going bankrupt. Generally speaking, a financial institution with a high capital adequacy ratio is regarded as secure and able to fulfill its financial obligations. The study's findings concur with

those of Barus, Muturi, Kibati, and Koima (2017), who examined the relationship between capital adequacy and financial stability among Kenyan SACCOs

Hypothesis Testing

The study sought to test the hypothesis that: H_{01} : There is no significant relationship between capital adequacy and the financial stability of deposit taking SACCOS in Nakuru. From the findings the p-value was less the 0.05 significant level. Therefore, based on the rule of significance, the study rejects the null hypothesis (H_{01}) and concluded that capital adequacy has significant relationship with financial stability of deposit taking SACCOS in Nakuru. The results are in line with those of Osemwegie (2016), who found that raising the capital adequacy ratio improves SACCO performance by increasing profitability and return on invested capital, stabilizing financial indicators, and having a positive impact on them. Kioko (2016) also notes that SACCOs have benefited greatly from the regulations in a number of other ways, such as credit risk management, increased public confidence, providing a safety net for members' deposits, provision of operating capital, increased lending capacity, laying the groundwork for future growth, and avoiding insolvency. SACCOs must overcome a number of challenges in order to adhere to capital adequacy standards. Reduced lending capacity, recruitment of new members, fewer investment options, and reduced payouts on members' money were some of them.

Summary for Hypothesis Testing

Hypothesis	Independent Variable	Dependent Variable	Results (t-value, p-value)	Verdict
H_{01}	Capital Adequacy	Financial stability of deposit taking SACCOs	$p < .05$.	Reject null hypothesis

Source: Field Data (2022)

Summary, Conclusions and Recommendations

Capital Adequacy and the Financial Stability

According to the data, the four licensed DTS SACCOs in Nakuru Town had the greatest capital adequacy in 2019, with a mean of 0.185705, while the four licensed DTS SACCOs in Nakuru Town had the lowest capital adequacy in 2020, with a mean of 0.15814. Furthermore, the findings revealed that the capital adequacy of the four licensed DTS SACCOs in Nakuru Town increased steadily from 2016 to 2019, implying that the four licensed DTS SACCOs in Nakuru Town had appropriate capital for their operations. Capital adequacy influences a bank's capacity to meet long-term commitments and manage credit and operational risks. The findings confirm Oduora, Ngokab, and Odongoba's (2017) thesis that, higher financial institution capital worsens financial instability in Africa, save for major banks. By protecting banks against possible losses, it protects depositors and lenders.

Additionally, the findings demonstrated a favorable association between deposit-taking SACCOs' capital adequacy and financial stability. Kioko (2016) observed that boosting the capital adequacy ratio stabilizes financial indicators and has a favorable influence on them, enhancing profitability and return on capital invested and, as a result, SACCO performance. Capital adequacy ratios protect the SACCO's efficacy and stability against bankruptcy. The capital adequacy ratio is critical for bank solvency and protection against unfavorable events caused by liquidity risk and credit risk.

Conclusions

The research arrived at the conclusions based on the study's findings. The conclusions were likewise founded on a specified goal. According to the finding, capital sufficiency has a statistically significant association with deposit-taking SACCOs' financial stability in Nakuru. Besides, increasing the capital adequacy ratio stabilizes financial indicators and has a beneficial influence on them, resulting in increased profitability and return on capital invested, resulting in efficiency in SACCO performance.

Furthermore, capital sufficiency is impacted by the liquidity ratio, company size, net working capital, near liquidity, short-term debt, investment, internationalization of the organization, and industry. This implies that the Saccos in Nakuru Town will have financial stability as a consequence of sound capital adequacy management.

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