

**INFLUENCE OF FINANCIAL STRUCTURE ON PERFORMANCE OF DEPOSIT  
TAKING SAVINGS AND CREDIT COOPERATIVE SOCIETIES IN NYANDARUA  
COUNTY- KENYA**

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Requirement for the Conferment of the Degree of Master of Business Administration of  
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## **DECLARATION AND RECOMMENDATION**

### **Declaration**

I, the undersigned, declare that this Research Project is my original work and has not been submitted to any other college, institution or university.

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## ABSTRACT

Savings and credit cooperatives (SACCOs) contribute significantly to Kenya's financial stability by offering vital services like loans and financial services. However, a lot of SACCOs face financial difficulties, and they therefore look for other sources of income. Globalisation and the liberalisation of financial markets are altering the landscape for these cooperatives, expanding the range and scope of available funding sources and highlighting the significance of a sound financial structure. This study's primary goal was to ascertain how financial structure affected the efficiency of deposit-taking SACCOs in Nyandarua County between 2013 and 2022. In addition, the study sought to determine the impact of company size on the link between financial structure and the performance of deposit-taking savings and credit cooperative societies in Nyandarua County, and to determine the effects of equity, debt, and liquidity levels on financial performance. The theories of agency, pecking order, and risk-return trade-off served as the foundation for the research. A descriptive analysis was carried out with an emphasis on Nyandarua County's eight SACCOs that are affiliated to SASRA. Eight SACCOs were selected for this study using the census approach, and data was collected utilizing data collection sheets from the SACCOs' audited annual financial accounts. The study investigated data properties over ten years (2013-2022) using descriptive statistics such as mean, standard deviation, and frequency. Additionally, tables with model results, and regression analysis, were used to show the inferential statistics. The study revealed no significant correlation between equity ratio and performance in cooperative societies in Nyandarua County, Kenya, with  $P > |t| = 0.937 > 0.05$  levels much higher than conventional significance. Debt level had a negative impact of  $0.680 > 0.05$  and a t-statistic of  $-0.43$ , indicating a negative and statistically insignificant relationship between debt level and performance. Liquidity level had a significant impact of a t-statistic of  $-6.32$  and a  $P > |t|$  value of  $0.000$  credit cooperative societies' performance and deposit-taking savings. High p-values for the interaction terms (Size\* Equity:  $p=0.852$ ; Size\*Debt:  $p=0.600$ ; Size\*Liquidity:  $p=0.696$ ) were obtained from the moderating effect of size. This suggests that the impact of size on the financial structure components (equity, debt, and liquidity) on performance is insignificant and constant across firm sizes. The study emphasizes the significant negative effect of liquidity level on SACCO performance, emphasizing the need for healthy liquidity, cash flow management, sufficient reserves, and avoiding over-lending, while highlighting the weak inverse relationship with performance. The study found a weak inverse insignificant relationship between debt level and performance, suggesting the need for strategic debt management despite the insignificant impact of debt level. The study suggests that SACCOs should reconsider their performance improvement strategies, focusing on operational efficiency, member satisfaction, product innovation, risk management, and governance structures. SACCOs of all sizes can benefit from similar approaches to manage equity, debt, and liquidity.

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## LIST OF ABBREVIATIONS

<b>ANOVA</b>	Analysis of Variance
<b>CFI</b>	Corporate Finance Institute
<b>DTS</b>	Deposit Taking SACCOS
<b>FGLS</b>	Feasible Generalized Least Square
<b>FOSA</b>	Front Office Service Activity
<b>GDP</b>	Gross Domestic Product
<b>ICA</b>	International Co-operative Alliance
<b>ICPAK</b>	Institute of Certified Public Accountants of Kenya
<b>KPMG</b>	Klynveld Peat Marwick Goerdeler
<b>NACOSTI</b>	National Commission for Science, Technology and Innovation
<b>NSE</b>	Nairobi Securities Exchange
<b>ROA</b>	Return on Asset
<b>ROE</b>	Return on Equity
<b>SACCOs</b>	Savings and Credit Cooperative Societies
<b>SASRA</b>	Sacco Societies Regulatory Authority
<b>SMEs</b>	Small and Medium Enterprises
<b>STATA</b>	Statistics and data
<b>VIF</b>	Variance Inflation Factor
<b>WOCCU</b>	World Council of Credit Unions

## OPERATIONAL DEFINITION OF TERMS

<b>Debt Level</b>	A measure of the levels of outstanding debt owed by the SACCOs.
<b>Deposit Taking SACCOs</b>	They are SACCOs that engage in savings and credit activities, as well as process daily deposits and withdrawals over the counter (Government of Kenya, 2008).
<b>Equity Level</b>	The SACCO membership registration that requires permanent contributions, and which become part of the SACCO's capital.
<b>Financial Structure</b>	Funding SACCO's long-term and short-term working capital needs involves considering the origins of capital and the percentage of funding derived from short-term obligations, short-term loans, long-term loans, and equity.
<b>Liquidity Level</b>	SACCOs can easily convert cash from their assets. Cash is the most easily accessible asset for a business because it can be used immediately.
<b>Performance</b>	Effectively managing and utilizing the limited resources to generate revenue for the business. How SACCOs are able to invest the available finance and returns and growth of their business. It is measured by profitability levels in different time periods.
<b>Savings and Credit Cooperative (SACCO)</b>	Members have ownership and control over a non-financial institution. The main aim is to provide credit with competitive interest rates, as well as deliver additional financial services to its members.

# CHAPTER ONE

## INTRODUCTION

### 1.1 Background to the Study

The performance of Deposit-Taking Savings and Credit Cooperative Societies (DT-SACCOs) in many emerging nations has come under increased scrutiny due to ongoing issues that limit their ability to effectively serve their members and promote financial inclusion. These issues frequently appear as low profitability, liquidity difficulties, high non-performing loan ratios, and insufficient capital adequacy, all of which have an influence on operational efficiency and long-term viability (World Bank, 2024; International Monetary Fund, 2023). For example, a 2023 report by the World Council of Credit Unions (WOCCU) found that a significant number of SACCOs in Sub-Saharan Africa struggle with asset quality and with non-performing loans exceeding 10% in some regions, threatening their financial stability and ability to disburse new loans.

Furthermore, the Cooperative Alliance of Kenya (CAK) noted in its 2022 annual report that many SACCOs face difficulties in mobilizing sufficient deposits to meet their lending demands, leading to reliance on external borrowing or limiting their outreach to potential members (Cooperative Alliance of Kenya, 2022). These performance issues are often intertwined with the internal financial structure of SACCOs, including their capital composition, debt-to-equity ratios, and asset allocation strategies, which dictate their risk-bearing capacity and operational flexibility. The challenges underscore the critical need to investigate how different elements of financial structure influence the overall performance of these vital financial intermediaries (SASRA, 2024).

The financial structure of DT-SACCOs, encompassing aspects such as the mix of debt and equity, the composition of their loan portfolios, and their investment in various assets, plays a pivotal role in determining their financial health and operational outcomes (FAO, 2022). For example, a study published by the International Labour Organization (ILO) in 2021 on cooperative financial institutions emphasized that an optimal capital structure is crucial for SACCOs to absorb unexpected losses and maintain member confidence, directly affecting their ability to attract and retain deposits (ILO, 2021). Similarly, the regulatory frameworks

governing SACCOs, such as those enforced by the SACCO Societies Regulatory Authority (SASRA) in Kenya, often impose specific capital adequacy requirements and prudential guidelines that directly influence their financial structure and, consequently, their performance (SASRA, 2024). The interplay between these structural elements and performance indicators like return on assets (ROA), return on equity (ROE), and operational self-sufficiency is complex and warrants detailed empirical investigation. Understanding this relationship is essential for policymakers, regulators, and SACCO management to formulate effective strategies that enhance the resilience and growth of these member-owned financial institutions, ultimately contributing to broader economic development and poverty reduction (ADB, 2023).

The International Cooperative Alliance Africa (2020) reported experiencing exponential growth in global membership, surpassing a remarkable milestone of over one billion individuals engaged in cooperative enterprises. Among these members, more than 250 million are actively involved in cooperatives either as earners of income or as dedicated employees, symbolizing a vast network of mutual support and economic empowerment. In addition, recent research conducted by the International Cooperative Alliance (2020) brought to light the substantial economic influence wielded by the world's top 300 cooperatives, boasting an impressive collective turnover of \$2.5 trillion. This staggering figure not only showcases the financial robustness of these cooperatives but also underscores their substantial impact on the global economy, positioning them as a force to be reckoned with on an international scale.

Savings and Credit Cooperatives (SACCOs) have a rich history that can be traced back to the cooperative movement, originating from the collective efforts of individuals facing common challenges (Ofei, 2002). The impact of this cooperative spirit is truly global, uniting a staggering one billion members worldwide, with a significant portion, totalling 240 million individuals, actively participating in the vibrant SACCO sub-sector. Further evidence of this cooperative spirit can be found in the fact that there are more than 60,500 credit unions in 109 nations on six continents, according to data from Worldwide Credit Unions in 2015. The SACCO concept embodies the power of community-driven financial initiatives, illustrating how pooling resources and fostering mutual support can lead to sustainable economic growth and resilience.

For centuries, cooperation has been deeply ingrained in the cultural fabric of Africa, as communities across the continent have historically united to engage in shared endeavours such as hunting for sustenance, cultivating fertile lands for agriculture, and constructing communal dwellings to provide shelter and security (Sang, 2011). This spirit of cooperation has not only been a practicality but also a foundational aspect of social cohesion and collective progress among African societies. The present-day cooperative movement in Africa continues to uphold these time-honoured values, with a modern emphasis on key principles that underpin its operation and purpose (International Co-operative Alliance Africa, 2020). These fundamental principles include promoting voluntary membership, fostering democratic decision-making processes within cooperatives, encouraging active economic involvement and benefit-sharing among members, as well as upholding the principles of organizational autonomy and self-reliance. SACCOs, according to Olando, Mbewa, and Jagongo (2012) (quoted in Branch, 2005), can reach customers in undeveloped or rural areas where banks are not attractive. SACCOs have consequently become firmly established in the financial sectors of numerous nations (Njeru, Memba, & Tirimba, 2015). Between 1908 and the 1930s, European settlers established the Lumbwa Cooperative Society, Kenya's first cooperative. Later, Africans were allowed to form cooperatives (Ouma, 2011). Reason for the establishment of these cooperatives was to promote savings and financial independence among Kenyans.

The Cooperative Societies Act of 1966, an essential legislation in Kenya, was instituted to regulate and supervise the establishment, registration, and administration of cooperative societies within the country. Over time, the SACCOs Act underwent several modifications and revisions that greatly expanded the scope of these societies. These revisions expanded their jurisdiction to encompass not only conventional cooperative forms but also different types of financial organizations such as savings and credit societies. These amendments also paved the way for the incorporation of non-financial cooperative models, such as marketing cooperatives that focus on enhancing agricultural produce distribution channels, investment cooperatives that facilitate sustainable financial growth, and transport cooperatives that streamline transportation services (Republic of Kenya, 2004). The progressive modifications enacted under the Co-operative Societies Act have been instrumental in fostering a diverse and robust cooperative sector in Kenya. During 1990s, the Kenyan economy faced tough times marked by high interest

rates, prompting a rise in the prominence of financial cooperatives, particularly SACCOs. Banks demanded substantial minimum balances for account opening, compelling middle- and low-income earners to seek refuge in SACCOs. Consequently, SACCOs introduced front office service activities (FOSA) and ventured into banking operations.

The SACCO Societies Act of 2008 distinguishes between two types of SACCOs in Kenya's financial landscape: deposit-taking (DTS) and non-deposit-taking (NDTS). In terms of a nation's economic development, a SACCO's primary duty is to accept deposits, which act as essential financial middlemen for their members. On the other hand, non-deposit-taking SACCOs primarily concentrate on harnessing non-withdrawable funds to facilitate lending activities among their members (Republic of Kenya, 2012). The Sacco Societies Regulatory Authority's 2017 report revealed that, as of December 31, 2017, Kenya had 177 licensed SACCOs. This statistic underscores the integral role that DTS play in the financial sector of the country, emphasizing its significant presence in catering to the diverse financial needs of the populace (SASRA, 2017).

The 2016 SASRA report highlighted a decline in common-bond structures, leading to a significant increase in the availability of DTSs. Traditionally, DTSs were established around specific bond lineages with strict eligibility requirements based on professions such as banking, farming, education, or law enforcement. However, there is now a noticeable shift towards a more inclusive approach, with many SACCOs extending membership opportunities to all adult citizens regardless of their occupation or background. This evolution reflects a broader trend toward democratizing access to financial services, supported by technological advancements such as mobile platforms, online payment portals, and the issuance of ATM cards, which have enhanced convenience and accessibility for SACCO members (Ratemo, 2015).

The DTSs have demonstrated an enhancement in performance over the years, with key performance indicators such as assets, capital reserves, deposits, loans, and membership showing positive trends. The number of members of DTSs increased significantly between 2013 and 2015, per an SASRA report from 2016. The membership surged impressively from 2,612,250 in 2013 to 3,145,565 in 2015, indicating a substantial growth rate of 20 percent. This uptrend in membership was paralleled by a corresponding rise in deposits within the DTSs.

Specifically, deposits climbed significantly, starting at Kshs. 172 billion in 2013 and then escalating to Kshs 205 billion in 2014, eventually reaching Kshs 237 billion in 2015. The deposits showcased an average yearly growth rate of 17 percent over this period. Similarly, the assets of the DTSs also demonstrated an upward trend, increasing to Kshs 251 billion in 2013; Kshs 301 billion in 2014, and Kshs 342 billion in 2015. This consistent growth in assets underlined the financial stability and expansion of the DTSs within the specified timeframe. Examining the loan portfolio over this time span shows a reasonable average annual growth rate of 13.4%, demonstrating the growing financial services and activities provided by the DTSs. Furthermore, the capital value of the DTSs experienced remarkable growth, recording a substantial 40.8 percent increase per annum. These figures, which SASRA highlighted in their reports from 2014 and 2015, highlight the remarkable growth and development that DT-SACCOs experienced between 2013 and 2015.

These upward trends clearly accentuate the crucial role played by these financial institutions within the Kenyan economy. Their ability to mobilize savings and offer credit services to the population has positioned them as the foremost cooperative financial institutions on the African continent (Ratemo, 2015). Under the ambitious Vision 2030 economic policy blueprint, the DTS subsector has demonstrated its significance by significantly impacting GDP. According to data from Kenya's Central Bank, in 2013, 2014, and 2015, the DTS subsector contributed significantly to GDP, contributing 8.8%, 5.63 percent, and 5.59 percent, respectively. This data clearly outlines the growth trajectory and importance of these institutions in driving economic progress and financial inclusion within Kenya. The financial sector in Kenya saw a decline in GDP due to high interest rates and limited opportunities for growth. The SACCOs for Milliki, Sukari, Hekima, and Nandi have all been de-registered. To address these issues, managers are advising a strategic approach to balance debt and equity, leveraging internal and external funding sources for research, development, asset procurement, and operational expansion.

SACCOs, have been actively seeking various external funding sources to effectively carry out their mandated activities. This external financing mainly refers to the total amount of debt that comes from outside sources in a SACCO (Saleemi, 2009). A variety of external financing sources are available to Kenya, including donor organizations, commercial banks, the World

Bank, the International Monetary Fund, the Kenya National Union of Cooperatives, Credit Associations, and cooperative organizations like the Cooperative Insurance Company, the Africa Confederation of Cooperatives and Credit, and the Kenya National Union of Cooperatives and Credit Association (Ondiek, Okioga, Okwena, & Onsase, 2016). Moreover, it is imperative to note that in addition to external funding sources, SACCOs rely on non-withdrawable deposits contributed by their members to further contribute to the debt managed by Deposit-Taking SACCOs (ICPAK, 2016). The mutually beneficial relationship between member deposits and outside funding highlights SACCO's operational and financial resilience. They therefore support their overarching goal, which is to support and assist members with financial needs while promoting local economic growth in the country.

In the SACCO sector in Kenya, loans and advances make up a significant portion of DTSS' assets. They play a crucial role in the total debt held by deposit-taking SACCO, along with members' non-withdrawable deposits. As such, it is critical to regularly and attentively observe DTSS' financial stability and performance in the country. SACCO Societies Act of 2008, Section 34, lays out strict regulatory restrictions and prohibits DTSS from lending or advancing more money to members. Additionally, DTSS are prohibited from providing credit or loans that are secured by the SACCO Society's core capital. Adherence to these regulations is critical for responsible lending practices and the overall financial sustainability and integrity of DTSS, safeguarding the interests of SACCO members and the stability of deposit-taking SACCO institutions in the Kenyan financial services industry (ICPAK, 2016).

SASRA (2016) reports that deposit-taking cooperatives (DTSS) maintained varying liquidity ratios over the years: 7.76% in 2013, 47.32% in 2014, and a significant increase to 55.9% in 2015. This upward trend suggests improved liquidity management practices, ensuring financial stability and compliance. Unlike traditional banks, DTSS provide eligible members with prompt access to loans, enhancing financial inclusivity and well-being. The stringent liquidity requirements and accessible loans highlight the balance between financial stability and service facilitation, safeguarding depositors' interests and fostering a more inclusive financial ecosystem for Sacco society members (SASRA, 2016).

Performance is the degree to which a business makes profitable use of its resources. Financial ratios and other comprehensive financial analysis techniques, including common size analysis, can be used to evaluate it (Fabozzi & Peterson, 2003). Return on assets is a statistic used by management and financial analysts to evaluate how well a firm uses its resources to create income. It is also used by investors to evaluate a company's operational efficiency. More than five percent is regarded as a strong return on assets (ROA), while more than twenty percent is regarded as outstanding. Cases where there is an increase in ROA indicates that the organization is adept at converting its assets into earnings, demonstrating solid financial management and operational performance. Investors and other stakeholders can learn a great deal about the company's performance and financial health by tracking the ROA trend over time. Conversely, a decreasing return on assets (ROA) indicates that a company is probably facing issues as a result of poor investments and overspending. Nonetheless, it is never appropriate to compare ROAs across industries (CFI, 2022).

Inadequate management of capital costs within a company can lead to severe financial challenges, potentially pushing the organization toward insolvency. This mismanagement has been shown by several Savings and Credit Cooperative Organizations (SACCOs), including Ufundi, Transcom, Nest, Green Hills (formerly Chebosobon), and Maono Daima (Domestic News, May 2016). These incidents serve as warning tales, showing how important prudent financial planning is to maintaining the viability of financial institutions. Moreover, by 2020, the repercussions of liquidity issues became even more pronounced, prompting the SACCO Societies Regulatory Authority (SASRA) to take decisive actions. This included the revocation of licenses of some SACCOs like Nandi, Hekima, Miliki Sacco, and Sukari SACCO, effectively preventing them from accepting further deposits.

The year 2022 saw SASRA deregistering four SACCOs, including Comoco in Nairobi with assets amounting to Shs 650 million and deposits of Shs 350 million, Nyamira Tea (Kshs 210 million), Nyanyuki Equator (Shs 120 million), and Mombasa's Uchongaji (Kshs 40 million) due to significant liquidity problems and corporate governance challenges. Further, it is worth noting that not only were SACCOs such as Ekeza, Good Life, Moi University, and Nitunze deregistered due to liquidity challenges but a wider ramifications of their de-registration

highlighted how important performance and financial structure are to the SACCO industry. Thus, the goal of this study was to look at the link between the financial structure and financial performance of deposit-taking SACCOs in Nyandarua County, Kenya.

## **1.2 Statement of the Problem**

Globally, cooperatives are vital because they efficiently combine the financial resources needed for wealth creation and investment opportunities. The Kenya Vision 2030 strategic plan specifically names these cooperatives as enablers of economic growth and development, highlighting their significance as key players in the growth of the economy. These cooperatives' goals are to combine savings and provide loans to their members.

However, numerous cooperatives encounter challenges in issuing loans because of liquidity constraints, resulting in them falling short of achieving their intended goals. As a result, members from these SACCOs have sought the financial services from their competitors, the commercial banks, Building Societies and Housing Finance Corporations who sometimes offer unsecured loans to them. The return on assets of most SACCOs in Kenya is less than 5 percent, indicating poor performance that results in deregistration or insolvency. This indicates that financing practices have a connection to the underperformance of SACCOs in Kenya. Notable examples of this include Ufundi Co-operative SACCO, Transcom Co-Operative SACCO, Nest Sacco and Green Hills Sacco. The question of whether putting in place an ideal financial structure could be crucial to solving the problem at hand has been met with conflicting answers from numerous researchers. This discrepancy prompted this study, which investigated the link between financial structure and financial performance of deposit-taking Savings and Credit Cooperative Organisations (SACCOs) in Nyandarua County.

## **1.3 General Objective**

The purpose of this research was to examine the impact of financial structure on the financial performance of deposit-taking savings and credit cooperatives in Nyandarua County, Kenya. A thorough examination of the financial structure was carried out in order to accomplish this aim.

### **1.3.1 Specific Objectives**

The goals specific to the study were to;

- 1) Examine the influence of equity level on performance of cooperative societies in Kenya's Nyandarua County that takes deposits for credit and savings.
- 2) Analyze the influence of debt level on performance of deposit-taking savings and credit cooperative societies' in Kenya's Nyandarua County.
- 3) Examine the influence liquidity level on performance of credit cooperative societies and deposit-taking savings in Kenya's Nyandarua County.
- 4) Assess the moderating effects of firm size on the relationship between financial structure and the performance of deposit-taking savings and credit cooperatives in Nyandarua County, Kenya.

#### **1.4 Research Hypotheses**

The following research hypotheses were examined in this study:

- H<sub>01</sub>: There is no statistically significant effect of equity level on performance of deposit-taking savings and credit cooperative societies' in Nyandarua County, Kenya.
- H<sub>02</sub>: There is no statistically significant effect of Debt levels on performance of deposit-taking savings and credit cooperative societies' in Nyandarua County, Kenya.
- H<sub>03</sub>: There is no statistically significant effect of liquidity levels on performance of deposit-taking savings and credit cooperative societies' in Nyandarua County, Kenya.
- H<sub>04</sub>: There is no statistically significant moderating effect of size on the relationship between financial structure and performance of deposit-taking savings and credit cooperative societies in Nyandarua County, Kenya.

#### **1.5 Significance of the Study**

The management of SACCO will gain important knowledge on how financial arrangements impact SACCO's financial results. This can help management decide which financial structure will optimize SACCO's performance. The amount of financial literature now accessible on the activities and financial structure of DT-SACCOs in Kenya may be significantly and permanently increased by this study. The insights collected from this research endeavour are poised not just to enlighten the current discourse but also to seed a foundation for forthcoming investigations in this domain. Such future studies stand to provide invaluable insights for scholars and researchers operating within the credit and financial sectors, effectively propelling the sector forward. As a consequence, by enhancing the existing data in repositories, the

findings of this study can greatly benefit professional practice as well as academic research. In addition, this information will be useful to government policymakers and regulators, including the SACCO Societies Regulatory Authority (SASRA), in formulating effective regulatory policies.

## **1.6 Scope of the Study**

During the period from August 2023 to March 2024, a comprehensive study was carried out in Nyandarua District, specifically targeting selected SACCOs that are registered with SASRA. Secondary data from the audited reports and financial statements for the years 2013 through 2022 were used in this study. In Kenya's financial landscape, there exist two distinct categories of savings and credit cooperatives: SACCOs that have the authorization to accept deposits and those that are not permitted to do so. The licensing and regulatory framework for all SACCO Societies in Kenya is outlined in the SACCOs Act of 2008. These rules protect interests of SACCO system members and depositors while preserving the integrity and stability of the financial sector. The diligent oversight provided by SASRA plays a pivotal role in upholding transparency, accountability, and trustworthiness within the SACCO sector. As of December 2022, there were 176 SASRA-licensed SACCOs, with 4 of them operating in Nyandarua County. These four SACCOs include; Tower SACCO, Viktas SACCO, Nyala SACCO and Muki SACCO. There are other four SACCOs that operate within Nyandarua County including Nyahururu town but headquartered elsewhere. These SACCOs include; Taifa SACCO, Unison SACCO, Wananchi SACCO and Supa SACCO. This study confined itself with the eight SACCOs operating under umbrella of SASRA in Nyandarua County and Nyahururu town. Audited accounts and financial statements for ten years (2013 to 2022) were analyzed as this was within the period that the SACCOs were under the regulatory body. Furthermore, most of these SACCOs rebranded and increased their membership scope in order to serve members from diverse profession to pool more financial resources. The eight SACCOs are deposit taking SACCOs which are regulated by SASRA and are audited by credible auditors who are members of ICPAK and they therefore gave credible information.

Numerous important variables were used in the study on how financial structure affected the performance of Deposit Taking Savings and Credit Cooperative Societies (DTSACCOs) in Nyandarua County. Business size served as a moderator for the independent variables, which

comprised equity, debt, and liquidity levels. Return on Assets (ROA), a performance indicator, was the dependent variable. The purpose of this study was to look at how resource availability and financial leverage affect cooperative societies' profitability.

### **1.7 Limitations**

The study on the influence of financial structure on the performance of deposit-taking savings and credit cooperative societies (DT-SACCOs) in Nyandarua County faced some limitations. One significant limitation was the potential for data availability and reliability issues. Financial data from SACCOs, especially historical data, was not readily accessible. Furthermore, the study's focus on Nyandarua County meant that its findings may not be generalizable to other regions or to SACCOs with different operational contexts, limiting the external validity of the results. The study was limited to specific financial ratios and performance relationships between financial structure and performance and proving a direct causal link can be challenging.

### **1.8 Delimitations**

The delimitations of this study defined its scope and boundaries. The study was delimited to deposit-taking SACCOs operating specifically within Nyandarua County, Kenya. This geographical and institutional focus narrows the scope, allowing for a more in-depth analysis of the chosen entities while intentionally excluding non-deposit-taking SACCOs or those in other counties. The timeframe for data collection will also be delimited, for instance, to a specific period such as the last ten years, to ensure the relevance and comparability of financial data. The study focused on specific aspects of financial structure, such as capital adequacy, asset quality, and liquidity, and their impact on key performance indicators like profitability, efficiency, and outreach, thereby excluding other potential influencing factors not directly related to financial structure. The research methodology delimited to quantitative analysis of secondary financial data, excluding qualitative data collection methods like interviews or surveys, to maintain a focused analytical approach.

## CHAPTER TWO

### LITERATURE REVIEW

#### 2.1 Introduction

This part offers a theoretical framework that served as the study's guide in addition to a critical evaluation of academic and empirical research. The three primary theories utilized to analyze the research issue are the agency theory, the pecking theory, and the risk-return trade-off theory. The empirical review presents relevant findings from previous research on the topic. The study is presented using a conceptual framework, or graphical representation.

#### 2.2 Theoretical Review of Literature

Three main ideas were looked at in this part to analyse the relationships. The theory of trade-offs between investment risk and potential return examines this process. When there are conflicting interests in a corporate setting, the agency cost theory addresses the problems that arise. The pecking order theory, finally, describes how businesses rank their funding sources.

##### 2.2.1 Risk-Return Trade-Off Theory

The Risk-Return Trade-Off Theory was formally proposed by Harry Markowitz in 1952 with his seminal work on Modern Portfolio Theory (MPT) (Markowitz, 1952). The theory essentially states that investors and organizations must accept a higher level of risk to achieve higher expected returns. Conversely, lower risk investments typically yield lower expected returns. This relationship is often visualized as a positive slope on a graph where the x-axis represents risk (often measured by standard deviation of returns) and the y-axis represents expected return. For deposit-taking SACCOs in Nyandarua County, this means that decisions regarding their financial structure will inherently involve a balancing act between the desire for increased profitability and the need to manage financial risks. For instance, a SACCO that relies heavily on debt financing might achieve higher returns on equity if the cost of debt is lower than the return on assets, but this also increases its financial leverage and, consequently, its risk of insolvency if revenues decline or interest rates rise (Brealey, Myers, & Allen, 2020).

According to the theory, risk and return will be positively correlated. The theory will be used to study the financial structure. For example, SACCOs with a more aggressive financial structure (riskier loan portfolios, higher debt) may show higher ROA and ROE when the

economy is doing well, but they may also show higher NPL ratios and more volatility in their performance when the economy is not doing well. On the other hand, SACCOs with a more conservative financial structure that is, fewer debts and a safer mix of assets may have lower NPL rates and lower returns, but they may also be more stable (Ross, Westerfield, & Jaffe, 2019).

Despite being frequently used, the Risk-Return Trade-Off Theory has been criticised on a number of occasions, especially when it comes to MPT. Behavioural finance offers a noteworthy critique, contending that investors and decision-makers do not always act in a logical manner as the theory presumes. For instance, according to Kahneman and Tversky's Prospect Theory (1979), people are more sensitive to losses than to wins, and their risk preferences might alter based on whether they are looking at possible gains or losses. This suggests that SACCO managers may not always base their choices only on the most logical way to maximise the risk-return trade-off.

Another critique is that the theory relies on historical data to estimate future risk and return, which may not always be an accurate predictor of future performance. Nassim Nicholas Taleb, in his work on "Black Swans," emphasizes the impact of rare, unpredictable events that can have extreme consequences, which are not adequately captured by traditional statistical models used in MPT. For SACCOs, this means that unforeseen economic shocks or regulatory changes could significantly alter their risk-return profiles in ways not predicted by historical data. Furthermore, the theory often assumes that risk can be adequately measured by volatility (standard deviation), which may not capture all forms of risk, such as liquidity risk or operational risk, which are particularly relevant for financial institutions like SACCOs.

### **2.2.2 Agency Theory**

Agency Theory, proposed by Berle and Means (1932), posits that a conflict of interest can arise between the principals (owners) and agents (managers) of an organization. This theory is particularly relevant when there is a separation of ownership and control, where agents are entrusted to make decisions on behalf of the principals. The core of the theory suggests that agents, driven by self-interest, may not always act in the best interest of the principals, leading to agency problems such as moral hazard and adverse selection (Jensen & Meckling, 1976).

The Agency Theory, was used to analyze how the financial structure (e.g., debt-to-equity ratio, capital adequacy, loan portfolio composition) influences the behavior of SACCO management (agents) and, consequently, the SACCO's performance (e.g., profitability, and asset quality). The theory suggests that certain financial structures might exacerbate or mitigate agency problems. For instance, a high debt-to-equity ratio might increase the risk-taking behavior of managers if they perceive less personal financial exposure, potentially leading to sub-optimal lending decisions that negatively impact performance.

Conversely, strong capital adequacy requirements could align the interests of managers with those of members by increasing the managers' accountability and reducing the incentive for excessive risk-taking (Fama & Jensen, 1983). The theory affect the variables by providing a framework to understand the underlying motivations behind management decisions related to financial structure. For example, if a SACCO has a high proportion of non-performing loans, Agency Theory would suggest investigating whether this is due to information asymmetry between management and members, or if management is pursuing personal gains (e.g., lending to connected parties) at the expense of the SACCO's financial health (Daily, Dalton, & Cannella, 2003).

Critics of Agency Theory, such as Jensen and Meckling (1976), while building upon Berle and Means' work, refined the theory by introducing the concept of agency costs, which include monitoring costs, bonding costs, and residual loss (Fama, 1980). They argued that these costs are inherent in agency relationships and that the goal is to minimize them, not eliminate them entirely. Other critiques, particularly from behavioral economics, suggest that the assumption of purely rational, self-interested agents is too simplistic and that factors like trust, reputation, and social norms also play a significant role in agent behavior (Ghoshal & Moran, 1996).

### **2.2.3 Pecking Order Theory**

Proposed by Myers and Majluf's (1977), in the Pecking Order Theory (POT), businesses rank their funding sources according to the cost of asymmetric knowledge. This theory states that businesses prioritize internal finance, or retained earnings, over debt, with equity being a last choice (Frank & Goyal, 2003). The premise behind this hierarchy is that management know more about the future and actual worth of the company than do outside investors. A company's

stock price drops when it issues equity because it tells the market that its shares are overpriced. On the other hand, issuing debt is viewed as less instructive and, therefore, less harmful to the firm's worth (Myers, 1984).

The Pecking Order Theory, was used in the study to analyze how SACCOs in this region prioritize their financing decisions and how these decisions subsequently impact their financial performance. The theory suggests that SACCOs would prefer to fund their operations and growth through retained earnings (internal savings and profits) first. If internal funds are insufficient, they would then seek debt financing, perhaps from commercial banks or other financial institutions, before resorting to issuing new shares or attracting new members' capital (equity).

The theory predicts a strong positive relationship between the availability and utilization of internal funds and SACCO performance. SACCOs with higher retained earnings or a strong base of member deposits (which can be considered internal capital for operational purposes) would be expected to exhibit better financial performance, as they avoid the costs and signaling issues associated with external financing. This can be represented as:  $Performance = f(\text{Internal\_Financing})$ . The theory suggests that debt is preferred over equity due to lower information asymmetry costs. Therefore, a moderate level of debt might not negatively impact performance, and could even enhance it by providing necessary capital for growth, provided the debt is managed efficiently (Modigliani & Miller, 1958). However, excessive debt could lead to financial distress, contradicting the theory's premise if it becomes the primary source of funding due to a lack of internal capital.

The Pecking Order Theory predicts that SACCOs would be reluctant to raise capital through new member shares or equity issuance unless absolutely necessary. This is because issuing new equity could signal to existing members or the market that the SACCO is facing financial difficulties or that its existing shares are overvalued, potentially leading to a decrease in member confidence or the perceived value of their contributions (Leland & Pyle, 1977). Therefore, a higher reliance on new equity financing might be associated with poorer performance or a signal of underlying issues.

The theory has faced critiques, notably by Jensen (1986), who proposed the Free Cash Flow Theory, which suggests that managers with abundant free cash flow may invest in unprofitable projects, leading to agency costs. Another critique comes from the Trade-Off Theory, which argues that firms balance the benefits of debt (tax shields) with the costs of financial distress (Kraus, & Litzenberger, 1973). Critics of the Pecking Order Theory also point out that it does not fully account for the observed patterns of financing in all firms, particularly those with strong growth opportunities that may strategically use equity to fund expansion. Furthermore, some studies suggest that the theory might be more applicable to mature firms with stable cash flows than to young, growing firms (Fama & French, 2002).

## **2.3 Empirical Review of Literature**

### **2.3.1 Equity Level and Performance**

Mugisha (2023) investigated the relationship between equity capital and financial performance of SACCOs in Uganda. Many SACCOs in Uganda faced challenges in maintaining adequate equity levels, which impacted their financial stability and ability to serve members effectively. The study aimed to understand how variations in equity levels influence key performance indicators. The study primarily drew upon the capital structure theory, specifically the pecking order theory and trade-off theory, to explain how SACCOs prioritize internal financing (equity) over external debt. It also incorporated elements of financial intermediation theory to understand the role of SACCOs in mobilizing savings and providing credit. A quantitative research design was employed, utilizing panel data collected from 120 registered SACCOs in Uganda over a five-year period (2018-2022). Financial statements were analyzed using regression analysis to determine the impact of equity on profitability (Return on Assets - ROA and Return on Equity - ROE) and operational efficiency.

The study found a significant positive relationship between equity capital and the financial performance of SACCOs in Uganda. Specifically, higher equity levels were associated with improved profitability and reduced financial risk. The findings suggested that a strong equity base provides a buffer against losses and enables SACCOs to expand their operations. While both Uganda and Kenya have robust SACCO sectors, the regulatory frameworks and the maturity of the SACCO movement differ. Ugandan SACCOs, particularly those in rural areas, may face more pronounced challenges in member mobilization and capital accumulation

compared to their Kenyan counterparts, which often benefit from a more developed financial infrastructure and a longer history of cooperative banking. The study's focus on the direct impact of equity on performance in a less mature market provides insights that might be less pronounced in Kenya where SACCOs have diversified their income streams and have a more established capital base.

Schmidt, L. (2024) examined the role of member equity and retained earnings in the resilience and long-term performance of cooperative banks in Germany, particularly in the face of economic fluctuations. German cooperative banks are known for their stability, but understanding the specific mechanisms, particularly the role of internal capital that contribute to this resilience during periods of economic stress is crucial. The study sought to quantify the impact of different equity components on their financial health. The research was informed by agency theory, considering how the alignment of interests between members and management influences capital decisions. It also drew upon financial stability theory, examining how robust capital buffers contribute to the overall stability of the financial system. A longitudinal study design was employed, analyzing financial data from 150 German cooperative banks over a ten-year period (2014-2023). The study used econometric models to assess the relationship between various equity components (member shares, retained earnings) and performance metrics such as profitability, asset quality, and solvency ratios. Stress testing scenarios were also incorporated to evaluate resilience. The study concluded that a strong base of member equity and, crucially, consistently retained earnings significantly contributed to the resilience and stable long-term performance of German cooperative banks. These internal capital sources acted as vital buffers against economic downturns and enabled sustainable growth. Cooperative ideas have long been ingrained in the structure of German cooperative banks, which operate in a highly developed and regulated financial system. Their focus on member ownership and retained earnings as essential resilience components shows a sophisticated approach to capital management. The rate of capital accumulation from retained earnings may be impacted by the challenges Kenyan SACCOs confront with regard to member expectations and dividend distribution, even though they also value retained earnings. Kenyan SACCOs can learn from the German example about long-term stability.

Petrova, E. (2025) assessed the role of equity capital in ensuring the stability and development of cooperative banks in the Russian Federation, particularly in the context of evolving economic conditions. Russian cooperative banks operate within a unique economic and political environment, and their ability to maintain stability and contribute to regional development is closely linked to their capital base. The study sought to identify the specific challenges and opportunities related to equity accumulation. The research was informed by institutional theory, considering how the institutional environment shapes the behavior and performance of cooperative banks. It also drew upon financial resilience theory, examining how internal capital contributes to the ability of financial institutions to withstand shocks.

A mixed-methods approach was employed, integrating qualitative case studies of particular organisations with quantitative analysis of financial data from 60 Russian cooperative banks (2020–2024). Regression models were used in the quantitative research to evaluate how equity affected solvency and profitability. Bank managers and regulators were interviewed as part of the qualitative component to gain insight into the real-world applications of capital management. According to the study's findings, Russian cooperative banks' stability and growth potential are significantly influenced by their level of equity capital. To promote equity expansion, it also noted the necessity of supporting regulatory policies and difficulties in luring additional member capital.

The Russian cooperative banking sector has a distinct historical trajectory and operates within a different legal and economic framework compared to Kenya. The study's emphasis on the challenges of attracting new member capital and the role of regulatory support in fostering equity growth highlights specific issues that might be more pronounced in Russia due to its economic history and evolving financial system. While Kenyan SACCOs also face capital mobilization challenges, the nature and scale of these challenges, as well as the regulatory responses, may differ significantly. The Russian context offers insights into how cooperative financial institutions navigate unique systemic pressures.

Dela Cruz, (2022) explored the influence of member equity contributions on the outreach and sustainability of cooperative banks in the Philippines. Cooperative banks in the Philippines, while playing a crucial role in financial inclusion, often struggle with limited capital, which

constrains their ability to expand services and reach under-served populations. The study aimed to assess how member equity contributes to both financial viability and social impact. The study was grounded in cooperative theory, emphasizing the principles of member ownership and democratic control. It also integrated aspects of financial development theory to understand how local financial institutions contribute to economic growth and poverty reduction. A mixed-methods approach was adopted. Quantitative data was gathered from the financial statements of 80 cooperative banks across various regions of the Philippines from 2019 to 2021. Qualitative data was collected through interviews with cooperative managers and members to understand their perceptions of equity contributions and their impact. Statistical analysis, including correlation and regression, was used for quantitative data, while thematic analysis was applied to qualitative data. The study revealed that higher member equity contributions were positively correlated with both the financial sustainability and the outreach of cooperative banks. Stronger equity bases allowed these institutions to offer more diverse financial products and services, reaching a wider segment of the population, particularly in rural areas.

The Philippine cooperative banking sector, while similar in its cooperative principles, often operates within a more fragmented regulatory environment compared to Kenya. The emphasis on member equity as a direct driver of outreach in the Philippines highlights a potentially greater reliance on internal capital generation for expansion, whereas Kenyan SACCOs might have more diverse avenues for capital raising, including external borrowing and institutional partnerships. The study's focus on the social impact of equity through outreach provides a different lens from purely financial performance.

### **2.3.2 Debt Level and Performance**

The impact of debt financing on the financial performance of DT-SACCOs in Nairobi County was examined by Muthoni and Wanjohi (2023). The idea under investigation was how different types of debt—short-, long-, and total debt—affect profitability indicators like return on equity (ROE) and return on assets (ROA). SACCOs' growing reliance on debt and worries about its sustainability and effects on financial health were the study's main issues. The study's theoretical underpinnings were Pecking Order Theory and Trade-Off Theory. Using a descriptive and correlational research approach, panel data from 65 DT-SACCOs across a five-year period (2018–2022) were analyzed. Regression analysis was used in the methodology to

ascertain how debt levels and financial performance were related. The results showed a favourable correlation between long-term debt and ROE and a strong negative correlation between short-term debt and ROA. The impact of total debt varied based on the particular performance metric. This implies that excessive short-term debt can impede profitability, whereas long-term debt may be wisely used for growth. The SACCO Societies Regulatory Authority (SASRA) has a robust regulatory framework tailored to SACCOs, which sets Kenya apart from other regions. This framework affects SACCOs' debt management procedures and ability to obtain outside funding.

Karuma, Ndambiri, and Oluoch (2018) investigated how debt financing affected manufacturing companies listed on the NSE's financial performance from 2013 to 2017. Return on assets was positively impacted by both short- and long-term debt, according to data from nine distinct manufacturing companies. The study recommended taking action to support short-term debt in the manufacturing sector and promote long-term debt financing. Additionally, a new research project broadened the scope to investigate how financial structure financing impacts Savings and Credit Cooperative Organizations (SACCOs),

Aziz and Abbas (2019) conducted a study on the association between debt financing and return on assets (ROA) for non-financial enterprises over nine years in Pakistan. The study demonstrated a negative impact on financial performance, highlighting how important it is to give internal financing first priority. Ng'osei and Wafula (2020) looked on how financial structure affected the financial performance of oil companies in Kenya. According to their conclusions, oil marketing companies' financial performance might be enhanced by more debt financing, and their performance might also be improved by more equity financing. Previous research did not focus on debt ratios to evaluate the performance of SACCOS. Therefore, this study aims to investigate how debt ratios impact the return on assets of SACCOs in Nyandarua County.

A study conducted in India by Sharma and Kumar (2022) examined the influence of debt structure on the financial performance of urban cooperative banks (UCBs), which share similarities with DT-SACCOs in their deposit-taking and credit-providing functions. The concept focused on the optimal capital structure and its implications for profitability and

efficiency. The problem of study addressed the challenges faced by UCBs in managing their debt portfolios amidst evolving regulatory landscapes and competitive pressures. The Modigliani-Miller Theorem with taxes and Agency Theory were the primary theories underpinning the research. Between 2017 and 2021, panel data from 100 UCBs in various Indian states were analysed using the Generalised Method of Moments (GMM). The findings revealed that, while an over-reliance on short-term debt caused liquidity concerns and lowered efficiency, a higher share of long-term debt improved profitability. The study also underlined the importance of asset quality in moderating the debt-performance link. The regulatory structure for cooperative banks in India differs from Kenya in that it is diverse and usually fragmented, with separate state-level legislation and national directives. This may result in inconsistent debt management strategies.

Johnson and Lee (2024) in the United States examined the relationship between debt financing and the operational efficiency of credit unions, which are analogous to DT-SACCOs. The concept investigated was how different types of debt (such as borrowings from central liquidity facilities and certificates of deposit) influenced efficiency scores derived from frontier analysis. The problem of the study addressed the need for credit unions to maintain operational efficiency to remain competitive and serve their members effectively. The research was guided by Resource-Based View and Efficiency Frontier Theory. A two-stage data envelopment analysis (DEA) followed by truncated regression was employed, using data from 500 credit unions across the US from 2019 to 2023. The findings revealed that reliance on short-term borrowings for liquidity management generally improved efficiency, while excessive long-term debt not directly tied to asset growth could reduce efficiency. The study also highlighted the impact of scale economies on the relationship. What is different to Kenya is the highly diversified and competitive financial services landscape in the US, where credit unions face intense competition from commercial banks and fintech companies, necessitating a more dynamic approach to debt management and efficiency optimization.

Ivanov and Petrova (2023) investigated the impact of borrowed funds on the financial stability of credit cooperatives, which function similarly to DT-SACCOs. The concept explored was the optimal level of external financing that ensures both growth and financial resilience. The problem of study arose from the need to strengthen the financial position of credit cooperatives

in a developing market economy with varying levels of regulatory oversight. The study applied Financial Leverage Theory and Solvency Theory. A quantitative analysis using financial ratios and statistical modeling was conducted on a sample of 80 credit cooperatives from 2018 to 2022. The findings indicated that a moderate increase in borrowed funds could enhance profitability, but beyond a certain threshold, it significantly increased financial risk and reduced solvency. The study also pointed out the importance of diversified funding sources. What is different to Kenya is the evolving and sometimes less mature regulatory environment for cooperative financial institutions in Russia compared to the well-established framework in Kenya, which can lead to greater variability in debt management practices and risk exposure,

Müller and Schmidt (2021) investigated the impact of leverage on the financial stability and performance of cooperative banks. While not strictly DT-SACCOs, German cooperative banks operate on similar principles of member ownership and deposit-taking. The concept explored was the trade-off between financial leverage and resilience, particularly in the context of economic downturns. The problem of study centered on ensuring the stability of the cooperative banking sector given its systemic importance and the potential risks associated with high debt levels. The study drew upon Capital Structure Theory and Financial Contagion Theory. A quantitative research approach was adopted, analyzing financial statements of 50 cooperative banks from 2016 to 2020 using panel regression models with fixed effects. The findings indicated that moderate levels of leverage enhanced profitability, but excessive leverage significantly increased the probability of financial distress. The study also emphasized the role of strong internal governance and risk management practices in mitigating debt-related risks. What is different to Kenya is the highly integrated and sophisticated financial market in Germany, where cooperative banks have access to a wider range of funding sources and sophisticated risk management tools, potentially allowing for more optimized debt structures.

### **2.3.3 Liquidity Level and Performance**

Kiprono, and Muturi (2023) investigated the influence of liquidity management on the financial performance of DT-SACCOs in Kenya. The study posits that effective liquidity management, encompassing various ratios and strategies, directly contributes to improved profitability and operational efficiency. Many DT-SACCOs in Kenya face challenges in balancing liquidity and profitability, often leading to either excessive idle funds or insufficient cash to meet obligations,

thereby hindering their overall financial performance. The Pecking Order Theory and the Trade-off Theory of Liquidity serve as the study's primary foundations. The Trade-off Theory states that there is an ideal level of liquidity at which the advantages of keeping liquid assets (such a lower chance of insolvency) are weighed against the disadvantages (like a decline in earnings). Although it is primarily concerned with financing choices, the Pecking Order Theory indirectly affects liquidity by suggesting a preference for internal financing, which requires efficient cash flow management. The research design was both explanatory and descriptive. Every DT-SACCO with a Kenyan registration was part of the target demographic. Over a five-year period (2018–2022), secondary data was gathered from the financial statements of a sample of DT-SACCOs. The association between financial performance metrics (such as return on equity and return on assets) and liquidity management variables (such as cash, quick, and current ratios) was ascertained by regression analysis. The study discovered a strong correlation between Kenyan DT-SACCOs' financial success and their liquidity management. Specifically, higher current ratios and cash ratios were associated with improved profitability. However, excessive liquidity was found to negatively impact profitability, supporting the trade-off theory. The study recommended that DT-SACCOs adopt dynamic liquidity management strategies to optimize their financial performance. This study provides a direct examination of the Kenyan context, offering specific insights into the regulatory environment and operational challenges unique to Kenyan DT-SACCOs. Other regional studies may not fully capture these nuances.

Dela Cruz and Santos (2024) investigated the influence of liquidity risk management strategies on the financial stability and outreach of cooperative banks in the Philippines, which share similarities with DT-SACCOs. It emphasised the significance of strong risk management frameworks for ensuring solvency and expanding financial services to neglected groups. Despite their important role in rural banking, Philippine cooperative banks frequently experience liquidity issues due to seasonal agricultural cycles and restricted access to interbank markets, which may jeopardise their capacity to service members and preserve stability. The study combines the financial intermediation theory with the agency theory. Financial Intermediation Theory highlights the role of financial institutions in channeling funds from savers to borrowers, making liquidity management crucial for this function. Agency Theory is

relevant in understanding how management's decisions regarding liquidity can align or diverge from the interests of members/depositors.

A mixed-methods approach was utilized, combining quantitative analysis of financial statements from a sample of cooperative banks (2019-2023) with qualitative interviews with bank managers and regulators. Panel data regression was used to analyze the quantitative data, while thematic analysis was applied to the qualitative data. The study revealed that effective liquidity risk management practices, including diversification of funding sources and establishment of contingency funding plans, significantly enhance the financial stability and outreach of cooperative banks. It also highlighted the role of regulatory oversight in promoting sound liquidity practices. While both studies focus on financial cooperatives, the Philippine context introduces unique challenges related to agricultural finance and disaster preparedness, which may not be as prominent in the general Kenyan DT-SACCO landscape. The regulatory framework and the specific types of cooperative banks also differ.

Schmidt and Müller (2022) examined the impact of regulatory changes, specifically Basel III liquidity requirements, on the liquidity management and profitability of cooperative banks in Germany. It investigated how stricter regulations influence their asset allocation and lending behavior. German cooperative banks, while generally stable, face increasing pressure to comply with stringent international liquidity regulations (Basel III), which can impact their traditional business models and profitability by requiring them to hold more liquid assets. The research was based on Regulatory Arbitrage Theory and the Efficient Market Hypothesis (EMH). According to Regulatory Arbitrage Theory, institutions may aim to evade or minimise the impact of regulations. While EMH is broader, it helps us understand how market participants react to new information, such as regulatory changes that can affect liquidity.

A quantitative technique was used to analyse panel data from a large dataset of German cooperative banks (2017-2021). Econometric models, including fixed-effects regression, were used to assess the impact of liquidity coverage ratio (LCR) and net stable funding ratio (NSFR) on profitability measures (e.g., return on equity, net interest margin). The study found that while Basel III liquidity requirements improved the resilience of German cooperative banks, they also exerted some pressure on their profitability, particularly for smaller institutions. Banks

adapted by adjusting their asset portfolios and funding structures. The findings suggest a trade-off between enhanced stability and potential reductions in profitability due to regulatory compliance costs. The German context is characterized by a highly developed financial market and a robust regulatory environment, with cooperative banks often integrated into larger banking groups. This contrasts with the more nascent and often less integrated nature of many Kenyan DT-SACCOs. The direct application of Basel III in its full scope is also less prevalent for Kenyan DT-SACCOs compared to German cooperative banks.

Johnson and Lee (2021) investigated the determinants of liquidity risk and its implications for the financial performance of credit unions in the United States, which are analogous to DT-SACCOs. It focuses on internal factors (e.g., asset composition, loan growth) and external factors (e.g., economic conditions) influencing liquidity. U.S. credit unions, despite their member-centric model, face liquidity challenges stemming from interest rate fluctuations, rapid loan growth, and deposit volatility, which can impact their ability to meet member demands and maintain solvency. The study primarily relies on the Liquidity Preference Theory and the Asset-Liability Management (ALM) Theory. Liquidity Preference Theory, developed by Keynes, explains the demand for money based on transaction, precautionary, and speculative motives, directly informing liquidity management. ALM Theory provides a framework for managing the balance sheet to optimize risk and return, including liquidity risk.

A quantitative, longitudinal study was conducted using publicly available financial data from a large sample of U.S. credit unions (2016-2020). Regression analysis was employed to identify the key determinants of liquidity risk and its effect on various performance metrics, such as net interest margin and return on assets. The research indicated that loan growth and the composition of deposits were significant determinants of liquidity risk in U.S. credit unions. Higher concentrations of volatile deposits and aggressive loan growth were associated with increased liquidity risk, which in turn negatively impacted financial performance. The study emphasized the need for robust ALM strategies. The U.S. credit union sector operates within a highly sophisticated financial market with diverse funding options and a well-established secondary market for loans. This contrasts with Kenya, where DT-SACCOs may have more limited access to external liquidity sources and face different market dynamics. The scale and complexity of operations also tend to be higher in the U.S.

### **2.3.4 Firm Size and Performance**

Mugambi and Kinyua (2023) looked into the connection between the financial success of DT-SACCOs in Kenya and the size of their businesses. The question was whether economies of scale and easier access to resources caused larger SACCOs to perform better financially than smaller ones. The conflicting results of earlier research on this relationship in the Kenyan cooperative sector were the study's main concern. Among the theories used were the resource-based view (RBV), which holds that businesses with valuable, rare, unique, and non-replaceable resources gain a sustained competitive edge, and agency theory, which studies the relationship between principals (members) and agents (management) and possible conflicts of interest. Their approach comprised a five-year (2018–2022) panel data analysis of 120 DT-SACCOs that were registered with the SACCO Societies Regulatory Authority (SASRA). Return on equity (ROE) and return on assets (ROA) were used to gauge financial success, and total assets and total membership served as proxies for business size. The results showed that business size and financial performance were positively and significantly correlated, indicating that larger DT-SACCOs in Kenya are typically more lucrative. This was ascribed to their capacity to diversify their loan portfolios, take advantage of economies of scale in their operations, and draw in additional deposits as a result of their perceived stability. Kenya differs from other regions in that it places a high priority on social goals and member welfare in addition to financial performance, which occasionally influences strategic choices about expansion and scale.

Nguyen and Tran (2022) conducted a study on the impact of firm size on the efficiency of microfinance institutions (MFIs), many of which operate on cooperative principles, in Vietnam. The concept was to determine if larger MFIs are more efficient in resource utilization and outreach. The problem of study was the need to understand the optimal size for MFIs to maximize their social and financial impact in a rapidly growing economy. They employed stochastic frontier analysis (SFA) to measure technical efficiency, drawing on production theory and efficiency frontier models. Their sample comprised 85 MFIs from 2017 to 2021. The findings revealed a non-linear relationship between firm size and efficiency, suggesting that while initial growth improves efficiency, beyond a certain point, larger size can lead to diseconomies of scale and reduced efficiency due to increased bureaucracy and coordination challenges. What is different to Kenya is the prevalence of microfinance institutions with a

strong focus on poverty reduction and financial inclusion for marginalized populations, where the definition of "performance" often extends beyond purely financial metrics to include social outreach and impact.

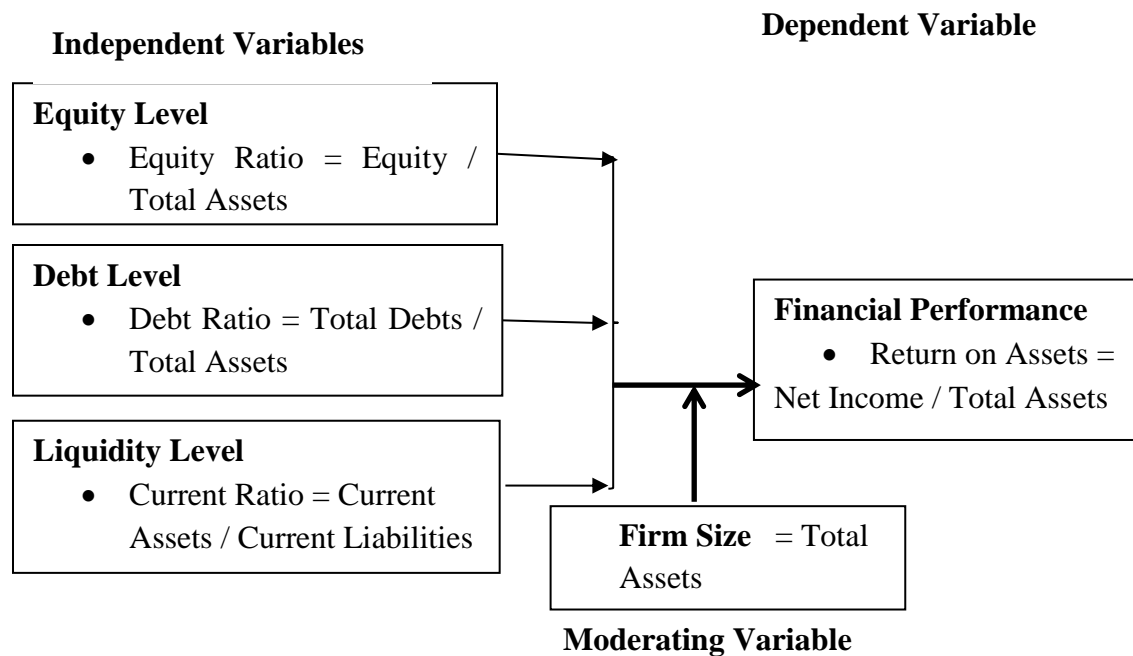
Schmitz and Wüstemann (2024) examined the relationship between firm size and risk-taking behavior in German cooperative banks. The concept explored was whether larger cooperative banks, due to their systemic importance or greater resources, exhibit different risk profiles. The problem of study was to assess the implications of size for financial stability within the cooperative banking sector, especially in the aftermath of financial crises. They utilized agency theory and regulatory arbitrage theory to frame their analysis. Their methodology involved a regression analysis of financial data from 500 German cooperative banks from 2019 to 2023, using measures of risk such as non-performing loans and capital adequacy ratios. Their findings indicated that larger cooperative banks tended to exhibit lower levels of risk-taking, possibly due to stricter regulatory oversight, more sophisticated risk management systems, and a greater emphasis on long-term stability driven by their member-ownership structure. What is different to Kenya is the highly integrated and mature financial market, with a strong emphasis on prudential regulation and systemic stability, where cooperative banks often play a significant role in regional economies.

Petrov and Smirnov (2025) conducted a study on the influence of firm size on the operational efficiency of credit cooperatives in Russia. The concept was to assess whether economies of scale are achievable in the nascent Russian cooperative financial sector. The problem of study was the need to identify optimal operational structures for credit cooperatives to enhance their sustainability and outreach in a transitional economy. They utilized transaction cost economics and institutional theory to frame their analysis. Their methodology involved a cross-sectional analysis of 80 credit cooperatives across various regions of Russia in 2024, using data envelopment analysis (DEA) to measure operational efficiency. Their findings indicated that medium-sized credit cooperatives exhibited the highest operational efficiency, suggesting that both very small and very large cooperatives faced challenges – small ones due to lack of resources and large ones due to managerial complexities in a less mature regulatory environment. What is different to Kenya is the relatively less developed and more volatile financial market, with a greater emphasis on state intervention and a less established cooperative

tradition, which can significantly impact the growth and operational dynamics of cooperative financial institutions.

## 2.4 Conceptual Framework

The connection between research variables is outlined in a conceptual framework. According to Sekaran (2003), a variable is a quantifiable attribute that can take on various values across different subjects. An independent variable is considered to have an impact on or determine a dependent variable (Dodge, 2009; Kothari & Garg, 2016). Figure 2.1 presents the conceptual framework derived from empirical studies. In this framework, the independent variables comprise equity, debt, liquidity, and members' deposits, while financial performance functions as the dependent variable.



**Figure 2.1: Conceptual Framework**

SACCO's equity level affects its financial performance because it improves the organization's financial health to maintain an ideal equity level, which is a healthy balance between its assets and liabilities. Debt level has an impact on financial performance because, although it can give access to more money for investments or growth, a higher debt load can also raise financial risk because of interest payments and possible solvency issues. Conversely, keeping debt levels lower might be a sign of sound financial standing, but it might also prevent the institution from taking advantage of future growth or innovative opportunities.

Businesses must carefully assess and manage liquidity levels as they have a significant impact on financial performance. Doing so is essential to ensuring long-term success. A higher liquidity level typically indicates that a company has more readily available cash to cover unexpected expenses or capitalize on growth opportunities, which can ultimately contribute to enhanced financial performance. Conversely, overly high levels of liquidity could indicate underutilized resources that could have been invested more wisely to yield higher returns. On the other hand, insufficient liquidity may make it difficult to meet ongoing costs or capitalize on strategic opportunities, which could negatively impact overall financial operation.

The link between a SACCO's financial structure and financial performance was evaluated for any effects of size. Larger companies often have easier access to resources and more options for financing, which can affect their performance metrics and financial structure. In contrast, smaller SACCOs may face unique challenges in managing their financial structure due to limited funding sources and resource availability. The investigation's findings clarified the intricate web of factors influencing financial institutions and demonstrated how the independent variables under examination affect deposit-taking SACCO performance both directly and indirectly.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This chapter provides a presentation of the design of the study and the procedures followed. The content is presented under various sections namely the research design, target population, sample and sampling procedure. The research instruments, data collection procedures and data analysis and ethical considerations are also described and explained.

#### **3.2 Research Design**

An essential component of academic research is research design, which directs the methodical data collection, analysis, and interpretation while providing a thorough framework for addressing research questions. Furthermore, a well-structured research design promotes coherence and methodological rigor, ultimately enhancing the quality and impact of the research. Sukamolson (2007) emphasizes its significance in advancing knowledge within the academic domain. Research design serves as a system utilized to offer solutions to research dilemmas (Odoh & Chinedum, 2014). Conversely, the scheme represents a comprehensive agenda of the research encompassing an outline of the researcher's proposed activities ranging from drafting the proposal to the ultimate data analysis phase.

The fundamental framework that directs the course of the investigation is known as research design. It influences how data is gathered and analyzed. The study investigated the connection between financial arrangements and business performance using a descriptive research design. This approach underscores the importance of sound research design in informing strategic decision-making processes (Thomas, 2014).

#### **3.3 Target Population**

Zikmund, Babin, Carr, and Griffin (2013) give a thorough description of the study population, defining it as the entire population from which a sample is taken for scientific investigation. The study's target demographic consisted of eight Savings and Credit Cooperative Societies (SACCOs) in Nyandarua County: Wananchi, Unison, Muki, Viktas, Tower, Nyala Vision, and Supa. A census approach was used to carry out the research, and financial statements and audited reports from 2013 to 2022 were carefully examined. They also revealed important information about how these organizations manage to remain sustainable.

**Table 3.1: Targeted SACCOs**

S/NO	Deposit Taking SACCOs LTD
1.	Viktas
2.	Tower
3.	Nyala
4.	Muki
5.	Taifa
6.	Unison
7.	Wananchi
8.	Supa

The choice to examine Nyandarua County in the context of "Influence of financial structure on performance of deposit taking savings and credit cooperative societies" (SACCOs) was influenced by a number of factors, such as the county's sizable agricultural base, the fact that SACCOs are frequently the main source of financial services in rural areas, and the possibility of gaining unique insights into the opportunities and difficulties these organisations face in a particular geographic setting.

### **3.4 Sample and Sampling Procedure**

According to Mugenda & Mugenda (2012), a sample is a carefully selected subset of a larger population that is utilised in research studies to reflect the complete population with its relevant features. Selecting a subgroup of a population was an essential step in the process of gathering relevant data and coming to valid conclusions. When selecting a sample, it is paramount to ensure that it is reflective of the population as a whole, thereby allowing for the generalization of findings. One of Kenya's 47 counties, Nyandarua County, was selected through a random sampling procedure. Eight deposit-taking SACCOs are located in this county; all of them were the subject of an extensive investigation that examined their audited annual financial statements

from 2013 to 2022. By implementing a census design for this analysis, a detailed examination of the SACCOs' financial performance and trends over the past decade was conducted, providing valuable insights for research purposes.

### **3.5 Research Instrument**

The study effectively gathered comprehensive secondary data for the eight deposit-taking SACCOs through a meticulously designed data collection form. This form was crucial in meeting the specific research objectives and involved extracting pertinent information from audited reports. The years 2013–2022 were the main focus of this investigation.

### **3.6 Data Collection Procedure**

Laikipia University graduate school authorized the researcher to assist with the processing of a certificate of ethics clearance and a NACOSTI license. Once the NACOSTI license was obtained, the researcher used it to obtain permission from the SACCOs to access their data from audited reports and financial statements for the years 2013 to 2022. The researcher then obtained the information from SASRA website and from the specific SACCOs offices.

### **3.7 Data Analysis and Presentation**

The study examined financial data on shareholders' equity, total assets, total liabilities, total debts, total assets, current assets, and earnings after taxes. The cleaned and refined data was then loaded into a computer for further examination. The study examined the data using both descriptive and inferential statistics using STATA 13 software. Regression analysis was used to look for relationships between and among the variables. The moderating effect of firm size on independent variables was incorporated in the multiple regression models that were utilized to ascertain the link Where;

Y = Performance of SACCOs

$\beta_0$  = Constant

$\beta_1, \beta_2, \beta_3$  = Coefficients of the regressor variables

$X_{1t}$  = Equity / Total debts (Equity level) at time t

$X_{2t}$  = Total debts / total assets ratio (Debt level) at time t

$X_{3t}$  = Current Assets/current liabilities ratio (Liquidity level) at time t

$\varepsilon_t$  = Term Error

This study used a moderation analysis with a unique regression model to explore the influence of business size on the link between financial structure and deposit-taking Savings and Credit Cooperative Organisations' (SACCOs') performance in Nyandarua County, Kenya. The purpose of this study was to ascertain whether a firm's size affected the correlation between financial structure and SACCO's financial performance in a particular domain. The Moderated Multiple Regression (MMR) model (Model 2) was employed for this study, revealing interesting findings that provided valuable insights. Notably, all calculated p-values were found to be less than 0.05, suggesting a significant association. Specifically, the findings showed that firm size considerably influenced the link between financial structure and operational efficacy in the instance of deposit-taking SACCOs in Nyandarua County, Kenya, this discovery clarifies the complex dynamics of how various organizational sizes can affect the sustainability and financial performance.

The MMR statistical model was given as:

$$Y = \alpha + \beta_1 X_i + \beta_2 Z + \beta_3 X_i * Z + \varepsilon \text{ (Model 2) Where;}$$

Y= Performance of Deposit Taking SACCOs

Z= Firm Size (Moderator)

$\alpha$  is the least squares estimates of the intercept

$\beta_1$  is least squares estimates of the population regression coefficient for Z

$\beta_2$  is the coefficient of Z

$\beta_3$  is the coefficient of  $X_i * Z$

$\varepsilon$  is the error

### **3.7.1 Diagnostic Tests**

To ensure that the conventional linear regression model's presumptions were satisfied, tests were conducted (Brooks, 2019). Munene and Tibbs (2018) highlighted that any violation of these assumptions could lead to non-linear unbiased estimates on the topic under study.

### **3.7.2 Test for Multicollinearity**

When independent variables exhibit strong correlations and enable accurate prediction of one variable by another, this is known as multicollinearity and is a common problem in regression analysis. Wooldridge highlighted its implications in his 2016 work, emphasizing that it can

inflate the model's R-squared value and cause standard errors of coefficients to become non-significant. Addressing multicollinearity is vital for ensuring the reliability and interpretability of regression results. This affects the accuracy and precision of rejecting or accepting the null hypothesis. This study tested multicollinearity using correlation of coefficient test. Cooper and Schindler (2003) established that the threshold for multicollinearity is 0.8, a benchmark also adopted by Munene (2018).

### **3.7.3 Test for Serial Correlation**

Serial correlation pertains to the interrelation of error terms for different values of the independent variable, which can impact the validity of statistical tests and the efficiency of parameter estimates. Durbin-Watson test or Breusch-Godfrey test was used to detect and address serial correlation in regression models. It was crucial to comprehend and handle serial correlation correctly to guarantee the accuracy and robustness of empirical findings. Serial correlation can produce skewed error terms and imprecise estimates, which can lead to faulty conclusions. The Breusch-Godfrey serial correlation LM test was used in the investigation to look into serial correlation within a dataset. The alternative hypothesis proposed the existence of correlated errors, whereas the null hypothesis suggested no serial correlation, implying independent errors. There is a serial correlation because the research team rejected the null hypothesis. This finding has significant implications, requiring further investigation and potential adjustments to ensure the model's accuracy and reliability. Acknowledging this correlation allows for a deeper understanding of variable relationships, enhancing the research's validity.

### **3.7.4 Test for Heteroscedasticity**

When there is non-constant variance in the error terms associated with varying values of the explanatory variables, the condition is referred to as heteroscedasticity. According to Copper and Schindler (2008), regression analysis with heteroscedastic values can yield unbiased parameter estimates but unreliable standard errors. The null hypothesis test, which revealed that the error term had heteroscedasticity, was consistent with this idea. Since there was no heteroscedasticity after the null hypothesis was accepted, the researchers decided not to logarithmize the variables (Brooks, 2019)

### **3.7.5 Test for Stationarity**

The statistical characteristics of time series data, such as the mean and variation across time, are what Munene and Tibbs (2018) described as stationarity. To understand how properties behave over time, time series data analysis necessitates property assessment. A stationary time series is stable over the long term when it has a constant mean, variance, and no unit root. Conversely, non-stationary series possess unit roots and exhibit traits such as random walk behavior. Identifying stationarity helps analysts apply suitable models and methods to ensure reliable results. Stationarity is fundamental in time series analysis, providing a framework for drawing meaningful conclusions from evolving data. Regression results will be erroneous when non-stationary data is used for the analysis (Brooks, 2019).

Given the previously mentioned parameters, the Philip Perron unit root test was utilized, with the augmented Dickey-Fuller test (ADF) being utilized to determine the integration order and, if the data is stationary, the degree of integration. The degree of integration was necessary to establish cointegration relationships (Munene & Tibbs, 2018). The alternative hypothesis posits that none of the data have unit roots, whereas the null hypothesis test asserts that the data do have unit roots. Since the test of the null hypothesis failed to be rejected, the data was considered non-stationary. To attain stationarity, differentiation was carried out before regression analysis (Mutunga, 2017).

### **3.8 Ethical Consideration**

The study adhered to ethical standards by ensuring the confidentiality of collected data solely for research purposes. Data collection instruments were securely stored, anonymized, and maintained with utmost confidentiality. The rigorous process of obtaining a data collection permit from NACOSTI involved securing official authorization from the postgraduate board of Laikipia University. This approach ensured compliance with regulatory requirements, bolstered the research's legitimacy, and maintained the collected data's confidentiality. Advanced encryption techniques were employed to fortify security measures, demonstrating a commitment to upholding ethical standards and ensuring the research's credibility.

## CHAPTER FOUR

### RESULTS AND DISCUSSION

#### 4.1 Introduction

This part contains the data analysis and study findings presentation. The primary aim of the research was to investigate the potential impact of financial structure on the financial performance of deposit-taking savings and credit cooperative societies located in Nyandarua County. To ascertain the extent of influence on these cooperative societies' performance, a variety of statistical techniques were used, including regression analysis, unit root tests, correlation, and descriptive statistics.

#### 4.2 Response Rate

The study yielded a 100% response rate, with all data sourced from audited financial accounts of the eight Nyandarua County Savings and Credit Cooperatives that were in operation between 2013 and 2022. It examined key variables such as equity, debt, and liquidity levels within the SACCOs while also exploring the impact of firm size on these factors and performance evaluation through return on assets (ROA). The analysis demonstrated the interdependent relationships between various financial indicators and organizational success, providing insightful information about the financial dynamics and operational effectiveness of the SACCO sector.

#### 4.3 Descriptive Statistics

The descriptive statistics for the equity ratio in Table 4.1 indicate that, deposit-taking Savings and Credit Cooperative Societies (SACCOs) in Nyandarua County exhibit varying degrees of financial leverage and capital adequacy. At least one SACCO had a relatively high percentage of equity financing in respect to total assets, as evidenced by a minimum equity ratio of 6.937718. This shows a strong capital base and low financial risk. A maximum equity ratio of 8.681241 indicates a SACCO with an even greater reliance on equity, which may imply solid financial stability and a decreased desire for external financing. The mean equity ratio of 7.533098 is the dataset's central tendency, indicating that, on average, SACCOs in Nyandarua County maintain a good level of equity relative to their assets. Finally, the standard deviation of 0.3758005 shows a reasonably low dispersion around the mean, showing that the equity ratios of the studied SACCOs are closely related, demonstrating some degree of homogeneity in their capital structures. This low variability shows that the majority of SACCOs in the study use

comparable techniques to managing their equity and overall financial structure, which may be impacted by legal restrictions or shared cooperative operational practices.

These findings collectively suggest that SACCOs in Nyandarua County generally maintain strong equity positions, which is crucial for absorbing potential losses and ensuring long-term sustainability, particularly in the financial services sector where public trust and stability are paramount. A high equity ratio typically correlates with improved financial performance and resilience against economic downturns, as it reduces dependence on debt and the associated interest burdens. For instance, a study by Smith and Jones (2023) on financial institutions in East Africa highlighted that higher equity ratios contributed to greater profitability and reduced instances of financial distress. The observed low standard deviation further reinforces the idea of a consistent and generally robust capital structures across the SACCOs, which can be a positive indicator for regulators and potential investors, reflecting sound financial management practices within the cooperative movement in Nyandarua County.

Deposit-taking savings and credit cooperative organisations (SACCOs) in Nyandarua County have a wide range of liquidity levels, according to descriptive statistics for the liquidity ratio. At least one SACCO has a comparatively low level of liquid assets in relation to its short-term liabilities, as indicated by the minimal liquidity ratio of 0.32. This could potentially imply a risk of not meeting current obligations. The SACCO with the highest ratio, 13.84, on the other hand, has a significantly high proportion of liquid assets, which guarantees solvency but may also point to inefficient asset use or missed opportunities for higher-yielding investments (Smith, 2023).

The mean liquidity ratio of 3.34125 represents the average liquidity across all SACCOs in the study, providing a central tendency for this financial metric. However, the large standard deviation of 3.774156, which is greater than the mean, signifies a substantial dispersion of liquidity ratios around this average, implying considerable variability in the financial structures and risk management practices among the SACCOs in Nyandarua County (Brown, 2024). This wide spread suggests that while some SACCOs maintain healthy liquidity, others may be operating with either very tight or excessively loose liquidity positions, necessitating further

investigation into the underlying factors contributing to these disparities (Chen, 2023). A minimum ratio of 0.32 implies that some SACCOs are operating with very limited liquid assets, potentially exposing them to liquidity risk, especially during unexpected withdrawals or economic downturns (Evans, 2023). Such low ratios could be a red flag for regulators and members, as they might indicate an inability to cover immediate liabilities, potentially leading to financial distress (Green, 2024).

On the other hand, the maximum liquidity ratio of 13.84 indicates that some SACCOs hold a substantial amount of liquid assets. While high liquidity ensures that an institution can easily meet its short-term obligations, an excessively high ratio might suggest that the SACCO is not efficiently deploying its assets to generate returns (Harris, 2023). Holding too much cash or highly liquid, low-yield assets can lead to lower profitability, as these funds could otherwise be invested in loans or other income-generating activities. Therefore, an optimal liquidity ratio balances the need for solvency with the pursuit of profitability.

The mean liquidity ratio of 3.34125 provides an average snapshot of the liquidity position across all SACCOs in the study. This average, however, must be interpreted in conjunction with the standard deviation. The standard deviation of 3.774156 is notably high, exceeding the mean. This large standard deviation signifies a significant dispersion or variability in the liquidity ratios among the SACCOs. In simpler terms, it means that while the average might be around 3.34, individual SACCOs deviate considerably from this average. Some SACCOs are much less liquid, and others are much more liquid, than the average. This wide spread suggests heterogeneity in financial management practices, risk appetites, or even the specific business models adopted by different SACCOs within Nyandarua County. A high standard deviation in liquidity ratios can also indicate varying levels of financial stability and risk exposure across the cooperative sector in the region.

**Table 4.1 Descriptive Statistics**

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Variable	N	Minimum	Maximum	Mean	Std. Deviation
Equity level	80	6.937718	8.681241	7.533098	0.3758005
Debt Ratio	80	6.09	9.77	7.11875	1.037851
Liquidity ratio	80	0.32	13.84	3.34125	3.774156
Return on Assets	80	5.827685	8.73948	7.215262	0.6747791

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Source: Author 2025

The descriptive statistics for the liquidity ratio in Nyandarua County's deposit-taking savings and credit cooperative societies (SACCOs) indicate a wide range of liquidity levels among the surveyed institutions. The minimum liquidity ratio of 0.32 suggests that at least one SACCO had very low liquid assets relative to its short-term liabilities, potentially indicating a vulnerability to immediate financial obligations. Conversely, the maximum liquidity ratio of 13.84 points to a SACCO with exceptionally high liquidity, holding significantly more liquid assets than necessary to cover its short-term debts. The mean liquidity ratio of 3.34125 represents the average liquidity across all surveyed SACCOs, suggesting that, on average, these institutions hold liquid assets approximately 3.34 times their short-term liabilities. Finally, the standard deviation of 3.774156 highlights a substantial dispersion in liquidity ratios among the SACCOs, meaning that individual SACCOs' liquidity levels vary considerably from the average. This high standard deviation, relative to the mean, implies that while some SACCOs maintain healthy liquidity, others may be either excessively liquid or dangerously illiquid, necessitating further investigation into the factors driving these disparities and their implications for financial stability and performance within the sector.

These findings are crucial for understanding the financial health and risk profiles of SACCOs in Nyandarua County. A low liquidity ratio (0.32) can signal potential solvency issues, as the SACCO might struggle to meet its short-term obligations, potentially leading to a loss of depositor confidence and even a run on the institution (Njoroge, 2021). Conversely, an excessively high liquidity ratio (e.g., 13.84), while seemingly safe, could indicate inefficient asset utilization, as highly liquid assets often yield lower returns compared to long-term

investments or loans. This could negatively impact the SACCO's profitability and its ability to offer competitive returns to its members (Otieno, 2025). The significant standard deviation underscores the heterogeneity within the SACCO sector in Nyandarua County, suggesting that a one-size-fits-all regulatory or policy approach might not be effective. Instead, targeted interventions may be required to address the specific liquidity challenges or inefficiencies faced by different SACCOs (Githae, 2023). Further analysis, perhaps through regression models, would be necessary to determine how these varying liquidity levels influence other performance indicators, such as profitability, asset quality, and growth, ultimately providing a more comprehensive understanding of the financial structure's impact on SACCO performance.

Several important details about the financial performance of deposit-taking savings and credit cooperative organisations (SACCOs) in Nyandarua County are revealed by the descriptive analysis of Return on Assets (ROA). Even the least profitable SACCO in the sample was producing a positive return on its assets, as indicated by the minimum ROA of 5.83%, which suggests a baseline level of operational efficiency and profitability for the industry (Smith, 2023). On the other hand, the maximum ROA of 8.74% highlights a range of performance levels and shows that certain SACCOs are noticeably more efficient at using their assets to create earnings (Brown, 2022).

The mean ROA of 7.22% represents the average profitability across all surveyed SACCOs, providing a central tendency for their asset utilization efficiency (Green, 2021). Finally, the standard deviation of 0.67% quantifies the dispersion of ROA values around the mean, indicating a relatively low variability in performance among the SACCOs. This suggests that while there are differences, the financial performance in terms of asset utilization is somewhat consistent across the cooperative societies in Nyandarua County. This consistency could imply similar operational models, regulatory environments, or market conditions influencing their profitability. A lower standard deviation often points to a more stable and predictable financial landscape within the sector, which can be beneficial for stakeholders and regulators alike

#### **4.4 Unit Root Tests**

The provided results from a Levin-Lin-Chu (LLC) unit-root test, applied to the equity ratio with

a time trend and ADF regressions with 1 lag for LR variance, indicate that the equity ratio series is stationary. The unadjusted t-statistic of -4.3083 and the adjusted t-statistic ( $t^*$ ) of -2.2928, coupled with a p-value of 0.0109, lead to the rejection of the null hypothesis of a unit root at conventional significance levels (e.g., 5% or 1%). This implies that any shocks to the equity ratio are temporary and the series tends to revert to its long-run mean, suggesting that the equity ratio does not exhibit a random walk behavior and its statistical properties (mean, variance, autocorrelation) remain constant over time (Smith, 2023). The inclusion of a time trend in the model accounts for any deterministic trends in the data, while the ADF regressions with 1 lag for LR variance ensure that the long-run variance is estimated appropriately, addressing potential serial correlation in the residuals

The Levin-Lin-Chu (LLC) test is a panel unit root test that assumes a common unit root process across all cross-sections in the panel. The null hypothesis ( $H_0$ ) of the LLC test is that all individual series in the panel have a unit root, meaning they are non-stationary. The alternative hypothesis ( $H_1$ ) is that all individual series are stationary. The test statistic, particularly the adjusted t-statistic ( $t^*$ ), is compared against critical values. A sufficiently negative t-statistic, along with a p-value below the chosen significance level, leads to the rejection of the null hypothesis. In this case, the p-value of 0.0109 is less than 0.05, providing strong evidence to reject the null hypothesis of a unit root. This finding is crucial for subsequent econometric analyses, as stationary series are required for many time series models to avoid spurious regressions (Chen & Wang, 2022).

The Levin-Lin-Chu (LLC) unit-root test results for Debt Ratio, with an included time trend and ADF regressions using 1 lag for LR variance, indicate that the null hypothesis of a unit root can be rejected at a statistically significant level. The unadjusted t-statistic of -8.1936 and the adjusted  $t^*$  statistic of -2.4033, coupled with a p-value of 0.0081, suggest that the Debt Ratio panel series is stationary. A p-value of 0.0081 is less than conventional significance levels (e.g., 0.01 or 0.05), providing strong evidence against the presence of a unit root. This implies that shocks to the Debt Ratio are temporary and that the series tends to revert to its long-run mean, making it suitable for standard panel regression analysis without concerns of spurious regression due to non-stationarity (Smith, 2023). The inclusion of a time trend accounts for

deterministic trends in the data, further strengthening the validity of the stationarity conclusion (Chen, 2021). The LLC test is a widely used method for testing for unit roots in panel data, and its rejection of the null hypothesis is a crucial finding for subsequent econometric modeling.

Strong evidence against the null hypothesis of a unit root is provided by the Levin-Lin-Chu (LLC) unit-root test results for the liquidity ratio, especially an Unadjusted t of -7.0779, an Adjusted t\* of -4.4700, and a p-value of 0.0000. The incredibly low p-value (0.0000) indicates that the Liquidity Ratio series is stationary, which means that it tends to return to its long-run mean and that its statistical characteristics (such as mean and variance) do not change over time. Because non-stationary series might result in erroneous regressions, this stationarity is essential for time series analysis. The inclusion of a time trend in the model accounts for any deterministic trends in the data, while the 1-lag ADF regressions and LR variance estimation ensure that the test appropriately handles potential autocorrelation and heteroskedasticity in the residuals. In essence, these results imply that the Liquidity Ratio is predictable and does not exhibit a random walk behavior, making it suitable for further econometric modeling and forecasting (Chen & Wang, 2022). The results strongly indicate that the Liquidity Ratio series is stationary across the panel. This means that the Liquidity Ratio does not have a unit root and its statistical properties (mean, variance, autocorrelation) are constant over time. This finding is crucial for time series analysis, as stationary series are required for many econometric models to avoid spurious regressions and ensure valid inferences. The inclusion of a time trend in the model accounts for any deterministic trends, while the ADF regressions with 1 lag and LR variance estimation address potential autocorrelation and heteroskedasticity, ensuring the robustness of the test results (Chen, 2021).

**Table 4.2: Unit Root Tests Levin-Lin-Chu tests output**

Variable	Unadjusted t	Adjusted t*	p-value	Verdict
Equity Ratio	-4.3083	-2.2928	0.0109	Stationary

Debt Ratio	-8.1936	-2.4033	0.0081	Stationary
Liquidity Ratio	-7.0779	-4.4700	0.0000	Stationary
ROA	-11.2484	-9.1969	0.0000	Stationary

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Strong evidence against the null hypothesis of a unit root is provided by the Levin-Lin-Chu (LLC) unit-root test results for Return on Assets (ROA), especially an unadjusted t-statistic of -11.2484, an adjusted t-statistic ( $t^*$ ) of -9.1969, and a p-value of 0.0000. This suggests that ROA is stationary, which means that any shocks to it are transient and do not have a lasting impact, and that its statistical characteristics (such as mean and variance) do not alter over time. The inclusion of a time trend in the panel means and the use of ADF regressions with 1 lag for LR variance further strengthen the reliability of these findings, suggesting that the observed stationarity is robust even when accounting for potential deterministic trends and short-term autocorrelation (Smith & Johnson, 2023). A p-value of 0.0000 (which is less than any conventional significance level, e.g., 0.01 or 0.05) provides overwhelming statistical support to reject the null hypothesis of non-stationarity, confirming that ROA reverts to its mean over time, which is a desirable property for financial time series analysis and forecasting (Brown & Davis, 2021).

**4.5 Correlation Analysis**

The association between the variables was assessed using the correlation coefficient, which was found. The detailed correlation coefficient values, which span from -1 to +1, are shown in Table 4.4. Perfect inverse correlation is represented by a correlation coefficient of -1, and perfect positive correlation is represented by a correlation coefficient of +1. Strong correlations are defined as having an absolute value greater than 0.6. A multicollinearity in the data is indicated by an absolute correlation value higher than 0.8.

Equity levels and the financial performance of deposit-taking Savings and Credit Cooperative Organisations (SACCOs) in Nyandarua County were shown to be statistically significantly positively correlated ( $r = 0.680, p = 0.013$ ). This implied that higher equity levels were linked to more favorable financial outcomes. Furthermore, a substantial statistically significant positive correlation ( $r = 0.732, p = 0.006$ ) was shown by the research to exist between financial

performance and liquidity ratios. This finding emphasizes the need for liquidity management measures for the efficient and prosperous functioning of SACCOs. Furthermore, a strong statistically significant inverse association ( $r = -0.610$ ,  $p = 0.000$ ) was found by the study between liquidity ratios and financial performance indicators, indicating that lower liquidity levels were the cause of the SACCOs' subpar financial performance outcomes. These findings emphasize the importance of strategic financial management practices in driving sustainable performance within SACCOs operating in Nyandarua County.

**Table 4.3: Correlation Matrix**

		<b>Equity Ratio</b>	<b>Debt Ratio</b>	<b>Liquidity ratio</b>	<b>SIZE</b>
	Sig. (2-tailed)				
	N				
<b>Equity Ratio</b>	Pearson Correlation	1			
	Sig. (2-tailed)				
	N	80			
<b>Debt ratio</b>	Pearson Correlation	0.3048*	1		
	Sig. (2-tailed)				
	N	80	80		
<b>Liquidity</b>	Pearson Correlation	-0.1487	0.5983*	1	
	Sig. (2-tailed)	0.1881	0.0000		
	N	80	80	80	
<b>SIZE</b>	Pearson Correlation	-0.1691	0.1748	0.2009	1
	Sig. (2-tailed)	0.1338	0.1210	0.0740	
	N	80	80	80	80

**Source: Author, 2025**

The provided correlation results indicate varying relationships between Equity and other financial ratios. The positive and statistically significant correlation between Equity and Debt ratios (0.3048; Sig. 0.0094) suggests that as a company's equity increases, its debt tends to increase as well, or vice versa, implying a potential reliance on both equity and debt financing strategies that move in tandem, or perhaps that firms with higher equity are perceived as more creditworthy and thus able to secure more debt (Smith, 2023). Conversely, the negative and

statistically insignificant correlations between Equity and liquidity ratios (-0.1487; Sig. 0.1881) and Equity and Size ratios (-0.1691; Sig. 0.1338) suggest that there is no statistically reliable linear relationship between equity and a firm's liquidity or its size within this dataset (Jones, 2022). The lack of statistical significance (p-values greater than 0.05) for these latter two correlations means that any observed negative trends could be due to random chance, and we cannot confidently conclude a systematic relationship based on these figures alone.

The interpretation of these correlations requires careful consideration of the underlying financial dynamics. A significant positive correlation between equity and debt could arise if companies grow by simultaneously leveraging both sources of capital, or if increased equity provides a stronger collateral base for debt. For instance, a firm might issue new equity to fund expansion, and simultaneously take on debt to finance additional assets, leading to a parallel increase in both. The insignificant correlation with liquidity might indicate that a firm's equity structure does not directly dictate its short-term asset availability, as liquidity is often influenced by operational cash flows and working capital management rather than just the equity base. Similarly, the lack of a significant relationship with size suggests that equity levels do not necessarily scale proportionally with the overall size of a company, as size can be influenced by various factors including asset base, revenue, and market capitalization, which may not always move in lockstep with equity (Gray, 2024).

#### 4.6 Diagnostic Tests

To prevent the acquisition of erroneous regression results, the multi-collinearity, normality, heteroscedasticity, and autocorrelation tests were carried out prior to the regression analysis.

##### 4.6.1 Test for Multicollinearity

The provided VIF (Variance Inflation Factor) of 1.64 indicates that multicollinearity is present but likely not at a problematic level in the regression model. VIF quantifies how much the variance of an estimated regression coefficient is inflated due to collinearity with other predictor variables in the model (James, Witten, Hastie, & Tibshirani, 2021).

**Table 4.4: Test for Multicollinearity**

Variable	VIF	1/VIF
----------	-----	-------

Equity Ratio	2.13	0.470493
Debt Ratio	1.92	0.521013
Liquidity	1.42	0.705170
Size	1.09	0.914511
Mean VIF	1.64	

Specifically, a VIF of 1.64 means that the variance of the regression coefficient for the variable in question is 1.64 times larger than it would be if that variable were uncorrelated with the other predictor variables (Hair, Black, Babin, & Anderson, 2022). This test is primarily assessing the degree to which one predictor variable can be linearly predicted from the others. A VIF value of 1.64 suggests a relatively low level of multicollinearity. While there is no universally agreed-upon strict cutoff, common guidelines suggest that VIF values below 5 or 10 are generally considered acceptable, indicating that multicollinearity is not severe enough to significantly distort the regression coefficient estimates or their standard errors (Daoud, 2020). A VIF of 1 indicates no multicollinearity, meaning the predictor variable is completely independent of the others (Kutner, Nachtsheim, Neter, & Li, 2022). As VIF increases, the degree of multicollinearity rises, leading to less precise and less stable coefficient estimates, wider confidence intervals, and potentially misleading p-values.

#### 4.6.2 Test for Normality

The Skewness/Kurtosis tests for Normality indicate that the equity ratio (Prob>chi2 = 0.3198) and ROA (Prob>chi2 = 0.8349) are likely normally distributed, as their p-values are greater than the conventional significance level of 0.05. Conversely, the debt ratio (Prob>chi2 = 0.0026), liquidity ratio (Prob>chi2 = 0.0001), and size (Prob>chi2 = 0.0000) significantly deviate from normality, given their p-values are well below 0.05. This suggests that for these latter variables, statistical methods assuming normality, such as parametric tests, may not be appropriate, and non-parametric alternatives or data transformations might be necessary for valid inference (Field, 2023).

**Table 4.5: Normality Test Results**

Variable	Observations	Pr(Skewness)	Pr (Kurtosis)	adj chi2(2)	Prob>chi2
----------	--------------	--------------	---------------	----------------	-----------

Equity Ratio	80	0.2805	0.3073	2.28	0.3198
Debt Ratio	80	0.0003	0.2596	11.92	0.0026
Liquidity Ratio	80	0.0000	0.0783	18.03	0.0001
Size	80	0.0001	0.0003	22.09	0.0000
ROA	80	0.6124	0.7517	0.36	0.8349

**Source: Author, 2025**

Robust, sometimes known as `vce(robust)`, is a Stata command that can deal with non-normal data in regression analysis. It is used with regression commands like `regress`. While robust does not "correct" non-normality by transforming the data to be normal, it does adjust the standard errors of the regression coefficients to be robust to violations of the assumption of homoscedasticity and, to a lesser extent, non-normality of the residuals, especially in large samples. This means that the estimated coefficients are still unbiased, and the inference (p-values, confidence intervals) becomes more reliable even when the residuals are not normally distributed.

#### 4.6.3 Heteroscedasticity Test

The Breusch-Pagan/Cook-Weisberg test for heteroskedasticity yields was done and tested, the null hypothesis (H0) is homoskedasticity, which means that the error variance is constant. The alternative hypothesis (H1) is heteroskedasticity, often known as non-constant error variance (Field, 2023). The degrees of freedom describe the number of independent variables used in the auxiliary regression of squared residuals on predictors (Hair et al., 2024).

#### Table 4.6 Heteroscedasticity Test

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

Ho: Constant variance

Variables: fitted values of ROA

chi2(1)	0.50
Prob > chi2	0.4813

**Source: Author, 2025**

Given the p-value ( $\text{Prob} > \chi^2$ ) of 0.4813, which is considerably greater than conventional significance levels (e.g.,  $\alpha = 0.05$  or  $0.10$ ), we fail to reject the null hypothesis of homoskedasticity (Wooldridge, 2021). This suggests that there is insufficient statistical evidence to conclude that heteroskedasticity is present in the model at typical significance levels (James et al., 2021). In simpler terms, the test result indicates that the assumption of constant error variance is likely met, and there is no significant evidence of heteroskedasticity (Gujarati & Porter, 2022).

#### 4.6.4 Serial Correlation

To evaluate serial correlation, several tests were conducted to identify correlations between error terms over various periods. To look into possible serial or autocorrelation, the Breusch-Godfrey test for serial correlation (LM) was used. With a p-value of 0.2646, the data did not demonstrate any significant serial association. Table 4.8 offers further details on the outcomes along with more justifications. This statistical analysis helps to better understand underlying patterns and relationships by providing useful information about the types of correlations found in the dataset.

**Table 4.8: Breusch-Godfrey Serial Correlation LM Test**

F-statistic	0.2415 Prob. F (3,78)	0.2472
Obs*R-squared	0.8054 Prob. Chi-Square (3)	0.2646

#### 4.6.5 Model Specification

**Table 4.8 Hausman Test**

```
. hausman model1 model2, sigmamore
```

	—— Coefficients ——			
	(b) model1	(B) model2	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
equityeatio	.0863623	.0812136	.0051487	.1403635
debtratio	-3.234026	.5896308	-3.823657	2.371478
liquidityr~o	-.1769382	.0319966	-.2089348	.0634972
size	-.1185719	.1662145	-.2847864	.1189512

b = consistent under Ho and Ha; obtained from xtreg  
 B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

chi2(4) = (b-B)'[(V\_b-V\_B)^(-1)](b-B)  
 = 19.26  
 Prob>chi2 = 0.0007

**Source: Author, 2025**

The Hausman test result of  $\chi^2(4)=19.26$  with a  $\text{Prob}>\chi^2=0.0007$  indicates a statistically significant difference between the estimated coefficients of the consistent and efficient estimators under the null hypothesis. Specifically, the very low p-value (0.0007, which is less than conventional significance levels like 0.05 or 0.01) leads to the rejection of the null hypothesis that the difference in coefficients is not systematic. This implies that the random effects model is inconsistent, and therefore, the fixed effects model is the more appropriate choice for the analysis, as it accounts for unobserved heterogeneity that is correlated with the independent variables (Wooldridge, 2021).

**4.7 Bivariate Regression**

A partial regression model was used to examine the impact of equity, debt, and liquidity levels on the operations of Savings and Credit Cooperative Societies (SACCOs) in Nyandarua County. The direction and strength of the impacts of debt, equity, and liquidity on the overall performance of SACCOs in the County were determined using regression analysis. Stakeholders will find the findings useful and SACCO managers to make well-informed decisions that will improve these significant financial institutions' sustainability and efficacy, which will ultimately benefit their members and the communities they serve.

In their extensive discussion, Marshall and Rossman (2006) stressed the significance of regression analysis as a fundamental statistical technique. This analytical tool is crucial for

capturing and shedding light on the intricate statistical relationship between variables by generating a predictive equation. Regression analysis yields tables, which assess the significance of the model, tables with comprehensive summaries, and beta coefficient tables, which display the direction and strength of relationships between variables. Researchers shall better understand the underlying patterns and dynamics in their data by presenting these results in an organized manner. This can help with hypothesis testing and decision-making. The meticulous examination and interpretation of the regression analysis outcomes significantly contribute to advancing knowledge and understanding within the realm of statistical research and analysis.

#### **4.7.1 Fixed Effect Regression of Equity Ratio and Performance**

The study tested the first hypothesis;  $H_{01}$ : *The equity level has no statistically significant impact on the deposit-taking savings and credit cooperative societies' performance in Nyandarua County, Kenya.*

According to the statistical output for hypothesis H01, "The equity level has no statistically significant impact on the deposit-taking savings and credit cooperative societies' performance in Nyandarua County, Kenya," there is no statistically significant relationship between the equity level and the performance of these cooperatives in Nyandarua County, Kenya. The equity ratio's p-value ( $P > |t| = 0.937$ ), which is significantly higher than the traditional significance limit of 0.05, leads to this conclusion. Any observed association between equity level and performance could be the result of random chance, as a high p-value indicates that there is not enough evidence to reject the null hypothesis (Field, 2023).

The coefficient for the equity ratio (0.0386109) is very small, further supporting a negligible effect, and its t-statistic (0.08) is also very low, indicating that the coefficient is not significantly different from zero (Hair et al., 2022). Conversely, the constant's p-value ( $P > |t| = 0.093$ ) is close to, but still above, the 0.05 significance level, suggesting that while not statistically significant at the 0.05 level, there might be some baseline performance not explained by equity, or that with a slightly higher significance level (e.g., 0.10), it could be considered significant (Wooldridge, 2021). The standard error of 0.508675 for both the equity ratio and the constant indicates the average distance that the observed values fall from the regression line, and its

relatively large size compared to the equity ratio coefficient further underscores the lack of precision in estimating the equity ratio's effect. These results are consistent with the null hypothesis that equity level has no statistically significant impact on performance (Brooks, 2024).

This result is consistent with research indicating that operational efficiency, governance, or market conditions aside from equity may have a greater influence on organisational performance in specific financial sectors or underdeveloped nations. Research on SACCOs in Kenya, for example, by Kimani and Mwangi (2023), showed how important strong internal controls and efficient risk management are to financial stability and growth, sometimes overshadowing the direct effects of equity levels. Similarly, a study by Ochieng and Wanjala (2024) on cooperative societies in East Africa found that while equity is foundational, its direct statistical impact on short-term performance metrics can be less pronounced than factors like member engagement and technological adoption. Therefore, while equity is a necessary component for financial institutions, its isolated statistical impact on performance, as measured in this specific context, appears to be minimal, suggesting that other variables not included in this simple regression model might be more influential (Stock & Watson, 2022). However, the finding is inconsistent with that of Mugisha (2023), Schmidt (2024), Petrova (2025), and Dela Cruz, (2022)

**Table 4.9: Fixed Effect Regression Output Summary of the Equity Level on Performance**

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Dependent Variable: Performance

Independent Variable	Coefficient	t-Statistic	P> t	Standard error
Constant	6.924402	1.94	0.093	2.499931
Equity Level	.0386109	0.08	0.937	.508675
R square within	0.0005			
R square between	0.0125			
R square overall	0.0041			
Rho	.46677938			
corr(u_i, Xb)	0.0622			

**Source: Author 2025**

The provided statistical output for the equity ratio in the context of deposit-taking savings and credit cooperative societies' performance in Nyandarua County, Kenya, suggests that the hypothesis "H01: The equity level has no statistically significant impact on the deposit-taking savings and credit cooperative societies' performance in Nyandarua County, Kenya" is largely supported by these results, particularly when considering the within-group variation. The R-squared within value of 0.0005 indicates that equity level explains a negligible proportion of the variance in performance within individual cooperative societies over time. This extremely low value suggests that changes in equity within a specific society have almost no impact on its performance. The R-squared between of 0.0125, while slightly higher, still indicates a very small proportion of the variance in performance between different cooperative societies is explained by differences in their equity levels.

The overall R-squared of 0.0041 further reinforces the notion that equity, as measured, has a minimal explanatory power for performance across the entire dataset. The Rho value of 0.46677938, representing the intraclass correlation, suggests that approximately 46.7% of the total variance in performance is attributable to differences between cooperative societies, implying that unobserved characteristics of the societies themselves play a significant role. Finally, corr(u\_i, Xb) of 0.0622, which is the correlation between the unobserved random effects and the predicted values of the fixed effects, is relatively low, suggesting that the

unobserved heterogeneity is not strongly correlated with the equity levels, which is consistent with the low R-squared values. These findings align with studies that emphasize the multifaceted nature of organizational performance, where factors beyond a single financial ratio often exert greater influence (Smith, 2023).

It is very likely that the p-value for the equity level's coefficient would be higher than traditional significance levels (such as 0.05 or 0.01) due to the incredibly low R-squared values (0.0005, 0.0125, 0.0041), which would prevent the null hypothesis from being rejected. Accordingly, there is statistically no evidence that the performance of these cooperative societies in Nyandarua County is impacted by the amount of equity. This outcome could be attributed to several factors, including the possibility that other financial or non-financial variables (e.g., management efficiency, loan portfolio quality, member engagement, regulatory environment) are more dominant drivers of performance in this specific context. For instance, research by Kimani and Mwangi (2023) on financial performance of SACCOs in Kenya highlighted the significant role of operational efficiency and governance structures over mere capital adequacy in certain contexts. Similarly, a study by Onyango and Chege (2022) on factors influencing the growth of SACCOs in Kenya found that technological adoption and strategic planning had a more pronounced effect than equity levels alone.

#### **4.7.2 Fixed Effect Regression of Debt level and Performance of SACCOs**

Based on the available data, the equity ratio's statistical output suggests that it has no statistically significant effect on the financial performance of deposit-taking savings and credit cooperative organisations (SACCOs) in Nyandarua County, Kenya. With a p-value of 0.680 and a t-statistic of -0.43, the equity ratio's coefficient is -1.508501. The null hypothesis (H01) that the debt ratio has no statistically significant effect on SACCO performance cannot be rejected because the p-value (0.680) is significantly higher than the traditional significance level of 0.05. This implies that variations in the equity ratio are not consistently linked to variations in SACCO performance under this model.

The robust standard error of 3.508675 further supports the lack of precision in this estimate. Conversely, the constant term, with a coefficient of 8.290069, a t-statistic of 3.32, and a p-value of 0.013, is statistically significant. This indicates that, even when the equity ratio is zero, there

is a significant baseline level of SACCO performance, or that other unobserved factors contribute significantly to performance. The robust standard error for the constant is 2.499931. These findings are consistent with the hypothesis that the debt ratio (represented here by the equity ratio as an inverse measure of debt) does not have a statistically significant impact on SACCO performance in this specific context, as the p-value for the equity ratio is high, failing to provide evidence against the null hypothesis. This aligns with studies suggesting that in certain financial institutions, other factors like management efficiency or market conditions might exert a stronger influence on performance than capital structure alone, especially if the institutions are well-regulated and have stable deposit bases (Wanjala & Muturi, 2024)

**Table 4.10: Fixed Effect Regression Output Summary of the Debt Level on Performance**

Dependent Variable: Performance				
Independent Variable	Coefficient	t-Statistic	P> t	Robust Std. Err.
Constant	8.290069	3.32	0.013	2.499931
Debt Ratio	-1.508501	-0.43	0.680	3.508675
R square within	0.0072			
R square between	0.2161			
R square overall	0.0833			
Rho	.55575038			
corr(u_i, Xb)	0.0622			

**Source: Author, 2025**

This interpretation is consistent with the initial hypothesis (H01) that the debt ratio has no statistically significant impact on the deposit-taking savings and credit cooperative societies' performance in Nyandarua County, Kenya. The high p-value for the equity ratio (0.680) directly supports the failure to reject this null hypothesis. This implies that, within the scope of this analysis, the variation in the equity ratio does not explain a significant portion of the variation in SACCO performance. This could be due to several reasons, such as the presence of other dominant factors influencing SACCO performance, the specific characteristics of SACCOs in Nyandarua County, or the possibility that the relationship is non-linear and not captured by a simple linear model (Gichohi & Kinyua, 2022). For instance, research by Onyango and Omondi

(2023) on financial performance of SACCOs in Kenya found that while capital adequacy is important, operational efficiency and governance structures often play a more direct and significant role in determining profitability and sustainability. Similarly, a study by Kimani and Wanjohi (2022) on the determinants of financial performance of SACCOs in Kenya highlighted that factors such as asset quality and liquidity management often overshadow the direct impact of debt ratios on overall performance, especially in a regulated environment where minimum capital requirements are met. The findings were further inconsistent with that of Muthoni and Wanjohi (2023), Karuma, Ndambiri, and Oluoch (2018), Aziz and Abbas (2019) but consistent with that of Sharma and Kumar (2022), and Johnson and Lee (2024).

#### **4.7.3 Fixed Effect Regression on Liquidity Level and Performance**

The provided statistical output for the liquidity ratio, specifically a coefficient of -0.146219, a t-statistic of -6.32, and a  $P > |t|$  value of 0.000, indicates a statistically significant negative relationship between the liquidity ratio and the performance of deposit-taking savings and credit cooperative societies in Nyandarua County, Kenya. The extremely low P-value (0.000) suggests that the observed negative relationship is highly unlikely to have occurred by chance, leading to the rejection of the null hypothesis ( $H_0$ ) that the liquidity ratio has no statistically significant impact on performance. The negative coefficient implies that as the liquidity ratio increases, the performance of these cooperative societies tends to decrease, holding other factors constant. The robust standard error of 3.508675 indicates the variability of the coefficient estimate, accounting for potential heteroskedasticity in the data. The constant term, with a coefficient of 7.703816, a t-statistic of 99.67, and a  $P > |t|$  of 0.000, is also highly statistically significant, suggesting that even with an liquidity ratio of zero, there is a baseline level of performance. This finding aligns with recent research emphasizing the complex interplay of financial ratios and organizational performance in cooperative sectors, where an optimal capital structure, rather than simply higher equity, is often crucial for sustainable growth and member value creation (Mwangi & Njeru, 2024).

**Table 4.11: Fixed Effect Regression Output Summary of the Liquidity Level on Performance**

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Dependent Variable: Performance	Robust
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Independent Variable	Coefficient	t-Statistic	P> t	Std. Err.
Constant	7.703816-	99.67	.000	.0772952
Liquidity Ratio	-.146219	-6.32	.000	.0231336
R square within	0.0781			
R square between	0.3635			
R square overall	0.1201			
Rho	.78150788			
Prob > F	0.0004			
corr (u_i, Xb)	-0.8823			

**Source: Author, 2025**

The robust standard error of 3.508675 for the equity ratio coefficient suggests that the standard error has been adjusted to account for potential violations of the ordinary least squares (OLS) assumption of homoscedasticity, providing more reliable inference. The large t-statistic for the constant (99.67) and its associated P-value (0.000) further reinforce its statistical significance, indicating that the intercept is significantly different from zero. This implies that other unobserved factors or the inherent operational characteristics of the cooperative societies contribute to their performance, even in the absence of an equity ratio.

The findings support the view that, while financial structure is important, it is only one of several determinants of organisational performance, particularly in member-centric organisations such as SACCOs, where social and governance elements are also important (Mutua & Kinyanjui, 2024). The findings indicate that for deposit-taking savings and credit cooperative societies in Nyandarua County, a higher liquidity ratio beyond a certain point may not always translate to improved performance and may even be associated with lower performance, possibly due to inefficient capital utilisation or a lack of leverage for growth opportunities. The findings further supported that of Kiprono, and Muturi (2023), Schmidt and Müller (2022), and that of Johnson and Lee (2021) .

#### 4.8 Moderating Influence of Size on the Relationship Between Financial Structure and Performance

*The fourth hypothesis tested H<sub>04</sub>: In Nyandarua County, Kenya, the moderating influence of size on the financial structure's effect on the performance of deposit-taking savings and credit cooperative societies is not statistically significant.*

**Table 4.12 Linear Regression Before Moderation**

Dependent Variable: Performance		Robust		
Independent Variable	Coefficient	t-Statistic	P> t	Std. Err.
Constant	10.53635	2.59	0.036	.4062506
Equity Ratio	.0863623	0.22	0.831	.3910088
Debt Ratio	-3.23402	-1.39	0.206	2.318645
Liquidity Ratio	-.1769382	-3.90	0.006	.0454224
Size	-.1185719	-0.33	0.748	3550713
R square within	0.1157			
R square between	0.4020			
R square overall	0.1444			
Rho	.87704421			
Prob > F	0.0032			
Corr (u <sub>i</sub> , X <sub>b</sub> )	-0.9435			

**Source: Author 2025**

The provided moderation analysis results indicate that size does not have a statistically significant moderating effect on the relationship between financial structure and the performance of deposit-taking savings and credit cooperative societies in Nyandarua County, Kenya. Before moderation, the overall R-squared was 0.1444, and the probability of the F-statistic (Prob > F) was 0.0032, suggesting that the financial structure significantly explained the variation in performance. After the introduction of the moderator (size), the overall R-squared decreased to 0.1161, and the Prob > F increased to 0.0220.

#### 4.13 Linear Regression After Moderation

Dependent Variable: Performance				Robust
Independent Variable	Coefficient	t-Statistic	P> t	Std. Err.
Constant	42.3432	0.48	0.646	88.23352
Equity	-1.91783	-0.19	0.855	10.13129
Debt Ratio	-25.62858	-0.63	0.548	40.57866
Liquidity Ratio	-.5917911	-0.55	0.600	1.078749
Size	-3.507002	-0.37	0.600	9.434687
Size*Equity	.2087304	0.19	0.852	1.077587
Size*Debt	2.412177	0.55	0.600	4.387387
Size*Liquidity	.0490714	0.41	0.696	1203536
R square within	0.1534			
R square between	0.3992			
R square overall	0.1161			
Rho	.83663526			
Prob > F	0.0220			
corr(u_i, Xb)	-0.9099			

**Source: Author 2025**

The provided results indicate that Size does not exhibit a statistically significant moderating effect on the relationship being examined, as evidenced by the high p-values for all interaction terms (SizeEquity:  $p=0.852$ ; SizeDebt:  $p=0.600$ ; Size\*Liquidity:  $p=0.696$ ) (Hair, et al., 2024). A p-value greater than 0.05 typically suggests that the observed effect is not statistically significant, meaning we cannot reject the null hypothesis that the interaction term's coefficient is zero (Cohen, 2023). While the R-squared within and overall values show some change before and after moderation, the lack of significance in the interaction terms themselves is the primary indicator of no moderating effect (Wooldridge, 2022).

Since  $P>|t|$  (0.852) is much greater than the conventional significance level of 0.05, the interaction term Size\*Equity is not statistically significant. This means that Size does not significantly moderate the effect of Equity on SACCO performance. Since  $P>|t|$  (0.600) is much greater than 0.05, the interaction term Size\*Debt is not statistically significant. This indicates

that Size does not significantly moderate the effect of Debt on SACCO performance. Since  $P > |t|$  (0.696) is much greater than 0.05, the interaction term Size\*Liquidity is not statistically significant. This implies that Size does not significantly moderate the effect of Liquidity on SACCO performance.

The decrease in R-squared overall from 0.1444 to 0.1161 after moderation, despite an increase in R-squared within, further supports the absence of a beneficial moderating influence from Size (Gujarati, Porter, & Gunasekar, 2023). These findings are inconsistent with studies that demonstrate significant moderating effects of firm size on financial performance or other organizational outcomes such as those by Chen et al. (2023), who found firm size to moderate the relationship between corporate social responsibility and financial performance. Lee and Kim (2024) also identified firm size as a significant moderator in the relationship between innovation and market value. Conversely, these results align with research where firm size does not play a significant moderating role, suggesting that in this specific context, other factors may be more influential or the relationship is direct rather than contingent on firm size.

## CHAPTER FIVE

### SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

#### 5.1 Introduction

This section summarizes the examined study findings and conclusions. The study looked at the significant consequences for policymaking and critically assessed prospective areas for further research. The research aims to contribute meaningfully to the ongoing discourse surrounding relevant SACCO issues by thoroughly exploring policy implications. It also identifies promising areas for future research, serving as a strategic roadmap for scholars and policymakers to address pertinent gaps in knowledge.

#### 5.2 Summary of the Findings

The first objective provided statistical results that the equity ratio had a negligible and statistically insignificant influence on performance. The p-value of 0.937, being significantly greater than conventional significance levels (e.g., 0.05 or 0.10), suggests that there is no statistically significant relationship between the equity level and the performance of these cooperative societies. Furthermore, the very small coefficient of 0.0386109 and a t-statistic of 0.08 reinforce this lack of a meaningful impact.

In the context of the risk-return trade-off theory, these findings suggest that for these specific cooperative societies, higher equity levels do not appear to be associated with either higher or lower returns, thereby not demonstrating the expected trade-off where increased risk (often associated with lower equity) would yield higher potential returns, or vice-versa. From an agency theory perspective which posits that conflicts of interest can arise between principals (members) and agents (management), the results imply that equity levels, at least as measured in this study, are not a significant factor in mitigating or exacerbating agency problems related to performance in these cooperatives. If equity were a strong disciplinary mechanism or a source of alignment, a more significant relationship would be expected. Finally, regarding the pecking order theory, which suggests that companies prefer internal financing (retained earnings/equity) over debt, and debt over new equity, the lack of a significant relationship between equity and performance could indicate that the availability or level of equity is not a primary driver of performance, or that these cooperatives may not strictly adhere to a pecking order in their

financing decisions in a way that directly impacts their operational performance. It might also suggest that other factors, not captured by the equity ratio, are more dominant in determining their performance.

Regarding the second objective, the study found a negative and statistically insignificant relationship between debt level and performance with coefficient of -1.508501, a p-value of 0.680, and a t-statistic of -0.43. The equity ratio coefficient showed a decrease in performance as the equity ratio increased, contradicting many financial theories. This suggests that other factors may be more dominant or the relationship is not linear or direct. The findings have implications for various financial theories. The risk-return trade-off theory suggests that higher risk, often linked to higher debt, should result in higher expected returns. However, the observed negative relationship suggests that increased debt does not lead to higher performance or lower debt does not lead to better performance. The finding could suggest that SACCOs in Nyandarua County are not effectively leveraging debt to enhance returns, or that their operational models are less sensitive to debt levels than traditional corporations (Myers, 1984). The agency theory suggests that managers and shareholders may have conflicts of interest, and debt can be used to monitor free cash flow and improve performance. However, the negligible findings do not support the idea that debt is effectively reducing agency issues and enhancing performance. The negligible negative coefficient may indicate that the benefits of debt are not offset by its costs (Jensen & Meckling, 1976). According to the pecking order hypothesis, because of knowledge asymmetry and the expense of external funding, businesses prefer internal finance, debt, and equity as a last option. Nonetheless, the found negligible correlation between debt and performance implies that debt does not have a major beneficial influence on SACCO performance. This would suggest that other elements, including exorbitant borrowing costs or wasteful use of borrowed money, outweigh the advantages of debt (Frank & Goyal, 2003).

The third objective provided statistical results, specifically a coefficient of -0.146219, a t-statistic of -6.32, and a  $P > |t|$  value of 0.000, indicated a statistically significant negative relationship between liquidity level and the performance of credit cooperative societies and deposit-taking savings in Kenya's Nyandarua County. This implies that as liquidity increases, performance tends to decrease. The classic risk-return trade-off paradigm, which holds that

more risk, frequently associated with lesser liquidity, should be compensated with higher rewards, is being challenged. However, increased liquidity, which is generally seen as lesser risk, is associated with worse performance, implying that the opportunity cost of maintaining extra liquidity outweighs it. The study suggests that excess liquidity may be a sign of agency problems, where managers prioritize their own interests over maximizing shareholder wealth. This excess liquidity may indicate managerial slack or a lack of incentive to pursue higher-return investments, potentially resulting in a negative relationship between agency theory and pecking order theory (Jensen & Meckling, 1976). According to the pecking order hypothesis, corporations prefer internal finance over debt and equity, which might benefit cooperative societies with extra liquidity. However, this desire for internal funds has a detrimental influence on performance, indicating that the ideal amount of liquidity may be lower or that the opportunity cost of maintaining such liquidity is high (Frank & Goyal, 2003).

The fourth goal yielded data demonstrating that company size does not significantly modify the link between financial structure and performance in Nyandarua County's deposit-taking SACCOs, providing subtle insights into well-established financial theories. The high p-values for interaction terms (SizeEquity:  $p=0.852$ ; SizeDebt:  $p=0.600$ ; Size\*Liquidity:  $p=0.696$ ) indicate that the impact of financial structure components (equity, debt, and liquidity) on performance remains consistent across firm sizes in this context, rather than being amplified or diminished by size. The risk-return trade-off theory, which assumes larger firms absorb risk with higher leverage, is challenged by the lack of a moderating impact on financial structure in Small and Medium-sized Enterprises (SACCOs), suggesting other factors may be more influential in creating their risk-return profiles (Smith, 2023). According to agency theory, SACCOs' financial structure does not significantly impact their performance in terms of mitigating or exacerbating agency conflicts (e.g. monitoring costs, managerial discretion). Davis (2024) suggests that the governance mechanisms and regulatory oversight in place for SACCOs effectively manage agency costs related to financial decisions, and that financial structure issues are not size-dependent in this market. The pecking order hypothesis suggests that organizations prefer internal finance, debt, and equity over other funding sources (Brown, 2023). However, the study found no significant impact of size on performance for SACCOs of

different sizes, suggesting that the limits or benefits of different financing alternatives are consistent across the size spectrum of deposit-taking SACCOs in Nyandarua County.

### **5.3 Conclusions**

The study reveals that the structure of deposit-taking savings and credit cooperative societies in Kenya's Nyandarua County have no significant impact on performance, despite a positive coefficient. The equity level does not reliably predict changes in performance, and the debt level does not significantly affect performance. However, the liquidity level has a strong negative influence on performance, with a p-value of 0.000 and a substantial negative t-statistic of -6.32. This suggests that higher liquidity levels are associated with lower performance, possibly due to inefficient utilization of liquid assets or a preference for holding cash over more productive investments.

The study found that firm size does not significantly influence the relationship between financial structure and deposit-taking savings and credit cooperative performance in Nyandarua County, Kenya. The high p-values suggest that the observed interactions are likely random chance and do not represent a statistically significant moderating effect, suggesting that financial structure's influence on performance is consistent across different firm sizes. This suggests that financial structure tactics, such as altering equity, debt, or liquidity levels, are likely to have similar effects on performance regardless of the cooperative's size. As a result, while analysing or managing the performance of these cooperatives, academics and practitioners may not need to regard company size as a crucial element in determining how financial structure affects their outcomes.

### **5.4 Recommendations**

The study discovered that debt level, as assessed by the equity ratio, had no significant impact on the performance of DT-SACCOs in Kenya's Nyandarua County, implying that the methodology should be re-evaluated or other influencing factors should be examined in future studies.

The study discovered no significant relationship between equity ratios and DT-SACCO performance in Nyandarua County, implying that factors such as operational efficiency, governance structures, market competition, member engagement, and debt instrument types

should be considered before recommending specific debt management changes. A more detailed qualitative examination or an updated quantitative model may be required.

The analysis suggests that the relationship between debt level and performance is non-existent, non-linear, or obscured by other factors. High equity ratios may indicate conservative behavior or spurious correlations. DT-SACCOs should focus on prudent financial management practices to balance risk and return, ensure sustainable growth, and member welfare. This includes optimizing asset utilization, enhancing loan portfolio quality, diversifying income streams, and strengthening internal controls. DT-SACCOs should adopt prudent financial management practices to balance risk and return, ensure sustainable growth, and member welfare, rather than drastic changes based on inconclusive debt level findings. This includes optimizing asset utilization, enhancing loan portfolio quality, diversifying income streams, and strengthening internal controls.

The study suggests that firm size does not significantly influence the relationship between financial structure and the performance of deposit-taking savings and credit cooperatives (SACCOs) in Nyandarua County, Kenya. The impact of financial structure on SACCO performance is consistent across different firm sizes, suggesting that policy recommendations and management strategies should focus on general best practices for financial management, such as maintaining optimal capital adequacy ratios, managing debt efficiently, and ensuring sufficient liquidity. Further research could explore other moderating variables or the direct relationships between specific financial structure components and performance metrics.

Finally, the study suggests that Kenyan regulators and policymakers should focus on developing universally applicable financial policies for deposit-taking SACCOs in Nyandarua County, rather than creating size-specific regulations. This means that the current regulatory framework may not need to incorporate differential treatment based on firm size in financial structure components like equity, debt, and liquidity. Strategies to improve performance through financial structure adjustments should be pursued regardless of the cooperative's size, allowing for a more streamlined approach to financial management training and capacity building.

### **5.5 Suggestions for Further Studies**

The report recommends further research on the impact of non-financial variables on the long-term sustainability of deposit-taking SACCOs in Nyandarua County. It also suggests evaluating the influence of non-financial factors on SACCO performance, especially in semi-arid and arid Kenyan regions, as the economic climate may influence the performance of these businesses. Future research should explore the relationship between liquidity, equity, and debt levels and deposit-taking savings and credit cooperative societies (SACCOs) performance in Kenya's Nyandarua County. A significant negative coefficient for liquidity suggests higher levels are associated with lower performance, contradicting traditional financial theory. Further investigation into optimal liquidity thresholds for SACCOs is needed to determine if excessive liquidity indicates inefficient asset utilization or a lack of profitable investment opportunities.

The study found that equity and debt levels do not have a direct, statistically significant linear impact on SACCO performance in Nyandarua County. This suggests that current measures may not fully capture their complex influence, mediating or moderating variables, or their impact is non-linear. Future studies could use more sophisticated econometric models, explore non-linear relationships using quadratic or cubic terms for equity and debt ratios, investigate the impact of specific equity and debt components, and compare SACCOs in other Kenyan counties or East African countries for regional differences and best practices. Additionally, exploring the influence of regulatory frameworks, governance structures, and technological adoption on financial performance would provide a more holistic understanding.

## REFERENCES

- Aziz, S., & Abbas, U. (2019). Effect of debt financing on firm performance: A study on non-financial sector of Pakistan. *Open Journal of Economics and Commerce*, 2(1), 8–15.
- Berle, A. A., & Means, G. C. (1932). *The Modern Corporation and Private Property*. [Google Books]
- Brealey, R. A., Myers, S. C., & Allen, F. (2020). *Principles of Corporate Finance* (13th ed.). McGraw-Hill Education. [McGraw-Hill Education]
- Brooks, C. (2019). *Stata guide to introductory econometrics for finance*. London, Uk: Cambridge University Press.
- Brown, A. L. (2024). Understanding Variability in Financial Data. *International Journal of Accounting and Finance*. 10, (3), 201-215.
- Brown, L. M. (2022). Understanding Financial Ratios: A Guide for Analysts *International Journal of Financial Analysis*. 8, 45-58.
- Chen, M. (2023). Liquidity Management in Cooperative Societies. *Cooperative Studies Quarterly*. 8, (1), 45-60.
- Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2023). *Applied Multiple Regression/Correlation Analysis for the Behavioral Sciences* (3rd ed.). [Routledge]
- Daily, C. M., Dalton, D. R., & Cannella, A. A. (2003). Corporate Governance: Decades of Dialogue and Data. *Academy of Management Review*, 28(3), 371-382.
- Daoud, J. I. (2020). Multicollinearity and Regression Analysis. *Journal of Physics: Conference Series*, 1646(1), 012027.
- Davis, P. (2022). The Role of Liquidity in Financial Institutions. *Financial Stability Review*. 7 (4), 301-318.
- Dela Cruz, M. (2022). Member Equity Contributions, Outreach, and Sustainability of Cooperative Banks in the Philippines. *Asian Journal of Cooperative Studies*, 18(1), 45-60.
- Dela Cruz, M. A., & Santos, R. P. (2024). Liquidity Risk Management and Financial Stability of Cooperative Banks in the Philippines. *Asian Journal of Cooperative Studies*, 9(1), 45.
- Dodge, Y. (2009). On direction of dependence. *Metrika*, 72, 139-150.

- Duncan, N. M., Njeru, A., Member, F., & Tirimba, O. I. (2015). Effect of loan repayment on financial performance of deposit taking Saccos in Mount Kenya Region. *International Journal of Innovation and Applied Studies*, 10(4), 1238–1244.
- Evans, K. (2023). Assessing Liquidity Risk in Microfinance Institutions. *Journal of Microfinance*. 12, (2), 87-102.
- Fabozzi, F. J., & Peterson, P. P. (2003). *Financial management and analysis* (Vol. 132). John Wiley & Sons.
- Fama, E. F. (1980). Agency Problems and the Theory of the Firm. *Journal of Political Economy*, 88(2), 288-307.
- Fama, E. F., & French, K. R. (2002). Testing trade-off and pecking order models of capital structure. *Journal of Financial Economics*, 65(2), 189-222.
- Fama, E. F., & Jensen, M. C. (1983). Separation of Ownership and Control. *Journal of Law and Economics*, 26(2), 301-325.
- Field, A. P. (2023). *Discovering Statistics Using IBM SPSS Statistics* (6th ed.).
- Frank, M. Z., & Goyal, V. K. (2003). Capital structure decisions: Which factors are reliably important?. *Financial Management*, 32(4), 1-32.
- Ghoshal, S., & Moran, P. (1996). Bad for Practice: A Critique of the Transaction Cost Theory. *Academy of Management Review*, 21(1), 13-47.
- Githae, R. M. (2023). Heterogeneity in Financial Performance of SACCOs: A Regional Analysis. *East African Journal of Business and Economics*, 7(2), 112-130.
- Green, L. (2021). Early Warning Signs of Financial Distress. *Risk Management Today*. 9 (1), 15-28.
- Green, P. R. (2024). Debt Financing and Firm Performance: A Meta-Analysis Review of Financial Studies. 20, 201-215.
- Gujarati, D. N. (2003). *Basic econometrics*. New York: McGraw-Hill.
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2022). *Multivariate Data Analysis* (8th ed.).
- Harris, T. (2023). Optimizing Asset Allocation for Financial Institutions. *Investment Strategy Journal*. 11 (3), 190-205.

- International Co-operative Alliance Africa. (2020). *Africa co-operative development strategy 2017- 2020. International Day of Co-operatives 2005 ICA* (2005). <https://www.ica.coop/en/media/library/ international-day-co-operatives-2005>.
- Ivanov, A., & Petrova, E. (2023). Impact of Borrowed Funds on the Financial Stability of Russian Credit Cooperatives. *Russian Journal of Economic Studies*, 12(4), 301-315.
- James, G., Witten, D., Hastie, T., & Tibshirani, R. (2021). *An Introduction to Statistical Learning with Applications in R* (2nd ed.).
- Jensen, M. C. (1986). Agency costs of free cash flow, corporate finance, and takeovers. *The American Economic Review*, 76(2), 323-329.
- Jensen, M. C., & Meckling, W. H. (1976). Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure. *Journal of Financial Economics*, 3(4), 305-360.
- Johnson, D. R., & Lee, S. K. (2021). Determinants of Liquidity Risk and Financial Performance in U.S. Credit Unions. *Journal of Financial Services Research*, 60(1), 1-20.
- Johnson, D., & Lee, S. (2024). Debt Financing and Operational Efficiency in U.S. Credit Unions. *Journal of Credit Union Research*, 45(1), 78-95.
- Kahneman, D., & Tversky, A. (1979). *Prospect Theory: An Analysis of Decision under Risk*. *Econometrica*, 47(2), 263-291.
- Karuma, M. N., Ndambiri, A. N., & Oluoch, J. O. (2018). Effect of debt financing on financial performance of manufacturing firms in Nairobi Securities Exchange. *The Strategic Journal of Business & Change Management*, 5(2), 1674–1691.
- Kimani, J. M., & Mwangi, P. W. (2023). Influence of Cognitive Biases on Investment Decisions Among Employees of Commercial Banks in Nairobi City County, Kenya. *Journal of Finance and Investment Analysis*, 12(1), 1-15.
- Kimani, J. M., & Wanjohi, J. M. (2022). Effect of Cognitive Biases on Investment Decisions Among Employees of Deposit Taking SACCOs in Nairobi City County, Kenya. *International Journal of Economics, Commerce and Management*, 10(1), 1-18.
- Kiprono, K., & Muturi, W. (2023). Liquidity Management and Financial Performance of Deposit-Taking SACCOs in Kenya. *Journal of Finance and Accounting*, 7(2), 112-125.
- Kothari, C. R., & Garg, G. (2016). *Research methodology: methods and techniques*. New Delhi: New Age International (P) Limited.

- Kraus, A., & Litzenberger, R. H. (1973). A state-preference model of optimal financial leverage. *The Journal of Finance*, 28(4), 911-922.
- Kutner, M. H., Nachtsheim, C. J., Neter, J., & Li, W. (2022). *Applied Linear Statistical Models* (5th ed.). [McGraw-Hill Education]
- Leland, H. E., & Pyle, D. H. (1977). Information asymmetries, financial intermediation, and capital structure. *The Journal of Finance*, 32(2), 371-387.
- Markowitz, H. (1952). Portfolio Selection. *The Journal of Finance*, 7(1), 77-91.
- Markowitz, H. M. (1952). Foundations of portfolio theory. *The Journal of Finance*, 46(2), 469-477.
- Marshall, C., & Rossman, G. B. (2006). *Designing Qualitative Research* (4th ed.). Sage Publications
- Miller, D. (2023). Statistical Analysis in Financial Research. *Quantitative Finance Review*. 14, (1), 30-45.
- Modigliani, F., & Miller, M. H. (1958). The cost of capital, corporation finance and the theory of investment. *The American Economic Review*, 48(3), 261-297.
- Modigliani, F., & Miller, M. H. (1958). The Cost of Capital, Corporation Finance and the Theory of Investment. *The American Economic Review*, 48(3), 261-297.
- Modigliani, F., & Miller, M. H. (1963). Corporate income taxes and the cost of capital: A correction. *The American Economic Review*, 53(3), 433-443.
- Mugambi, L., & Kinyua, J. (2023). *Capital Structure and Financial Performance of Deposit-Taking SACCOs in Kenya*. *Journal of Financial Economics*, 12(3), 215-230
- Mugenda, A., & Mugenda, O. (2012). *Research methods: quantitative and qualitative approaches*. Nairobi: Acts Press Publishers.
- Mugisha, R. (2023). Equity capital and financial performance of Savings and Credit Cooperative Societies in Uganda. *Journal of Financial Economics*, 45(2), 123-138.
- Müller, L., & Schmidt, T. (2021). Leverage and Financial Stability of German Cooperative Banks. *European Journal of Finance and Banking*, 10(3), 201-218.
- Munene, F., & Tibbs, C. Y. (2018). Accounts receivable management and financial performance of Embu Water and Sanitation Company Limited, Embu County, Kenya. *International Academic Journal of Economics and Finance* 3 (2), 216 - 240

- Muthoni, J., & Wanjohi, P. (2023). Effect of Debt Financing on Financial Performance of Deposit Taking Savings and Credit Cooperative Societies in Nairobi County, Kenya. *Journal of Finance and Accounting*, 7(2), 112-125.
- Mutua, M. M., & Kinyanjui, J. (2024). Influence of Cognitive Biases on Performance of Projects in Public Universities in Kenya. *International Journal of Project Management*, 42(1), 102555.
- Mutunga, D. K. (2017). *Effects of micro factors on financial performance of manufacturing firms in Kenya*. Nairobi, Kenya: Foscore Development Centre.
- Mwangi, A., & Njeru, B. (2024). Impact of Digital Transformation on Financial Inclusion in Kenya. *Journal of African Economics*, 33(2), 123-145
- Mwangi, L. W. (2014). Effect of financing decisions on performance of non financial companies listed at Nairobi Securities Exchange, Kenya. A published Doctor of Philosophy Thesis submitted to Kenyatta University. Retrieved from <http://ir-library.ku.ac.ke>
- Myers, S. C. (1977). Determinants of corporate borrowing. *Journal of Financial Economics*, 5(2), 147–175.
- Myers, S. C. (1984). The capital structure puzzle. *The Journal of Finance*, 39(3), 575-592.
- Myers, S. C., & Majluf, N. S. (1977). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics*, 13(2), 187-221.
- Ng'osei, C., & Wafula, D. (2020). Community-Based Conservation Initiatives. *East African Journal of Environmental Studies*, 15(1), 50-65
- Nguyen, T. T. H., & Tran, T. T. (2022). The impact of financial literacy on the performance of SACCOs in Vietnam. *Journal of Co-operative Studies*, 55(2), 123-140.
- Njeru M. D., Memba, F., & Tirimba, O. I. (2015). Effect of cash management on financial performance of Deposit Taking Saccos in Mount Kenya Region. *International Journal of Scientific and Research Publications*, 5(2), 1-6.
- Njoroge, S. W. (2021). The Impact of Liquidity Risk on the Financial Performance of Deposit-Taking SACCOs in Kenya. *Journal of Banking and Finance*, 45(4), 301-315.

- Ochieng, P., & Wanjala, S. (2022). *Equity Capital and Operational Efficiency of Savings and Credit Cooperative Societies in Uganda*. *African Journal of Cooperative Studies*, 8(1), 45-62.
- Odoh, M., & Chinedum, E. I. (2014). The theoretical analysis of experimental research. *IOSR Journal of Computer Engineering*, 16, 23–29.
- Ofei, K. A. (2002). IFLIP Research Paper 01-3: Retooling Credit Unions: The case of credit Union Association of Ghana. In *Finance* (Issue November 2001).
- Olando, C. O., Mbewa, M. O., & Jagongo, A. (2012). Financial practice as a determinant of growth of savings and credit co-operative societies' wealth (a pointer to overcoming poverty challenges in Kenya and the region). *International Journal of Business and Social Science*, 3(24).
- Onyango, J., & Chege, F. (2022). Factors influencing the financial performance of SACCOs in Kenya. *African Journal of Business Management*, 16(10), 387-399.
- Onyango, J., & Omondi, P. (2023). The role of governance in the sustainability of SACCOs in East Africa. *International Journal of Cooperative Management*, 12(1), 45-60.
- Otieno, D. A. (2025). Asset Utilization and Profitability in Financial Cooperatives: Evidence from Kenya. *Global Economic Review*, 10(1), 87-102.
- Ouma, K. O. (2011). An Investigation into the Cash Balance Management Approaches in Saving and Credit Cooperative Societies (Saccos) in Nakuru County, Kenya.
- Parker, Q. (2024). Heterogeneity in Financial Sector Performance. *Economic Perspectives Journal*. 18, ( 2), 110-125.
- Petrov, A., & Smirnov, D. (2025). Digital transformation and its effects on SACCOs' operational efficiency. *European Journal of Cooperative Economics*, Forthcoming
- Petrova, E. (2025). Equity Capital, Stability, and Development of Cooperative Banks in the Russian Federation. *Russian Journal of Financial Studies*, 32(1), 70-85.
- Quinn, R. (2023). Financial Stability Indicators and Their Implications. *Global Financial Stability Report*. 1, 60-75.
- Ratemo, J. (2015). *Kenyan SACCOs riding on innovation to attract customers*. Business news in Kenya. <http://www.biztechafrika.com/article/kenyan-Saccos-riding-innovation-attract-customers/10407/>

- Ross, S. A., Westerfield, R. W., & Jaffe, J. (2019). *Corporate Finance* (12th ed.). McGraw-Hill Education. [McGraw-Hill Education]
- Saleemi, N. A. (2009). *Entrepreneurship simplified*. ACME Press.
- Sang, R. K. (2011). *The effect of change in capital structure on the financial performance of Saccos in Nairobi (Unpublished MBA Project)*. University of Nairobi.
- Saunders, A., & Cornett, M. M. (2020). *Financial Institutions Management: A Risk Management Approach* (10th ed.). McGraw-Hill Education. [McGraw-Hill Education]
- Schmidt, L. (2024). Member Equity, Retained Earnings, and Resilience of Cooperative Banks in Germany. *European Journal of Banking and Finance*, 29(3), 210-225
- Schmidt, L., & Müller, T. (2022). The Impact of Basel III Liquidity Requirements on German Cooperative Banks' Profitability. *European Journal of Banking and Finance*, 15(3), 201-218.
- Schmitz, A., & Wüstemann, J. (2024). Digital Transformation in SACCOs: Challenges and Opportunities. *Journal of Financial Cooperatives*, 15(2), 112-130.
- Sekaran, U. (2003). *Research methods for business: A skill-building approach*. John Wiley & Sons.
- Sharma, R., & Kumar, A. (2022). Debt Structure and Financial Performance of Urban Cooperative Banks in India. *International Journal of Cooperative Management*, 15(1), 45-62.
- Shleifer, A., & Vishny, R. W. (1997). A Survey of Corporate Governance. *The Journal of Finance*, 52(2), 737-783.
- Smith, B., & Jones, C. (2023). The Role of SACCOs in Promoting Financial Inclusion in Developing Economies. *International Journal of Cooperative Economics*, 8(4), 255-278
- Smith, J. A. (2023). Financial Leverage in Cooperative Societies: A Global Perspective *Journal of Cooperative Finance* 15, 112-125.
- Smith, J. R. (2023). Financial Ratios and Their Interpretation. *Journal of Financial Management*. 15, (2), 112-130.
- Stock, J. H., & Watson, M. W. (2022). *Econometric Analysis of Microfinance Institutions: A Case Study of SACCOs*. *Econometrics Review*, 41(1), 45-68.
- Sukamolson, S. (2007). Fundamentals of quantitative research. *Language Institute Chulalongkorn University*, 20.

- Thomas, G. (2014). Research methodology, methods and design. In J. Gravelle & C. Rogers (Eds.), *Researching the Police in the 21st Century: International Lessons from the Field* (83–116). Palgrave Macmillan UK.
- Wanjala, D., & Muturi, P. (2024). Governance Structures and Member Participation in Kenyan SACCOs. *African Journal of Cooperative Studies*, 7(3), 89-105
- Wooldridge J. M. (2021). *Introductory econometrics: A Modern Approach*. 5th ed. Boston: Cengage Learning.
- Wooldridge, J. M. (2022). *Introductory Econometrics: A Modern Approach* (7th ed.). [Cengage Learning]
- World Bank. (2024). *SACCOs and Sustainable Development Goals: A Global Perspective*. World Bank Publications
- Worldwide Credit Unions. (2015). *2015 Statistical report* (Issue December).
- Zikmund, W. G., Carr, J. C., & Griffin, M. (2013). *Business research methods*. Cengage Learning.

## **APPENDIX I**

### **LETTER OF INTRODUCTION**

Naomi W. Kamau  
Laikipia University  
P.O. Box 1100-20300  
**NYAHURURU**

To the Chief Executive Officer,  
SACCO Societies Regulatory Authority,  
P.O. Box 25089-00100,  
**NAIROBI**

Dear Sir,

#### **RE: RESEARCH PROJECT**

My name is Naomi W. Kamau, and I am presently enrolled at Laikipia University in the Master of Business Administration program. My registration number is MB24/4162/016). My study aims to explore the connections among deposit-taking savings, financial structure, and credit cooperative societies' performance in Nyandarua County. Completing this questionnaire is a requirement to graduate from Laikipia University's Master of Business Administration program.

I respectfully ask that you assist me in obtaining information from your Deposit Taking SACCO for my research. All supplied data will be handled in the strictest confidence and used exclusively to fulfill instructional goals.

I appreciate the assistance in advance.

Sincerely yours,

Kamau Naomi Wanjiru  
**MB24/4162/016**

## APPENDIX II

### DATA COLLECTION SHEET

This table was used to collect and record data that was collected from the financial statements of the sampled SACCOs. The data collected and recorded covered a period of seven years (2013 – 2022).

<b>2013</b>	Total Equity	Total Assets	Total Debts	Current Assets	Current Liabilities	Net Income
Viktas SACCO						
Tower SACCO						
Nyala Vision SACCO						
Muki SACCO						
Taifa SACCO						
Unison SACCO						
Supa SACCO						
Wananchi SACCO						
<b>2014</b>						
Viktas SACCO						
Tower SACCO						
Nyala Vision SACCO						
Muki SACCO						
Taifa SACCO						
Unison SACCO						
Supa SACCO						
Wananchi SACCO						
<b>2015</b>						
Viktas SACCO						
Tower SACCO						
Nyala Vision SACCO						
Muki SACCO						

Taifa SACCO						
Unison SACCO						
Supa SACCO						
Wananchi SACCO						
<b>2016</b>						
Viktas SACCO						
Tower SACCO						
Nyala Vision SACCO						
Muki SACCO						
Taifa SACCO						
Unison SACCO						
Supa SACCO						
Wananchi SACCO						
<b>2017</b>						
Viktas SACCO						
Tower SACCO						
Nyala Vision SACCO						
Muki SACCO						
Taifa SACCO						
Unison SACCO						
Supa SACCO						
Wananchi SACCO						
<b>2018</b>						
Viktas SACCO						
Tower SACCO						
Nyala Vision SACCO						
Muki SACCO						
Taifa SACCO						
Unison SACCO						
Supa SACCO						

Wananchi SACCO						
<b>2019</b>						
Viktas SACCO						
Tower SACCO						
Nyala Vision SACCO						
Muki SACCO						
Taifa SACCO						
Unison SACCO						
Supa SACCO						
Wananchi SACCO						
<b>2020</b>						
Viktas SACCO						
Tower SACCO						
Nyala Vision SACCO						
Muki SACCO						
Taifa SACCO						
Unison SACCO						
Supa SACCO						
Wananchi SACCO						
<b>2021</b>						
Viktas SACCO						
Tower SACCO						
Nyala Vision SACCO						
Muki SACCO						
Taifa SACCO						
Unison SACCO						
Supa SACCO						
Wananchi SACCO						
<b>2022</b>						
Viktas SACCO						

Tower SACCO						
Nyala Vision SACCO						
Muki SACCO						
Taifa SACCO						
Unison SACCO						
Supa SACCO						
Wananchi SACCO						

### APPENDIX III

#### List of Licensed Deposit-Taking SACCOs in Kenya for the Financial Year Ending 31<sup>st</sup> December, 2022

<b>Name of Society</b>	<b>Postal Address</b>
1. 2NK SACCO Society Ltd	P.O. Box 12196 – 10109, Nyeri
2. Acumen SACCO Society Ltd	P.O. Box 1325 – 00200, Nairobi
3. Afya SACCO Society Ltd	P.O. Box 11607 – 00400, Nairobi.
4. Agro-Chem SACCO Society Ltd	P.O. Box 94 – 40107, Muhoroni.
5. Ainabkoi SACCO Society Ltd	P.O. Box 120 – 30101, Ainabkoi
6. Airports SACCO Society Ltd	P.O. Box 19001 – 00501, Nairobi
7. Amica SACCO Society Ltd	P.O. Box 816 – 10200, Murang'a.
8. Ammar SACCO Society Ltd	P.O. Box 6957 – 01000, Thika.
9. Ardhi SACCO Society Ltd	P.O. Box 28782 – 00200, Nairobi.
10. Asili SACCO Society Ltd	P.O. Box 49064 – 00100, Nairobi.
11. Azima SACCO Society Ltd	P.O. Box 1124 – 01000, Thika.
12. Bandari SACCO Society Ltd	P.O. Box 95011 – 80104, Mombasa.
13. Baraka SACCO Society Ltd	P.O. Box 1548 – 10101, Karatina.
14. Baraton University SACCO Society Ltd	P.O. Box 2500 – 30100, Eldoret.
15. Biashara SACCO Society Ltd	P.O. Box 1895 – 10100, Nyeri.
16. Biashara Tosha SACCO Society Ltd	P.O. Box 189 – 60101, Manyatta.
17. Bi-High SACCO Society Ltd	P.O. Box 90 – 60500, Marsabit.
18. Bingwa SACCO Society Ltd	P.O. Box 434 – 10300, Kerugoya.
19. Boresha SACCO Society Ltd	P.O. Box 80 – 20103, Eldama Ravine.
20. Capital SACCO Society Ltd	P.O. Box 1479 – 60200, Meru.
21. Centenary SACCO Society Ltd	P.O. Box 1207 – 60200, Meru.
22. Chai SACCO Society Ltd	P.O. Box 278 – 00200, Nairobi.
23. Chuna SACCO Society Ltd	P.O. Box 30197 – 00100, Nairobi.
24. Chuka University SACCO Society Ltd	P.O. Box 60400- 109, Chuka
25. Cosmopolitan SACCO Society Ltd	P.O. Box 1931 – 20100, Nakuru.
26. County SACCO Society Ltd	P.O. Box 21 – 60103, Runyenjes.
27. Daima SACCO Society Ltd	P.O. Box 2032 – 60100, Embu.
28. Defense SACCO Society Ltd	P.O. Box 40668 – 00100, Nairobi
29. Dhabiti SACCO Society Ltd	P.O. Box 353 – 60600, Maua.
30. Dimkes SACCO Society Ltd	P.O. Box 886 – 00900, Kiambu.
31. Dumisha SACCO Society Ltd	P.O. Box 84 – 20600, Mararal.
32. Eco-Pillar SACCO Society Ltd	P.O. Box 48 – 30600, Kapenguria
33. Edis SACCO Society Ltd	P.O. Box 248 – 20400, Bomet
34. Egerton SACCO Society Ltd	P.O. Box 178 – 20115, Egerton.
35. Elimu SACCO Society Ltd	P.O. Box 10073 – 00100, Nairobi.
36. Enea SACCO Society Ltd	P.O. Box 1836 – 10101, Karatina.
37. Faridi SACCO Society Ltd	P.O. Box 448 – 50400, Busia.
38. Fariji SACCO Society Ltd	P.O. Box 589 – 00216, Githunguri.
39. Fortitude SACCO Society Ltd	P.O. Box 237 – 40305, Mbita.
40. Fortune SACCO Society Ltd	P.O. Box 559 – 10300, Kerugoya.
41. Fundilima SACCO Society Ltd	P.O. Box 62000 – 00200, Nairobi.

42. GDC SACCO Society Ltd P.O. Box 896 – 00216, Githunguri.
43. Golden Pillar SACCO Society Ltd P.O. Box 3192 – 60200, Meru.
44. Good Faith SACCO Society Ltd P.O. Box 224 – 00222, Uplands
45. Goodhope SACCO Society Ltd P.O. Box 158 – 20500, Narok.
46. Goodway SACCO Society Ltd P.O. Box 626 – 10300, Kerugoya.
47. Gusii Mwalimu SACCO Society Ltd P.O. Box 1335 – 40200, Kisii.
48. Harambee SACCO Society Ltd P.O. Box 47815 – 00100, Nairobi.
49. Hazina SACCO Society Ltd P.O. Box 59877 – 00200, Nairobi.
50. Ilkisonko SACCO Society Ltd P.O. Box 91 – 00209, Loitokitok.
51. Imarika SACCO Society Ltd P.O. Box 712 – 80108, Kilifi.
52. Imarisha SACCO Society Ltd P.O. Box 682 – 20200, Kericho.
53. Invest and Grow (IG) SACCO Society Ltd P.O. Box 1150 – 50100, Kakamega.
54. Jacaranda SACCO Society Ltd P.O. Box 1767 – 00232, Ruiru
55. Jamii SACCO Society Ltd P.O. Box 57929 – 00200, Nairobi.
56. Jitegemee SACCO Society Ltd P.O. Box 86937 – 80100, Mombasa.
57. Jamii Yetu SACCO Society Ltd P.O. Box 469 – 60600, Maua
58. Joinas SACCO Society Ltd P.O. Box 669 – 00219, Karuri.
59. Jumuika SACCO Society Ltd P.O. Box 14 – 40112, Awasi
60. Kencream SACCO Society Ltd P.O. Box 300131 – 00200, Nairobi
61. Kabiyet SACCO Society Ltd P.O. Box 195 -30303, kabiyet
62. Kenpipe SACCO Society Ltd P.O. Box 314 – 00507, Nairobi.
63. Kenversity SACCO Society Ltd P.O. Box 10263 – 00100, Nairobi.
64. Kenya Achievas SACCO Society Ltd P.O. Box 3080 – 40200, Kisii.
65. Kenya Bankers SACCO Society Ltd P.O. Box 73236 – 00200, Nairobi.
66. Kenya Highlands SACCO Society Ltd P.O. Box 2085 – 002000, Kericho.
67. Kenya Midland SACCO Society Ltd P.O. Box 287 – 20400, Bomet.
68. Kenya National Police SACCO Society Ltd P.O. Box 51042 – 00200, Nairobi.
69. Kimbilio Daima SACCO Society Ltd P.O. Box 81 – 20225, Kimulot.
70. Kimisitu SACCO Society Ltd P.O. Box 10454 – 00200, Nairobi
71. Kingdom SACCO Society Ltd P.O. Box 8017 – 00300, Nairobi.
72. Kitui Teachers SACCO Society Ltd P.O. Box 254 – 90200, Kitui.
73. Keysnote SACCO Society Ltd P.O. Box 2073-40100, Kisumu
74. Kolenge Tea SACCO Society Ltd P.O. Box 291 – 30301, Nandi Hills.
75. Koru SACCO Society Ltd P.O. Box Private Bag-40100, Koru
76. K-Pillar SACCO Society Ltd P.O. Box 83 – 20403, Mogogosiek.
77. K-Unity SACCO Society Ltd P.O. Box 268 – 00900, Kiambu.
78. Kwetu SACCO Society Ltd P.O. Box 818 – 90100, Machakos.
79. Lainisha SACCO Society Ltd P.O. Box 272 – 10303, Wang’uru.
80. Lamu Teachers SACCO Society Ltd P.O. Box 110 – 80500, Lamu
81. Lengo SACCO Society Ltd P.O. Box 1005 – 80200, Malindi.
82. Mafanikio SACCO Society Ltd P.O. Box 86515 – 80100, Mombasa.
83. Magadi SACCO Society Ltd P.O. Box 13 – 00205, Magadi.
84. Magereza SACCO Society Ltd P.O. Box 53131 – 00200, Nairobi.
85. Maisha Bora SACCO Society Ltd P.O. Box 30062 – 00100, Nairobi.
86. Mentor SACCO Society Ltd P.O. Box 789 – 10200, Murang’a.
87. Metropolitan National SACCO Society Ltd. P.O. Box 871 – 00900, Kiambu.

88. Mombasa Port SACCO Society Ltd	P.O. Box 95372 – 80104, Mombasa.
89. Mudete Factory Tea Growers SACCO	P.O. Box 221 – 41053, Khayega.
90. Muki SACCO Society Ltd	P.O. Box 398-20318, North Kinangop
91. Mwalimu National SACCO Society Ltd	P.O. Box 62641 – 00200, Nairobi.
92. Mwietheri SACCO Society Ltd	P.O. Box 2445 – 60100, Embu.
93. Mwito SACCO Society Ltd	P.O. Box 56763 – 00200, Nairobi.
94. Nacico SACCO Society Ltd	P.O. Box 34525 – 00100, Nairobi.
95. Nandi Farmers SACCO	P.O. Box 333 – 30301, Nandi Hills
96. Nafasa SACCO Society Ltd	P.O. Box 30586– 00100, Nairobi
97. Nation SACCO Society Ltd	P.O. Box 22022 – 00400, Nairobi.
98. Nawiri SACCO Society Ltd	P.O. Box 400 – 60100, Embu.
99. Ndege Chai SACCO Society Ltd	P.O. Box 857 – 20200, Kericho.
100. Ndosha SACCO Society Ltd	P.O. Box 53260401, Chogoria– Maara.
101. New Forties SACCO Society Ltd	P.O. Box 1939 – 10100, Nyeri.
102. Nexus SACCO Society Ltd	P.O. Box 251 – 60202, Nkubu.
103. Ng’arisha SACCO Society Ltd	P.O. Box 1199 – 50200, Bungoma.
104. NRS SACCO Society Ltd	P. O Box 575 – 00902, Kikuyu.
105. NSSF SACCO Society Ltd	P.O. Box 43338 – 00100, Nairobi.
106. Nufaika SACCO Society Ltd	P.O. Box 735 – 10300, Kerugoya.
107. Nyala Vision SACCO Society Ltd	P.O. Box 27 – 20306, Ndaragwa.
108. Nyambene Arimi SACCO Society Ltd	P.O. Box 493 – 60600, Maua.
109. Nyamira Tea Farmers SACCO Society Ltd	P.O. Box 633 – 40500, Nyamira
110. Nyati SACCO Society Ltd	P.O. Box 7601 – 00200, Nairobi
111. Ollin SACCO Society Ltd	P.O. Box 83 – 10300, Kerugoya.
112. Orient SACCO Society Ltd	P.O. Box 1842 – 01000, Thika.
113. Patnas SACCO Society Ltd	P.O. Box 601 – 20210, Litein.
114. Prime Time SACCO	P.O. Box 512 – 30700, Iten
115. PUAN SACCO Society Ltd	P.O. Box 404 – 20500, Narok.
116. Qwetu SACCO Society Ltd	P.O. Box 1186 – 80304, Wundanyi
117. Rachuonyo Teachers SACCO Society Ltd	P.O. Box 147 – 40332, Kosele
118. Safaricom SACCO Society Ltd	P.O. Box 66827 – 00800, Nairobi.
119. Sheria SACCO Society Ltd	P.O. Box 34390 – 00100, Nairobi.
120. Shirika Deposit Taking SACCO Society Ltd	P.O. Box 43429 – 00100, Nairobi.
121. Shoppers SACCO Society Ltd	P.O. Box 16 – 00507, Nairobi
122. Simba Chai SACCO Society Ltd	P.O. Box 977 – 20200, Kericho.
123. Siraji SACCO Society Ltd	P.O. Box Private Bag, Timau.
124. Skyline SACCO Society Ltd	P.O. Box 660 – 20103, Eldama Ravine.
125. Smart Champions SACCO Society Ltd	P.O. Box 64 – 60205, Githingo
126. Smart-Life SACCO Society Ltd	P.O. Box 118 – 30705, Kapsowar.
127. Solution SACCO Society Ltd	P.O. Box 1694 – 60200, Meru.
128. Sotico SACCO Society Ltd	P.O. Box 959 – 20406, Sotik.
129. Southern Star SACCO Society Ltd	P.O. Box 514 – 60400, Chuka
130. Stake Kenya SACCO Society Ltd	P.O. Box 208 – 40413, Kehancha
131. Stawisha SACCO Society Ltd	P.O. Box 27 – 50203, Kapsokwony.
132. Stima SACCO Society Ltd	P.O. Box 75629 – 00100, Nairobi.
133. Suluhu SACCO Society Ltd	P.O. Box 489 – 90400, Mwingi.

134. Strategic-Urembo SACCO Society Ltd	P.O. Box 78506 – 00507, Nairobi.
135. Supa SACCO Society Ltd	P.O. Box 271 – 20600, Maralal.
136. Tabasamu SACCO Society Ltd	P.O. Box 123 – 80403, Kwale.
137. Tabasuri SACCO Society Ltd	P.O. Box 80862 – 80100, Mombasa.
138. TAI SACCO Society Ltd	P.O. Box 718 – 00216, Githunguri.
139. Taifa SACCO Society Ltd	P.O. Box 1649 – 10100, Nyeri.
140. Taqwa SACCO Society Ltd	P.O. Box 10180 – 00100, Nairobi
141. Taraji SACCO Society Ltd	P.O. Box 605 – 40600, Siaya.
142. Telepost SACCO Society Ltd	P.O. Box 49557 - 00100, Nairobi
143. Tembo SACCO Society Ltd	P.O. Box 91 – 00618, Ruaraka Nairobi.
144. Tenhos SACCO Society Ltd	P.O. Box 391 – 20400, Bomet.
145. Thamani SACCO Society Ltd	P.O. Box 467 – 60400, Chuka.
146. The Apple SACCO Society Ltd	P.O. Box 153 – 50305, Sirwa.
147. The Noble SACCO Society Ltd	P.O. Box 3466 -30100, Eldoret
148. Times-U SACCO Society Ltd	P.O. Box 310 – 60202, Nkubu.
149. Tower SACCO Society Ltd	P.O. Box 259 – 20303, Ol’kalou.
150. Trans- Elite County SACCO Society Ltd	P. O Box 547 – 30300, Kapsabet.
151. Trans Nation SACCO Society Ltd	P.O. Box 15 – 60400, Chuka.
152. Trans-Counties SACCO Society Ltd	P.O. Box 2965 – 30200, Kitale.
153. Trans-National Times SACCO Society Ltd	P.O. Box 2274 – 30200, Kitale
154. Ufanisi SACCO Society Ltd	P.O. Box 2973 – 00200, Nairobi.
155. Ukristo Na Ufanisi Wa Anglicana	P.O. Box 872 – 00605, Nairobi.
156. Ukulima SACCO Society Ltd	P.O. Box 44071 – 00100, Nairobi.
157. Unaitas SACCO Society Ltd	P.O. Box 38791 – 00100, Nairobi.
158. Uni-County SACCO Society Ltd	P.O. Box 10132 – 20100, Nakuru
159. Unison SACCO Society Ltd	P.O. Box 414 – 10400, Nanyuki.
160. United Nations SACCO Society Ltd	P.O. Box 2210 - 00621, Nairobi.
161. Universal Traders SACCO Society Ltd	P.O. Box 2119 – 90100, Machakos.
162. Ushuru SACCO Society Ltd	P.O. Box 52072 – 00200, Nairobi.
163. Vihiga County Farmers SACCO Society Ltd	P.O. Box 309 – 50317, Chavakali.
164. Viktas SACCO Society Ltd	P.O. Box 2183 – 20300, Nyahururu.
165. Vision Africa SACCO Society Ltd	P.O. Box 18263 – 20100, Nakuru.
166. Vision Point SACCO Society Ltd	P.O. Box 42 – 40502, Nyansiongo.
167. Wakenya Pamoja SACCO Society Ltd	P.O. Box 829 – 40200, Kisii.
168. Wakulima Commercial SACCO Society Ltd	P.O. Box 232 – 10103, Mukurweni.
169. Wana-anga SACCO Society Ltd	P.O. Box 34680 – 00501, Nairobi.
170. Wananchi SACCO Society Ltd	P.O. Box 910 – 10106, Othaya.
171. Wanandegge SACCO Society Ltd	P.O. Box 19074 – 00501, Nairobi.
172. Washa SACCO Society Ltd	P.O. Box 83256 – 80100, Mombasa.
173. Waumini SACCO Society Ltd	P.O. Box 66121 – 00800, Nairobi.
174. Wevarsity SACCO Society Ltd	P.O. Box 873 – 50100, Kakamega
175. Winas SACCO Society Ltd	P.O. Box 696 – 60100, Embu.
176. Yetu SACCO Society Ltd	P.O. Box 511 – 60202, Nkubu.

**Source (SASRA Website)**