# EFFECTS OF FINANCIAL SOUNDNESS ON THE PROFITABILITY OF DEPOSIT TAKING SACCOS IN KENYA

**HARRISON MWANGI KAMAU**

**A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF SCIENCE IN FINANCE, FACULTY OF BUSINESS AND MANAGEMENT SCIENCES, UNIVERSITY OF NAIROBI**

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## DECLARATION

I, the undersigned, declare that this is my original work and has not been presented to any institution or university other than the University of Nairobi for examination.

Signed: ……. Date: November 26, 2023

**Harrison Mwangi**

**D63/36351/2020**

This research project has been submitted for examination with our approval as the University Supervisors

Signed: ……. Date: 26 November 2023

**Dan Chirchir**

**Department of Finance and Accounting**

**University of Nairobi**

Signed: ……. Date: November 26, 2023

**Prof. Winnie Nyamute**

**Department of Finance and Accounting**

**University of Nairobi**

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# DEDICATION

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# ABBREVIATIONS AND ACRONYMS

| | |
|---|---|
| **DTS** | Deposit Taking SACCO |
| **DTSS** | Deposit Taking SACCO Societies |
| **IMF** | International Monetary Fund |
| **NPL** | Non-performing Loans |
| **OLS** | Ordinary Least Squares |
| **ROA** | Return on Assets |
| **ROE** | Return on Equity |
| **ROI** | Return on Investments |
| **SACCOs** | Savings and Credit Cooperatives societies |
| **SASRA** | Sacco Societies Regulatory Authority |

# ABSTRACT

In the realm of business, the pursuit of stability financially is paramount, as it signifies an enterprise's ability to fulfill its financial commitments. This financial soundness is, in turn, a direct result of prudent financial decision-making, which serves as a catalyst for organizational growth and the attainment of strategic goals. The core objective of this study was to delve into the intricate relationship between financial soundness and the profitability of deposit-taking Savings and Credit Cooperative Societies (SACCOS) operating in Kenya. To obtain data that would be both relevant and fitting for the study's objectives, a systematic random sampling approach was meticulously employed. This meticulous method led to the selection of 50 firms, carefully chosen by selecting every third element from the comprehensive list of Deposit-Taking SACCOS (DTS). This approach was dictated by the presence of 150 DTS entities in the year 2020, as reported by SASRA in 2021. Notably, this research predominantly relied on quantitative secondary data, a method chosen for its inherent advantages. These benefits include its capacity to facilitate comparative analyses, its ability to reduce resource requirements, its applicability in longitudinal studies, and its provision of data permanence over time. The outcomes of the regression analysis undertaken in this study have provided illuminating insights into the relationships between various financial factors and profitability. Regression coefficient for capital adequacy emerged as statistically significant and positively oriented ($\beta = 0.027$, $p = 0.000 < 0.05$). This signifies that an increase of one unit in capital adequacy is associated with a substantial 0.027-unit enhancement in the performance financially of Kenyan deposit-taking SACCOs. Additionally, analysis pointed out that the coefficient for liquidity was both statistically significant and positively inclined ($\beta = 0.003$, $p = 0.020 < 0.05$). In practical terms, this suggests that a one-unit increase in liquidity corresponds to a noteworthy 0.003-unit improvement in profitability. as a consequence, regression results demonstrated that the coefficient for management efficiency was statistically significant and positively oriented ($\beta = 0.020$, $p = 0.047 < 0.05$). This implies that a unitary augmentation in management efficiency leads to a significant 0.020-unit improvement in profitability. In light of that, analysis underscored the statistical significance and positive orientation of the coefficient for asset quality ($\beta = 0.063$, $p = 0.000 < 0.05$). Essentially, this indicates that a one-unit improvement in asset quality results in a substantial 0.063-unit enhancement in profitability. on the other side, regression analysis revealed that the coefficient for firm size was both statistically significant and positively inclined ($\beta = 0.003$, $p = 0.028 < 0.05$). This signifies that an improvement of one unit in firm size corresponds to a significant 0.003-unit improvement in profitability. whereas results pointed out that the coefficient for the lending rate was both statistically significant and positively oriented ($\beta = 0.001$, $p = 0.048 < 0.05$). In practical terms, this suggests that a one-unit increase in the lending rate results in a noteworthy 0.001-unit enhancement in profitability. In summary, this study highlights the intricate web of financial factors that impact the profitability of deposit-taking SACCOs. It underscores the paramount importance of financial soundness and prudent financial management in these cooperative societies. Additionally, the study emphasizes the need for ongoing research endeavors, specifically focusing on the infrastructural capabilities and performance financially of these entities. Such research can offer valuable insights for policymakers, practitioners, and stakeholders in the financial sector, ultimately contributing to the growth and sustainability of deposit-taking SACCOs.

# CHAPTER ONE: INTRODUCTION

## 1.1 Background of the Study

Business strives for the financial soundness since it shows the capability to meet the financial obligations. According to Kirimi et al., (2022) financial soundness results from prudent financial decisions which propel the growth and accomplishment of organizational goals. Kimutai (2019) concludes that financial soundness portrays the strategies and resolutions useful for propelling the entity's financial health. The achievement of performance financially is pegged on the condition of the business. The continuous enhancement of financial efficiency and stability relies its capabilities to management assets and liabilities. It is worthwhile stating that financial soundness can aid the optimal stability financially.

Resource dependency theory (Pffeffer & Salancik, 1978) is chief underpinning hypothesis. It explains the importance of reliance on external environment and the maximization of the available resources for the greater good of the organization. Consequently, Baldwin and Schoot (1983) postulated the financial distress theory to indicate that financial instability is a great ineptitude and predicament towards the achievement of the financial obligation. In addition, capital adequacy theory pinpointed by Berger and DeYoung (1997) demonstrates firm's capitalization. The firms should manage their liabilities to minimize bankruptcy.

Deposit Taking SACCOS (DTS) are critical for the economic transformation. According to Kimutai (2019) DTS is crucial for saving mobilization and wealth creation. Vision 2030 gives chief latitude to the SACCOs for the powerhouse for the wealth creation. Therefore, they are fundamental in the investment and the achievement of economic growth. DTS have heightened the achievement of goals, provision of credit and mobilization of funds. In Kenya there are two

segments of SACCOs, deposit taking which are licensed and regulated by SASRA and non-deposit taking. Apart from saving and credit products, they are also mandated with basic banking services. According to Ogum and Jagongo (2022) concluded that SACCOs have changed the Kenyan economic sector. For instance, the average return was 8.25% in 2018 while in 2017 it was 7.1%.

### 1.1.1 Financial Soundness

According to Kirimi, Kariuki and Ocharo (2022), financial soundness denotes to the capability of institution to meet financial dues and keep a sustainable financial state. The businesses endeavor to enhance their shareholders' wealth. Moreover, it exemplifies the magnitude at which the firm is generating sufficient returns to compensate the expenditure incurred through the operations and debts (Machmud, Ali, & Hasan, 2023). Subsequently, it articulates the persistence to remain solvent and stable in the face of fiscal turmoil and other financial risks. This is impossible without financial health. It is integral in the general productivity, efficiency and effectiveness of the firms.

The financial soundness is a pointer of stable financial system. Besides depicting the efficient utilization of resources, it proclaims the allocation, assessment and proper management of financial risks. It is critical for creation of jobs, dissipate financial predicaments arising from unforeseeable factors (Bolarinwa & Adegboye, 2021). Financial institutions adopt risk mitigation strategies to absorb shocks and improve the overall performance of the organization. Financial soundness is paramount for continuous economic transformation. Therefore, financial institutions strive to finance profitable projects and accomplish the desirable results.

Businesses monitors financials using different metrics. According to Gadzo et al. (2019), the magnitude of operational and credit risk are key demonstrators of financial soundness. However, several scholars have also highlighted sensitivity to the market risk to measure performance financially. Additionally, capital adequacy, liquidity and asset quality have also been utilized to

reflect the financial soundness (Kirimi, Kariuki & Ocharo, 2022). Nevertheless, Abubakar, Umaru and Olumuyiwa (2020) utilized working capital to expound financial soundness whereas this examination maximizes; capital adequacy ratio, asset quality, management efficiency and liquidity.

### 1.1.2 Profitability

According to Muhlis (2023), profitability is critical metrics of business capability to generate greater financial gain in a specified timeframe. On the other side, Basdekis, Christopoulos and Lyras (2020) stated the profitability as a metrics for entity's capability to earn revenue pegged on investment but relative to the expenditures used in generating such income. In addition, Rifqah and Hafinaz (2019) denoted profitability as the magnitude of company's investments and its pursuit of profits as the excess of incurred cost. It portrays the sustainability and the going concern of the firm. Firms pursue wide-array of goals which include profitability. Kirimi et al. (2022) concluded that profitability is a subjective metric which shows how business generate revenue through the maximization of their assets. Rifqah and Hafinaz (2019) explained the importance of generating greater profits, reaping greater rewards and increasing investment to ensure continuous profitability. Moreover, Orichom and Omeke (2020) opined that profitability is a subset of performance financially portraying maximization of resources at the organizational disposal.

Profitability promotes the going concern of the business, risk mitigation and maintenance of firm's profitability. Profitability is fundamental for healthy and sustainable business. Poor profitability weakens the ability of the firm to absorb shocks. It shows efficiency in the company operation in the generation of profits. Moreover, it is the primary objective of the company seeking to ensure viability and continuity. According to Abubakar, Umaru and Olumuyiwa (2020), profitability is achieved when business keeps specific level of liquidity.

Efficiency and effectiveness of the business in generation of profits is well articulated on returns to the shareholders. Firms strives to manage the resources optimally and generate maximum returns. They enhance their smooth running, heightens investment in income-generating projects and continued operation (Abubakar, Umaru and Olumuyiwa (2020). Accordingly, several metrics have been utilized in the determination of profitability spanning from; Operating income, sales growth, cash flow, ROA net profit margin, ROI and ROE (Alexander, 2018). As a result, ROA is paramount in explaining the profitability under this investigation.

### 1.1.3 Financial Soundness and Profitability

The theoretical and empirical foundations of both financial soundness and profitability underpinning this scrutiny are robust and comprehensive. Resource Dependency Theory, first promulgated by Pfeffer and Salancik in 1978, posits that firm confide in their external environment for resources and endeavor to optimize those resources for the overall gains of the organization. This theory underscores the weight of resource acquisition and management in pursuit of organizational mandate. Building on this theory, Baldwin and Schoot (1983) proposed the Financial Distress Theory, which pinpoints the detrimental impact of financial instability on a firm's capability to fulfill its financial dues. This assumption underscores the necessity for organizations to enhance financial muscle, going concern, sustainability and avoid financial distress. Furthermore, the Capital Adequacy Theory, developed by Berger and DeYoung in 1997, focuses on a company's capitalization and advocates that firms should manage their liabilities in the processing of minimizing the risk of bankruptcy. This presupposition emphasizes the value of maintaining sufficient capital reserves and mitigating against financial risk to ensure the long-term viability of the organization.

It is fundamental in the gradual growth and profitability of the business (Arrawatia, Dawar, Maitra & Dash (2019). Any firm experiencing growth is capable of enhancing their financial soundness. This is an indication of utilization of resources and the ability to remain competitive. Its worthwhile stating that proper management of resources is a recipe for economic development, business stability and continuous improvement. Effective cash management and risk management strategies are key to achieving financial soundness. By optimizing cash flows, minimizing financial risks, and identifying profitable investment opportunities, firms can enhance their financial soundness and ensure their long-term viability.

Financial soundness in a firm is characterized by its ability to manage its financial resources efficiently and sustainably. A financially sound entity is able to maintain adequate cash flows to meet its current obligations, invest in profitable projects, and distribute dividends to its shareholders without jeopardizing its long-term stability financially. Profitability explains the achievement of specific organization objectives. It is periodic monetary accomplishment which can be easily deduced from the financial statement (Puente, Dávalos, Panta, & Cervantes, 2023). Profitability is well-explained by operating income, ROE and ROA. The financial soundness expounds on the financial effectiveness, health and capability of the business. Therefore, the two variables are intertwined since financial soundness create a holistic avenue for robust and fast profitability.

Furthermore, to maintain financial soundness, firms need to continuously monitor their performance financially and take appropriate measures to mitigate any potential financial distress. Such measures may include restructuring their debt, divesting non-core assets, and seeking new sources of capital to support their operations and investments. It is important to state that profitability is an instrument pointer of success in a firm. Besides projecting the business capability

to meet its financial obligations, it demonstrates the productiveness of a firm (Krishnamoorthy & Vijayapriya, (2023). Hence, utilization of resources is well articulated on the profits generated to the firm. It coins the effective and efficiency in the resource's allocation and utilization. Financial soundness is critical in the attainment of predetermined goals. It demonstrates cost effectiveness, momentum productivity and monetary output based on the actual results.

### 1.1.4 Deposit Taking SACCOs

Financial institutions like SACCOs were started as cooperatives by European Farmers in 1844. The continuous improvement led to establishment of societies to assist the farmers in managing, marketing and selling their produce (Kimutai, 2019). These financial institutions have grown into cooperatives societies, SACCOs, microfinance and banks among others. The paradigm shift has seen transformation, evolution and innovation in this sector.

This sector has registered different predicaments emanating from both the internal and external factors. The major factor includes the financial soundness of the firm. This is the key pointer of the going concern of the business. Importantly, SACCOs are fundamental for economic growth, employment creation, and standard of living. SACCOs are fundamental landscape of financial soundness of a nation. Kenya has one of the greatest, vast, vibrant, and productive segments of financial sector globally (SASRA, 2016). It employs greater part of the entire population and ensure continuous growth of the economy.

## 1.2 Research Problem

Business's capacity to maintain and promote good financial health and to progressively increase its profit is a pointer of going concern. According to Thuita (2021), efficiency and leverage of a company nails the financial health of the organization. Kipruto, Wepukhulu and Osodo (2017) concluded that management efficiency is paramount element in the performance financially.

Financial soundness is critical for the identification and maximization of the firm's strength. It explains the financial health and vulnerability of the organization (Gadzo, Kportorgbi, & Gatsi, 2019). It is important to state that competition, performance and financial resilience rely on the financial soundness of the business. It explains the capability to withstand financial turbulences, enhance self-corrective mechanisms, prevent adverse effects, and improve capitalization.'

SACCOs have gained immense popularity in Kenya due to their management of savings and loans (Ochieng 2018). Rural population are maximizing SACCOs in agricultural production and commercial activities. In 2017, there was approximately 22,000 SACCOs registered serving 14Million people and contributing to economic growth. It is fundamental for poverty alleviation as envisaged under vision 2030. It is driven by the demand for quick credit by the majority of the firms and individuals. The presence of affordable credits from the SACCOs has led to dramatic growth while assisting the poor to meet their needs (Ogum & Jagongo, (2022). Therefore, it is paramount for the inclusive and sustainable growth especially for developing nation. DTS offer wide array of issues spanning from agricultural facilities, investment opportunities and housing solutions (Rop, Kibet, & Bokongo (2016). However, several SACCOs have experienced financial turmoil in the recent past for example Ekeza SACCO and Sukari SACCO. Moreover, DTS such as Moi University, Transcom, Maono Damima and Ufundi have not been exceptional but have faced financial instability (SASRA, 2022). The challenges experienced have been associated with mismanagement, bad loans and fraud.

Globally, Machmud, Ali and Hassan, (2023) concluded that investigation of firm's soundness is crucial for the investors and stakeholders. It portrays the going concern of the business and ensure compliance to the policies and the operation procedures which are critical for the financial institutions. According to Muhlis (2023), soundness level of banking institution shows its

performance financially and compliance to the provision. Hence, it explains the asset quality, leverage, liquidity and efficiency among other critical factors. In, Pakistan Burki and Niazi (2010) pinpointed the global challenges facing the financial institution. This examination indicated that asset quality and efficiency are vital elements for the performance financially. Abdi, Sok and Hassan (2010) concluded that global economic predicaments affected the financial sector immensely.

According to Barus et al. (2017) postulated that asset quality is positively interrelated with the performance financially. The context of this investigation were the SACCOs in Kenya. Nonetheless, Kariuki (2017) indicated that asset quality has an inverse relationship with performance financially. Thuita (2019) concluded that different financial ratios are the pointer of financial soundness. Kimutai (2021) stated that DTS are playing fundamental role in the Kenya economy, however, stability financially and the strength of the firms to meet the financial obligation is still facing majority of financial institutions. Moreover, SASRA recommended several DTS to revert to the non-deposit taking due to several predicaments, failure to adhere to regulations and financial turmoil.

Courtesy of the foregoing investigations, several steps have been made to arrive at the dependable solution. Although global investigations have unearthed manifold pertinent issues, the applicability of their inferences to the Kenyan set-up remains incomplete due to contextual gaps that need comprehensive vigilance. The current economic status of Kenya and its geographical location may render the country susceptible to some of the challenges observed at the global level hence there is need to close contextual gaps. Thus, it is imperative to undertake further research to bridge these gaps and provide context-specific solutions. Additionally, local studies undertaken have resulted in inconsistent and mixed findings due to different contexts, concepts and methods.

In a nutshell, there are methodology gaps due to varying techniques and methods employed. Additionally, conceptual gaps arise since majority of the study have not linked financial soundness and profitability. Finally, contextual gaps emanate from varying regions and area of concentration by the study based on the foregoing studies. Hence, the current investigation is keen to bridge such gaps by answering the question on; what is the effect of financial soundness on the profitability of deposit taking SACCOs in Kenya?

### 1.3 Research Objective

The objective was establishing the effect of financial soundness on the profitability of Kenyan deposit taking SACCOS.

### 1.4 Value of the Study

This investigation is crucial in adding more information on theory assumptions, practicability and their weakness. This is vital for theory development since it gives greater insights and areas for improvement. The shortcomings highlight the gaps that need to be closed. Moreover, the recommendations are explained comprehensively to aid in the research. This assessment is critical for managers, policy makers and organizations. The researcher's outcome can be used in development of policies and regulations to aid SACCOs. It is important to emphasize that SACCOs plays pivotal role in the economic development and prosperity.

The outcome from this analysis can propel more investigation, referencing and comparative investigations. The researchers can consider evaluating differing sectors and coming up with conclusive results. As a consequence, this research can offer relevance reference point.

# CHAPTER TWO: LITERATURE REVIEW

## 2.1 Introduction

This segment delineates a comprehensive overview of the theoretical framework and proposed hypothesis for the research investigation. The factors that impact profitability are also analyzed in detail and extensively. Additionally, foregone studies are reviewed to enhance the comprehension of the subject matter. The objective of the research is to address gaps in existing literature by consolidating the available information and identifying areas that require further exploration. Finally, the chapter concludes by presenting a conceptual framework that illustrates the correlation between the variables under the assessment.

## 2.2 Theoretical Framework

This segment is built by theories to heighten the comprehension. The fundamental idea of Resource Dependency Theory, introduced by Pffeffer & Salancik (1978), is that organizations should rely on external sources and make use of the available resources to promote the collective benefit of the organization. This leads to the Financial Distress Theory proposed by Baldwin and Schoot (1983), which argues that financial instability is a major hindrance to meeting financial obligations. Furthermore, the Capital Adequacy Theory, as explained by Berger and DeYoung (1997), stresses the significance of adequate capitalization for businesses. The theory recommends that companies should manage their liabilities cautiously to prevent the possibility of bankruptcy.

### 2.2.1 Resource Dependency Theory

This theory was developed by Pffeffer & Salancik (1978). This principle explain how outside environment especially external utilities determine the behavior of an institution. The purchase of

external services or resources are crucial for day to day activities of an organization. Thus this theory assume that every organization need to conduct transaction with other firms or actors within business market. In addition to that founders of this theory subdivided the effects of resource dependence into 3 key sectors namely; control of resources, significance of resources and prevalence of the resources.

This theory has encountered several criticisms, primarily centered around its lack of discrimination when it comes to mutual dependence and power imbalances. Critics argue that it fails to address the complexities surrounding boundary states, leading to ambiguities in its application. Furthermore, empirical studies often focus on the dependence of one firm on the company rather than exploring the reciprocal association between actors. Additionally, it faces contradiction due to its confusing prescriptions and theoretical expectations, which further challenge its validity and practicality.

Despite the criticisms mentioned above, this theory holds significant merits for this study. It provides valuable insights to Decision-Making Technical Systems (DTS) in understanding the significance of and how to depend on specific resources and companies. Moreover, it aids in comprehending the competitive landscape and allows businesses to assess the diversity of their practices. As a result, this theory is essential for evaluating the impact of financial soundness on the profitability of DTSs in Kenya, enabling a comprehensive analysis of their operations and strategic decisions.

### 2.2.2 Financial Distress Theory

In addition to the aforementioned theories, the financial distress theory, proposed by Baldwin and Scott (1983), was also considered in this assessment. This theory suggests that even if an institution

appears to be profitable, it can still face failure. The theory posits that when the rate of growth of an institution exceeds its internal return rate, the financial inflow may not be sufficient to cover expenses, particularly when the company has significant debts. Consequently, the company may struggle to meet its financial obligations and pay its bills, leading to financial distress and potential failure. This theory sheds light on the importance of managing financial resources effectively and maintaining a balance between growth and stability financially within an institution.

The theory of financial turmoil, despite its importance, is not exempt from criticisms. One critique is its assumption of a direct correlation between financial markets and the probability of distress, neglecting to consider other contextual variables that may impact an institution's financial state (Kagongo, 2021). Furthermore, the theory tends to prioritize financial aspects while disregarding non-financial factors such as managerial practices or industry-specific challenges, which can also contribute to financial turmoil. Additionally, its heavy reliance on historical financial data may restrict its ability to accurately predict future distress, particularly in rapidly evolving and uncertain business landscapes. Detractors argue for a more comprehensive approach that incorporates both financial and non-financial indicators, enabling a more nuanced comprehension of financial turmoil and its underlying causes.

According to Xiao, Yang, Pang and Dang (2012), this theory offers valuable insights into the factors that can influence the fiscal steadiness and well-being of institutions. It aids in the identification of indicators and cautionary signals that may suggest a potential decline in stability financially, enabling proactive measures to be taken in order to mitigate risks and avert distress. Furthermore, the theory underscores the significance of efficient fiscal administration and planning, as well as the necessity for a comprehensive understanding of both monetary and non-monetary elements that can impact an institution's fiscal state. This theory proves essential in the

current study as it presents advantages in addressing fiscal pressures and investigating the correlation between fiscal soundness and profitability in firms. It facilitates comprehension of the ramifications of swift changes in the economic domain and functions as a mechanism for exposing issues, allowing managers to devise appropriate remedies. Moreover, this theory assists institutions in reducing the likelihood of insolvency (Farooq, Noor, & Qureshi, 2022). By considering the insights offered by the theory of financial turmoil, stakeholders can make well-informed decisions and implement strategies to uphold or enhance stability financially in diverse sectors, encompassing businesses, financial institutions, and even governmental entities.

### 2.2.3 Capital Adequacy Theory

The theory of capital adequacy, introduced by Berger and De Young (1997), emphasizes the evaluation of an institution's capital sufficiency through the use of the Capital Adequacy Ratio (CAR). In the context of banking institutions, the CAR represents the amount of essential capital expressed as a percentage of risk-weighted assets, particularly the institution's assets. This theory posits that institutions should maintain a minimum level of capital relative to their risk-weighted assets. The CAR serves as a measure to assess an entity’s ability to absorb potential losses and withstand adverse financial situations. By ensuring that institutions maintain adequate capital reserves, the theory of capital adequacy aims to promote stability financially, reduce the risk of insolvency, and safeguard the interests of depositors and stakeholders.

he theory of capital adequacy, despite its relevance, is not without limitations. One notable limitation is its inability to fully consider potential losses that could lead to the bankruptcy or impairment of an institution. While capital adequacy ratios provide a measure of an institution's ability to absorb losses, they may not capture all the risks and vulnerabilities that could jeopardize

the institution's financial health (England & Folbre, 2023). Additionally, the focus on maintaining capital adequacy can sometimes act as a constraint on the growth and expansion of Dynamic Technology Solutions (DTS) and other institutions, as it may limit their ability to take on additional risks or pursue new opportunities. Another limitation is the theory's lack of predictive factors, as it primarily focuses on assessing the adequacy of capital based on past data rather than anticipating future risks. This limitation hinders its effectiveness in providing early warnings or proactive measures to address potential financial vulnerabilities. Furthermore, the theory may not provide a comprehensive analysis of the quality of capital and other adequacy indicators, which could limit its ability to fully evaluate an institution's overall financial strength and resilience.

Notwithstanding the limitations, the theory of capital adequacy offers several benefits to this study. One notable advantage is its promotion of genuine investment, which in turn facilitates the provision of financial services. By guaranteeing that establishments possess sufficient capital to cover unforeseen losses, this theory contributes to upholding trust and confidence in the solidity of the financial system, safeguarding both insured and uninsured depositors and other interested parties (DeAngelo, 2022). Moreover, this theory underscores the significance of possessing ample capital to sustain the functioning and financing of projects within a dynamic business environment. It serves as a valuable instrument for stakeholders to grasp the importance of maintaining an appropriate level of capital, ensuring the resilience and long-term sustainability of establishments. Thus, the theory of capital adequacy remains highly pertinent to the evaluation of financial robustness, furnishing valuable insights and counsel to regulators, investors, and interested parties in fostering and safeguarding the stability and integrity of the financial sector.

## 2.3 Determinants of Profitability

The assessment of SACCOs' profitability is a challenging task that involves analyzing their asset management capabilities. Stability financially is a crucial factor in this regard, as it determines a SACCO's ability to sustain its operations, compete in the market, and improve its profitability. Maintaining stability financially enables SACCOs to minimize potential risks that could impede their effectiveness and efficiency. To address this issue, the SASRA has mandated SACCOs to establish and implement measures to mitigate risks. Therefore, by closely monitoring and managing these risks, SACCOs can ensure their stability financially and enhance their profitability. The research study examines the fundamental elements of capital adequacy, liquidity, management efficiency, and asset quality.

### 2.3.1 Capital Adequacy

It is worthwhile stating that capital adequacy is a critical aspect that every financial institution, including SACCOs and banks, must maintain. It is calculated as a percentage of the institution's risk-weighted assets, and it is essential in examining the impact of stability financially on profitability. Several studies have been conducted to determine the significance of capital adequacy as a determinant of financial soundness. For instance, Odunga, Nyangweso, and Nkobe (2015) investigated the relationship between adequacy of capital and efficiency in operations and found that it had a positive impact on efficiency.

Similarly, Pessarossi and Weill (2013) conducted a study on the effects of adequacy of capital on the efficiency of China's banks and established that bank efficiency and adequacy of capital positively correlated. On the other hand, Orichom and Omeke (2020) examined the influence of adequacy of capital on the performance and operations of microfinance and found no significant

impact of adequacy of capital on microfinance performance. Considering the varying results of the above studies, this study seeks to determine the impact of financial soundness, specifically adequacy of capital, on the profitability of DTS.

### 2.3.2 Liquidity

It is imperative to elucidate that liquidity is an epicenter factor that measures an entity's ability to convert its assets into cash or access funds when required. In simple terms, liquidity refers to having access to or obtaining cash at the time of need. Rifqah and Hafinaz (2019) conducted a study to investigate the impact of liquidity on the profitability of Indonesian banks. The study revealed that liquidity negatively influenced performance of the banks.

Similarly, Auguenaou, Lahrech, and Bounekaya (2017) evaluated the impact of liquidity on the performance of banks in Morocco and established that liquidity had a negative association with banks' efficiency. Muriithi and Waweru (2017) conducted a similar study and found that liquidity risk had a negative impact on the performance of Kenya's commercial banks. This study aims to determine the impact of liquidity as a determinant of financial soundness on the profitability of DTS.

### 2.3.3 Management Efficiency

It is crucial to emphasize that the efficiency of managers plays a pivotal role in an entity's capacity to optimize its available resources and attain its objectives. In a study conducted by Muhadzdzib and Margaretha (2022), they explored the relationship between financial health and performance financially. Interestingly, their findings revealed a noteworthy negative impact of efficient management on performance financially. This highlights the significance of effective management practices in driving positive financial outcomes for an organization. The study underscores the

importance of enhancing management efficiency as a means to enhance performance financially and overall organizational success.

Similarly, Orichom and Omeke (2020) investigated the relationship between efficiency management and performance of microfinance companies and found that efficiency did not have a significant impact on performance. Valeed A. Ansari and Wubhshnet Fola (2014) also conducted a study on the impact of management efficiency on profitability and earnings in both private and public insurance companies in India. The study found that management efficiency had a significant difference in the position of public and private life insurance institutions. The present study aims to examine the impact of management efficiency on the profitability of DTS.

### 2.3.4 Asset Quality

The business endeavors to maximize opportunities and resources to reap optimum returns. Asset quality is an important determinant that refers to the quantity of available and possible credit risk associated with investment portfolios, loans, or other assets. Several studies have been conducted to examine the impact of asset quality. Firstly, Bodla and Tondon (2017) conducted a study on the profits of life insurance institutions in India and found that asset quality has a significant influence on the insurance industry in India.

Secondly, Muigai (2017) conducted a research on non-financial companies registered in the NSE to establish the impacts of asset structure in the companies analyzed. The study concluded that tangible assets and external equity did not assist in the recovery of funds during financial crises in non-financial companies. In this present study, we examined the impact of asset quality on the profitability of DTS.

### 2.3.5 Firm Size

The correlation between the firm size and its fiscal performance is intricate and diverse. Larger enterprises often reap the advantages of economies of scale, facile access to capital, and diversification of operations, thereby favorably impacting their financial outcomes (Susetyo, 2023). Nevertheless, they may also encounter obstacles such as bureaucratic complexities and reduced adaptability (Margono & Gantino, 2021). Conversely, smaller firms exhibit greater agility and innovation potential, yet they may grapple with resource constraints and limited market visibility. Ultimately, the influence of entity size on performance financially fluctuates across sectors and is contingent on variables like management prowess and prevailing market conditions. Successful performance financially hinges on adept administration, astute strategic decision-making, and adaptability, irrespective of a firm's magnitude.

### 2.3.6 Lending Rate

Lending rates, also known as interest rates, wield a profound impact on fiscal performance. Reduced borrowing costs confer several benefits, such as enhanced access to funds for both enterprises and individuals, stimulating spending, and fostering investment and entrepreneurial endeavors (Cucinelli, 2015). Affordable credit prompts consumers to make substantial purchases, spurring demand for goods and services and contributing to economic growth. Nevertheless, lower interest rates are not without drawbacks, including the risk of inflationary pressures, diminished returns on savings and investments, and the potential for creating speculative bubbles in specific markets (Chen, Huang & Lin, 2022). Striking a delicate balance between promoting economic activity and managing potential risks is imperative to achieve sustainable fiscal results. Central banks and financial authorities meticulously calibrate lending rates as a means to shape economic

conditions and uphold price stability, with the ultimate goal of cultivating a robust and harmonious economic landscape.

### 2.4 Empirical Review

Kipkorir, Namiinda and Njeje (2015) evaluated the correlation between the impact of real estate decisions on investment prospects and the performance financially of DTS. The study aim at DTS in Baringo County, Kenya. Moreover, a total number of 73 DTS were examined. This assessment gathered data by employing secondary data matrices which were share to 177 employees of the targeted DTS. The research established that investment in real estate generates up to 9.8% of the monetary performance of the DTS. The study only target DTS in Baringo County, while the current study aimed at assessing effects of financial soundness on the profitability of DTS in Kenya.

Kimani and Aduda (2016) studied the impact of portfolio size on the performance financially of DTS in Kenya, taking into consideration various predictors factors such as bond markets and investments in money. The investigation focused on 90 firms registered in KAIC, but only 45 institutions were included in the analysis using secondary data. Regression analysis was used, and the results showed that investment in bond markets and money had the highest revenue and contributed significantly to performance financially. The study aimed to understand the effects of portfolio concepts on performance financially, while also assessing the impact of monetary stability on profitability.

Kirimi, Kariuki and Ocharo (2022) examined the impact of monetary stability on the performance financially of commercial banks in Kenya. This scrutiny utilized a dynamic panel approach to analyze data collected between 2009 and 2020. The CAMEL model was employed, using the five CAMEL elements - return on equity, assets, share revenue, and net interest - as indicators of

stability financially. The findings, obtained through the use of generalized technique of moments, revealed that monetary stability had a statistically significant influence on ROA, ROE, and NIM. Additionally, it was discovered that earning quality and asset quality had significant impacts on net interest margin, while management efficiency had a notable impact on return on equity. However, asset quality, earning quality, capital adequacy, and liquidity had little to no impact on return on equity and return on assets. It is worth noting that this study focused on commercial banks, while the current research focused on DTSs.

Muigai (2016) carried out an assessment on non-financial firms registered at the NSE to investigate whether their capital structure influenced financial distress. The study utilized various independent variables, such as leverage, equity structure, debt maturity, and asset structure, which were predicted to impact the financial distress of enterprises. The study spanned from 2004 to 2013, and only audited financial statements were used. Out of 500 businesses, 41 institutions were examined using quantitative research methodology. The findings revealed that outside equity, tangibility of assets, and leverage of assets did not aid in the recovery of non-financial businesses during times of financial crisis. On the other hand, the study discovered that long-term debt and internal equity had significant impacts on mitigating the influence of distress financially in non-financial firms. However, it is important to note that the recommendations from this study cannot be fully utilized in the present since the data used is over 10 years old, and the economic environment has changed. Hence, the current study attempted to bridge these gaps and only focused on DTS, unlike the previous study, which mainly focused on non-financial businesses.

Purnamasari and Azis (2016) conducted a study on the influence of mutual fund portfolio investment on the performance financially of DTS in Pakistan. The research used secondary data gathered from banks, which were selected as the main respondents due to their role as principal

agents in mutual funds. The variables analyzed in the study included investment in bond markets and money. The results showed a significant positive correlation between investment in money and bond markets and performance financially. However, since this study was conducted in Pakistan, the findings may not be fully applicable to Kenya, particularly when evaluating the impact of stability financially on the profitability of DTS

Machmud M, Ali and Hasan (2022) conducted a study on the performance financially of Bank Sulsebar over the last three years, using the CAMEL technique and survey method to collect data from the Enrekang branch. Furthermore, the data collection method employed was a survey. Importantly, the data utilized were the annual reports of the finance recorded between 2019 and 2021 from the Enrekang branch of Bank Sulsebar. The results showed that the bank's performance financially had fluctuated during the period under review. However, it is important to note that this study focused only on one entity, Bank Sulsebar, while the current study is focused solely on DTSs

Akotey, Sackey, Amoah &Manso (2013) did research on key drivers of Ghana's life insurance industry's returns. A total number of 10 life insurance institution were involve in the study, in which their annual financial statements were engaged. In addition, the study period covered 11 years between 2000 and 2010, a sampled were derived and scrutinized by panel regression. The findings revealed that gross written premium has positive impacts on profitability performance of insurers but their interrelation to investment income portrayed was negative. Furthermore, the study showed that insurers of life has setbacks as a result of price reductions as well as overtrading. This study only focused on insurance company for life but in the present study it targeted DTSs

Valeed, Ansari and Wubshnet Fola (2014) worked on a paper named as financial Soundness and performance of Life Insurance Companies in India. The study outcome delineated that policies

and standards in India play a pivotal role in ensuring performance financially and soundness. Moreover, the research found that there is a significant correlation in the midst of sufficiency of capital, asset quality, managerial effectiveness, profitability, earnings, and liquidity status in both public and private life insurance sectors. This examination took place in India therefore the conclusion as well as recommendations cannot be fully engaged globally, more so in Kenya.

Karim, Sok and Hassan (2010) examined the association amid NPL and efficiency of Malaysia's and Singapore's Banks. This assessment majored on the efficiency cost and maximized the Stochastic Frontier Approach (SFA) to come up with the efficiency scores. The study established that the Singapore's banks has higher efficiency rates than the Malaysia's banks. Furthermore, the study showed that association amid NPL and efficient were significantly negative. This assessment took place in Malaysia and Singapore therefore the context varies with the Kenyan setting, thus finding can to be used fully.

Ikpefan (2013) strived to determine the association between adequacy of capital, management and performance. The context of this study was Nigerian Commercial bank. In this particular instance, the adequacy of capital was assessed based on the total assets of the shareholders and their funds, while the efficiency was measured by the operational expenses. Additionally, the research optimized secondary information underscored by cross-sectional and time series. Moreover, multi-regression approach was the cornerstone in scrutinizing the data. The study established that adequacy of capital posted negative influence on performance whereas management efficiency displayed a negative influence on capital return. The study was conducted in Nigeria while the current study is the Kenyan context.

Auguenaou, Lahrech and Bounekaya (2017) conducted research on the impacts of efficiency on

performance measurement. This study examined individual banks in Morocco in which the study obtained secondary data from their financial statements. Furthermore, the study used regression analysis model to examine the collected data while efficiency rates were derived by the use of DEA. The study established that liquidity have negative influence on efficiency. On the other hand, earnings have negative but insignificant impact on efficiency. The study is in the context of Morocco whereas the present evaluation is in context of Kenya and it focus on effects of financial soundness on the profitability of DTS in Kenya.

Asima, Mahmood, Raheel and Arif (2007) assessed the influence of variables of financial on the performance of banks in Pakistan. This evaluation aimed performance prior to and after 2008 financial challenge. The study used multiple regression analysis model to analyze information gathered. The study uncovered that 2008 setbacks had a significant impact on the performance financially while quality of earning had negative impacts on the performance of Pakistan's Banks. The study majored on banks institutions in Pakistan whereas the current study majored on DTSs in Kenya.

Austina Tortosa (2012) scrutinized association amid quality of earnings and banks' performance in Spain. The study established that earnings strength did not have crucial impacts on profitability. Moreover, the study utilized performance as dependent element. This study failed to elaborate well the relationship between variables. In addition, the study took place in Spain therefore findings can be utilized fully in the Kenyan market settings.

Muhadzdzib and Margaretha (2022) carried out a study to establish the influence financial healthiness on performance financially. Additionally, the study maximized the CAMEL elements; asset quality, management of efficiency, quality of income, capital adequacy and liquidity. In the

other side, the depended variants use NIM and ROE. The evaluation used data gathered from 27 banking institution registered on IDX. The study period was 5 years between 2017 and 2021, further, the research used panel data regression approach in examination of data. The findings showed that capital adequacy, asset quality, liquidity and quality of income had positive and significant influence on performance financially. However, efficiency management had negative and significant impacts on performance financially. The study leaved a gap that need to be filled when it comes to subject of effects of financial soundness on the profitability of DTS in Kenya.

### 2.5 Conceptual Framework

This flowchart is an important representation of the interconnections between liquidity, asset quality, management efficiency, capital adequacy, and profitability. It provides a visual depiction of how these factors are related to each other, and how they impact the overall profitability of an organization. Upon reviewing the chart, it becomes evident that there is a clear interrelationship between the explanatory and explained variables. The chart illustrates how changes in the explanatory variables directly influence the variations observed in the explained variable. This paramount in comprehending and appreciating the dynamics of the system or phenomenon being studied. Hence research, can unravel the complex correlation and dynamics at play and gain a deeper knowledge of the determinants facilitating the variations. The interplay between these factors ultimately determines the profitability of the organization. The flowchart offers a snapshot of these relationships and can be a useful tool for analyzing the financial soundness of an organization.

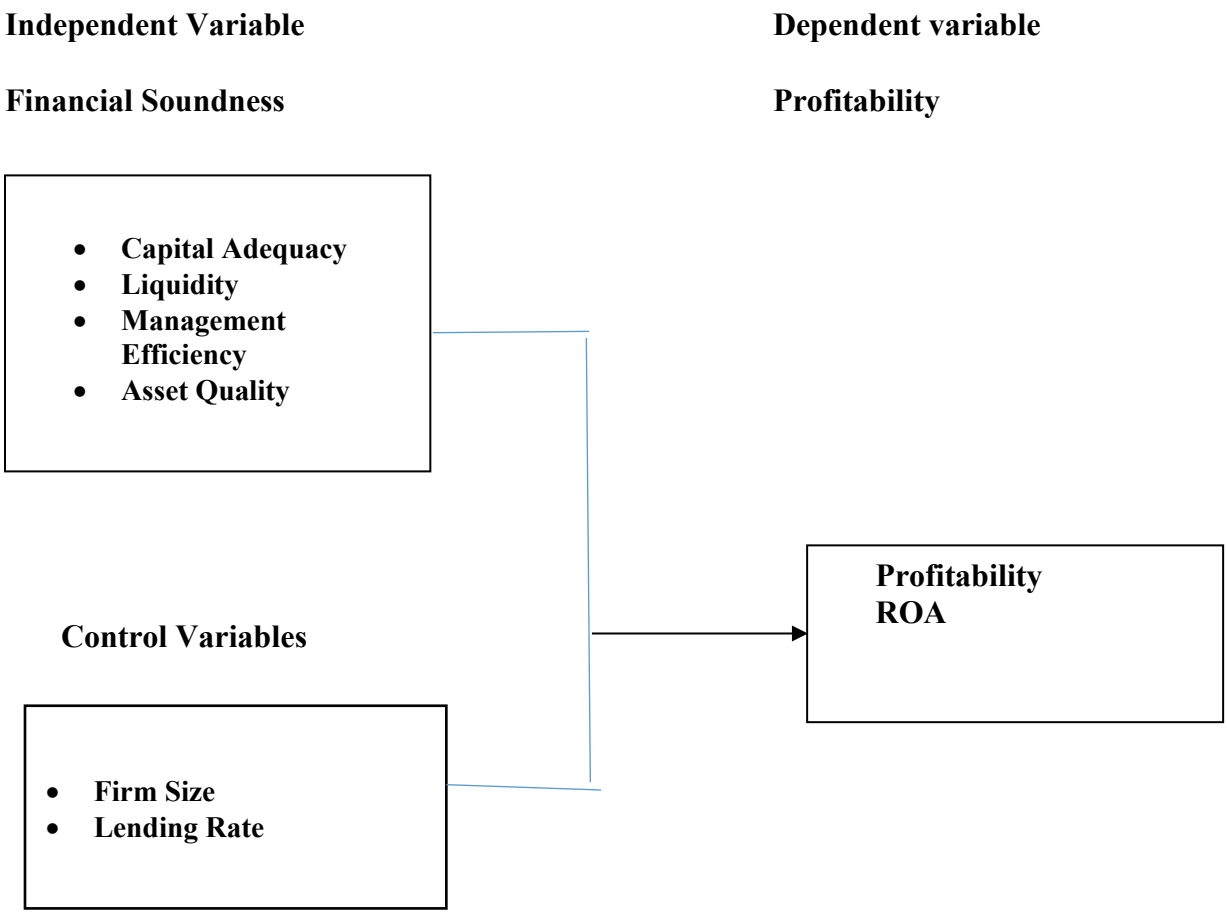


**Figure 2.1: Conceptual Model** **Source: Author(2023)**

## 2.6 Summary of Literature Review, Research Gaps and Critique

The study did a lot of benchmark of studies that has been conducted before and point out numerous contributions, gaps and criticisms Muhadzbzib and Margaretha (2022) maximized CAMEL to investigate monetary stability whereas study expedited by Austina and Torotosa (2012) in Spain cannot be generalized in the Kenyan Context. In addition, Valeed, Ansari and Wubshnet (2014) also undertook global research whereas Kirimi, Kariuki and Ocharo (2022) spearheaded a local study. The prevailing study aimed to fill a conceptual and contextual gap pointed out in each preceding empirical studies. Moreover, the empirical reviews unveil that different methodology has been applied resulting in mixed and controversial outcome, as a consequence, this research

aims at closing that gap. The study utilized three theoretical frameworks: the capital adequacy theory, resource dependency theory, and financial distress theory, to identify crucial topics in assessing the relationship between financial soundness and profitability in DTS. In addition, the study aimed to determine how determinants of financial soundness, including liquidity, asset quality, management efficiency, and capital adequacy, impact profitability. By examining these factors, the study may provide useful insights into improving performance financially and long-term sustainability for DTS

# CHAPTER THRE: RESEARCH METHODOLOGY

## 3.1 Introduction

This chapter presents the methods utilized in the research to obtain dependable and valid results. It forms the foundation of the entire study and encompasses aspects such as sampling technique utilized, study sample, target population and research design. It also covers the type of data and data collection instruments used, analysis techniques, and presentation of the empirical models. Additionally, this section addresses the measurement and operationalization of variables, as well as diagnostic tests conducted to ensure data adherence to the techniques employed in testing the research hypotheses.

## 3.2 Research Design

The roadmap of any investigative undertaking is research design. It is a master plan aspect of the research process, which includes the development of research objectives, hypotheses and the reporting of the final outcome. Kothari (2015), the research design specifies critical timeframe and the research process. Similarly, Coopers and Schnidler (2015) defines research design as a master plan that outlines the techniques incorporated in collecting and analyzing the relevant information. Sekaran and Bougie (2011) state that a research design aims to discover new information, expound what exists, and categorize information based on the frequency of occurrence.

For this study, a descriptive design was considered as the most suitable. Kipkirui (2020) supports this design, especially when the variables under study are not manipulated during the research. This design is chosen as the study aimed to explain the factors that cause change and to clarify how a phenomenon operates. Furthermore, this design is suitable for establishing the causal relationship between the variables studied and the occurrence of a problem.

### 3.3 Population

This study focused on examining 50 DTS and the population under study plays a crucial role in the research process. By selecting an appropriate population, this study provides meaningful outcomes that bridge knowledge gaps. Additionally, an appropriate population is beneficial for enhancing forecasting as it provides a high degree of generalizability.

Selecting an appropriate population is crucial for a study as it can impact the credibility and dependability of the results. Thus, this research endeavors to obtain an inclusive sample that represents the entire population to ensure the generalizability of the findings. Moreover, collecting data from secondary sources enhances the trustworthiness and accuracy of the results by offering diverse data sources (Kirimi, Kariuki & Ocharo, 2022). The benefit of increasing forecasting accuracy through a high degree of generalizability is particularly advantageous, as it enables the findings to be applicable to a larger population. The list of the sampled and operational DTS as at 31st December, 2022, can be found in Appendix I.

### 3.4 Sample

The study employed a systematic random sampling was utilized to give relevant and appropriate information. The selection of 50 firms was possible by selecting every 3rd element from the list of DTS. This is because there were 150 DTS in 2020 (SASRA, 2021). This technique is relatively easy and efficient way to obtain a representative sample of a population. It ensures that each member of the population has an equal chance of being included in the sample, which reduces the potential for bias in the sample. Additionally, it is less time-consuming than other probability sampling techniques such as simple random sampling because it does not require the generation of random numbers. However, systematic random sampling may introduce bias if there is a pattern in the list of the population that is related to the variable being studied.

### 3.5 Data Collection

This research primarily utilized quantitative secondary data, which has several benefits such as its ability to facilitate comparative analyses, require fewer resources, be applied in longitudinal studies, and provide permanence. The sources of this secondary data are the DTS financial statements and supervision reports obtained from SASRA. The study period spans from 2018 to 2022, and the guidelines for document review are provided in Appendices I and II.

### 3.6 Data Analysis

The data collected from secondary sources underwent a rigorous and comprehensive analysis process to ensure its quality. This involved several procedures aimed at enhancing the standards of the data, including assembling, reviewing, classifying, and coding it in a logical manner. The significance of data cannot be overstated as it is the foundation for generating reliable and accurate findings (Kirimi, Kariuki & Ocharo, 2022). Thus, it is essential to ensure that the data is of the highest quality possible. To achieve this goal, various tools and techniques were utilized, and SPSS was a key component of the analysis process.

The multiple linear regression analysis method was employed to analyze the data and generate meaningful insights. This statistical technique allows for the examination of the relationship between multiple independent variables and a single dependent variable, which is crucial in understanding the various factors that impact the research question under investigation. The process of sourcing, preparing, and analyzing data is complex and requires careful attention to detail and a comprehensive understanding of the research goals and objectives. By using appropriate tools and techniques, it is possible to generate reliable and accurate findings that can drive progress and inform decision-making in a wide range of fields.

### 3.6.1 Diagnostic Tests

This study intends to undertake rigorous and extensive diagnostic tests (Kipkirui, 2020). To ensure that the data used for regression analysis adheres to the assumption of normal distribution, the study utilized the Shapiro-Wilk test. This test compares the distribution of the data to a normal distribution based on mean and standard deviation. A p-value greater than the critical significance level indicates that the data is normally distributed, while a p-value less than 0.05 implies that the data is significantly different from a normal distribution or not normally distributed, requiring the use of non-parametric tests.

Serial correlation measures the cross-correlation that exists between a signal of a variable and itself at different time periods. This study employed the Durbin Watson test to test for the presence of correlation in the linear panel data. The null hypothesis was that there was no serial correlation. If the null hypothesis was rejected, the study would use the Feasible Generalized Least Squares (FGLS) model, which uses maximum likelihood, to account for serial autocorrelation.

Multicollinearity, the correlation of over 70% between two or more predictor variables, were tested using the Variance Inflation Factor (VIF), with a threshold of 10 for severe multicollinearity. Multicollinearity can result in infinite standard errors, which undermines the precision of hypothesis testing. To address multicollinearity, one of the highly correlated variables were eliminated. The severity of multicollinearity was also considered, as it determines which variables to drop.

### 3.6.2 Empirical Model

The main aim of the data analysis is to arrive at a definitive conclusion that clarifies the existing relationships among the variables. This analysis involved utilizing a model that can illustrate the correlations among the different factors in a single instance. By analyzing the model, it is feasible

to pinpoint numerous crucial aspects that are necessary for explaining the predicted variable when all predictor variables are integrated (Burns & Groove, 2010).

In a nutshell, the model can be presented in a concise manner that summarizes its principal constituents and characteristics. This format provides a clear and comprehensive overview of the various factors that are involved in the analysis process. As a consequence, utilization of this model is plausible to producing precise and dependable findings that can aid in decision-making and facilitate progress in various fields.

$Y=\alpha 0+\beta_1 X_1+\beta_2 X_2+\beta_3 X_3+ \beta_4 X_4+\varepsilon$

Whereby:

Y= Profitability (ROA)

$\alpha 0$=y intercept of the regression (constant variable)

$X_1$= Capital Adequacy (Core Capital/Total Assets)

$X_2$= Liquidity (Cash+ Receivables +Market Securities/Operating Expenses Interest+ Taxes)

$X_3$= Management Efficiency (Sales/Average aggregate assets)

$X_4$= Asset Quality (Non-Performing Loans/ Gross total loans)

$X_5$= Firm Size (Natural log of aggregate Assets)

$X_6$= Lending Rate (Lending Income divided by Total Assets)

$\varepsilon$= error term

### 3.6.3 Significance Tests

The predominant aim of the study is to ascertain the level of significance of the data being investigated. To achieve this objective, the T-test and F-test were instrumental in clarifying the various levels of significance. Specifically, the statistical significance of the data was explained using the 5% and 95% confidence levels.

Moreover, the analysis of variance (ANOVA) was employed to elucidate the distribution of the data with respect to the mean. This approach involves analyzing and comparing diverse data sets to improve understanding of the underlying trends and patterns. Moreover, through evaluation of the variance of the data, valuable insights can be obtained into the significance of the research findings and the associations among the variables under scrutiny.

In summary, this assessment utilized an array of statistical methods and tests to establish the level of significance of the data. This necessitated a comprehensive analysis of the confidence levels, as well as an evaluation of the distribution of the data relative to the mean. Through careful consideration of these factors, it is feasible to generate precise and meaningful results that can guide decision-making and advance progress across numerous domains.

# CHAPTER FOUR: DATA ANALYSIS AND INTERPRETATION OF FINDINGS

## 4.1 Introduction

The chapter outlines a thorough coverage of analysis of data as well as the interpretation of the main outcomes. The results of the data analysis are outlined in the form of graphs and tables. The chapter is crucial in the presentation of a test of the relationships between the independent factors including capital adequacy, liquidity, management efficiency, asset quality, firm size and lending rate on the dependent factor that was the profitability of Kenyan SACCOs that take deposits.

## 4.2 Descriptive Statistics

The descriptive statistics of the study entailed the means, standard deviations, minimum and the corresponding maximum values of the variables under study. The descriptive results of the study are outlined in Table 4.1.

**Table 4.1: Descriptive Statistics**

| Variable | | Mean | Std. Dev. | Min | Max | Observations | |
|---|---|---|---|---|---|---|---|
| ROA | overall | 0.02776 | 0.00504 | 0.02007 | 0.03974 | N = | 245 |
| | between | | 0.00037 | 0.02731 | 0.02822 | n = | 5 |
| | within | | 0.00503 | 0.01995 | 0.03996 | T = | 49 |
| Capital Adequacy | overall | 0.29285 | 0.05122 | 0.2004 | 0.3985 | N = | 245 |
| | between | | 0.00135 | 0.29099 | 0.29456 | n = | 5 |
| | within | | 0.05121 | 0.19949 | 0.39715 | T = | 49 |
| Liquidity | overall | 1.61354 | 0.21485 | 1.235 | 1.993 | N = | 245 |
| | between | | 0.00739 | 1.60482 | 1.62184 | n = | 5 |
| | within | | 0.21474 | 1.22878 | 2.00172 | T = | 49 |
| Management Efficiency | overall | 0.15575 | 0.02782 | 0.1011 | 0.1897 | N = | 245 |
| | between | | 0.00297 | 0.15281 | 0.16006 | n = | 5 |
| | within | | 0.0277 | 0.09699 | 0.19214 | T = | 49 |
| Asset Quality | overall | 0.05784 | 0.0193 | 0.02361 | 0.08985 | N = | 245 |
| | between | | 0.00179 | 0.05564 | 0.06018 | n = | 5 |
| | within | | 0.01923 | 0.0225 | 0.08974 | T = | 49 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Firm Size | overall | 5.47703 | 0.15885 | 5.04448 | 5.7599 | N = | 245 |
| | between | | 0.00639 | 5.46979 | 5.48458 | n = | 5 |
| | within | | 0.15875 | 5.05173 | 5.75537 | T = | 49 |
| Lending rate | overall | 0.85837 | 0.63362 | 0.00339 | 1.99418 | N = | 245 |
| | between | | 0.07981 | 0.7334 | 0.93668 | n = | 5 |
| | within | | 0.62957 | -0.0725 | 2.10836 | T = | 49 |

From the descriptive outcomes, the adequacy of capital in the review garnered the lowest value was 0.2007 between 0.02731 and within 0.02731. The highest values was 0.03974 between 0.02822 and within 0.03996. Its average value was 0.02776 and its SD was 0.00504 between 0.00037 and within 0.00503. This meant that the adequacy of capital changed over the review period. In addition, the outcomes of liquidity of the SACCOs under review indicated that its average value was 1.61354 and its SD was 0.21485 between 0.00739 and within 0.21474. This entailed that there were changes in the liquidity of the societies under review over period. The maximum and minimum liquidity values for the societies were 1.235 and 1.993. The minimum values ranged between 1.60482 and within 1.22878 whereas the maximum values ranged between 1.62184 and within 2.00172. The efficiency of management of the societies received a maximum and minimum value of 0.1011 and 0.1897. The maximum values ranged between 0.16006 and within 0.19214 whereas the minimum values ranged between 0.15281 and within 0.9699. The average figure for the variable was 0.15575 and its SD was 0.02782 within 0.00297 and within 0.0277. On the other hand, the quality of the assets for the societies had a maximum and minimum values being 0.08985 and 0.02361. The maximum values ranged between 0.06018 and within 0.08974 whereas the minimum values ranged between 0.05564 and within 0.0225. Its average value was 0.05784 while the SD was 0.0193 between 0.00179 and within 0.01923. The size of the

societies under review received an average value of 5.47703 and an SD of 0.15885 between 0.00639 and within 0.15875. Its lowest and highest values were 5.04448 and 5.7599. The minimum value ranged between 5.46979 and within 5.05173 while the maximum value ranged between 5.48458 and within 5.75537. The rate of lending for the respective societies recorded maximum and minimum values of 1.99418 and 0.00339. The maximum value ranged between 0.93668 and within 2.10836 while the minimum value ranged between 0.7334 and within -0.0725 . Its SD and mean values were 0.63362 and 0.85837. The SD ranged within 0.62957 and between 0.07981. Finally, the profitability of the societies recorded a maximum and minimum value of 0.03974 and 0.02007 in that order. Its mean and SD were 0.02776 and 0.00504 respectively.

### 4.3 Trend Analysis

The analysis of trend forms an important part in contrasting and comparing behaviour and the pattern. It outlines the behaviour of variables in particular years of analysis. From this analysis, the period was abundant for sound decisions.

#### 4.3.1 Trend Curve for Profitability

The trend line for profitability of the deposit taking SACCOs in Kenya is outlined in Figure 4.1

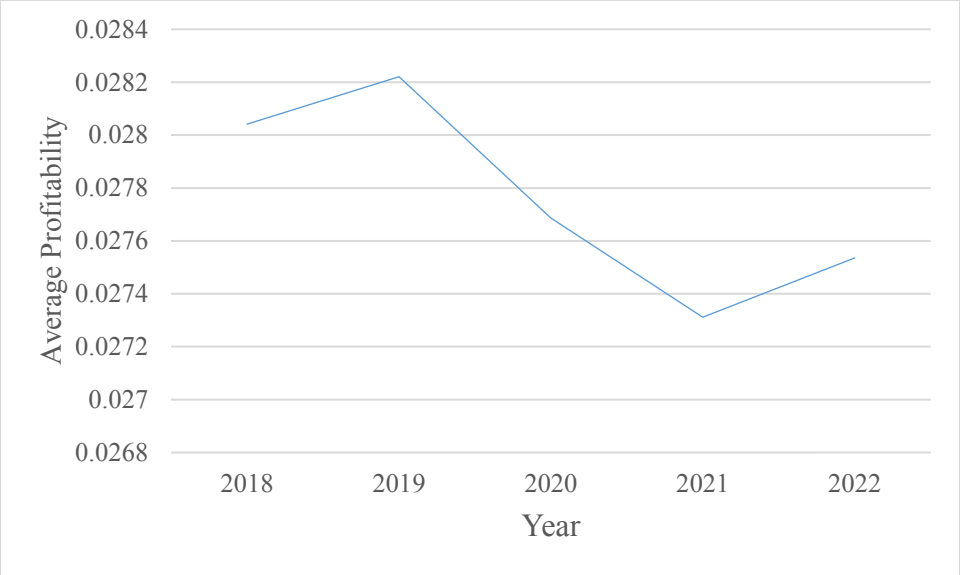


**Figure 4.1: Trend Line for Profitability**

It can be observed that profitability varied throughout the period of study. Between 2018 and 2019, there was a slight improvement of profitability of societies that take deposits in Kenya. However, between 2019 and 2021, there was a significant decline in the profitability of the deposit taking SACCOs. Between 2021 and 2022, there was no significant changes in the profitability of the societies under study.

### 4.3.2 Trend Curve for Capital Adequacy

The trend line for adequacy of capital of the Kenyan SACCOs that take deposits is outlined in Figure 4.2

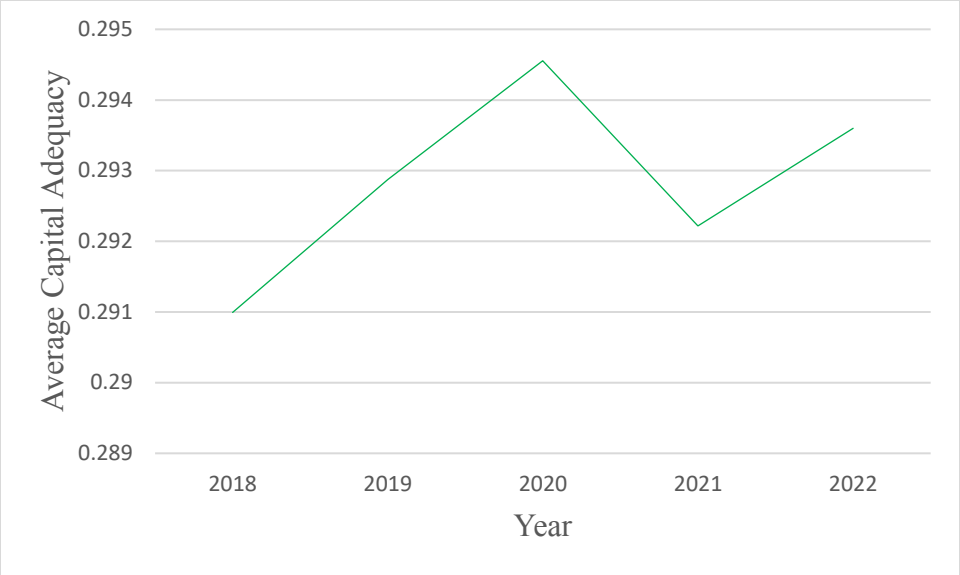


**Figure 4.2: Trend Line for Capital Adequacy**

It is worth noting that adequacy of capital varied throughout the period of study. Between 2018 and 2020, there was a significant improvement in the adequacy of capital of the societies, as evidenced from the results. However, between 2020 and 2021, the adequacy of capital saw a decline and later an improvement between 2021 and 2021.

### 4.3.3 Trend Curve for Liquidity

The trend line for liquidity of the deposit taking SACCOs in Kenya is outlined in Figure 4.3

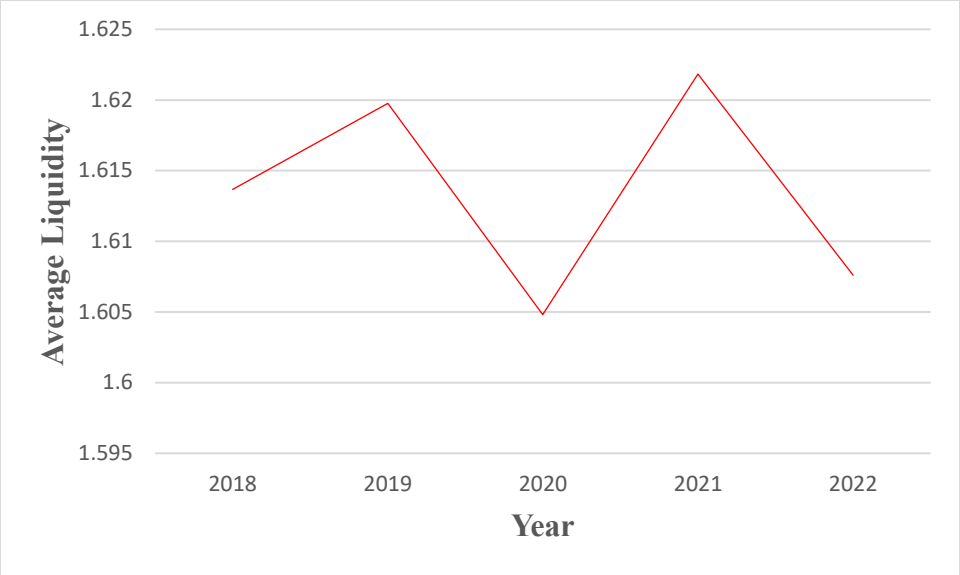


**Figure 4.3: Trend Line for Liquidity**

As seen from the outlined outcomes, liquidity varied throughout the period of study. Between 2018 and 2019, there was an improvement in the liquidity of the deposit taking societies in Kenya. However, between 2019 and 2020, the liquidity of the societies declined significantly. Between 2020 and 2021, the liquidity of the societies improved significantly and later declined steeply between 2021 and 2022.

### 4.3.4 Trend Curve for Management Efficiency

The trend line for management efficiency of the deposit taking SACCOs in Kenya is outlined in Figure 4.4

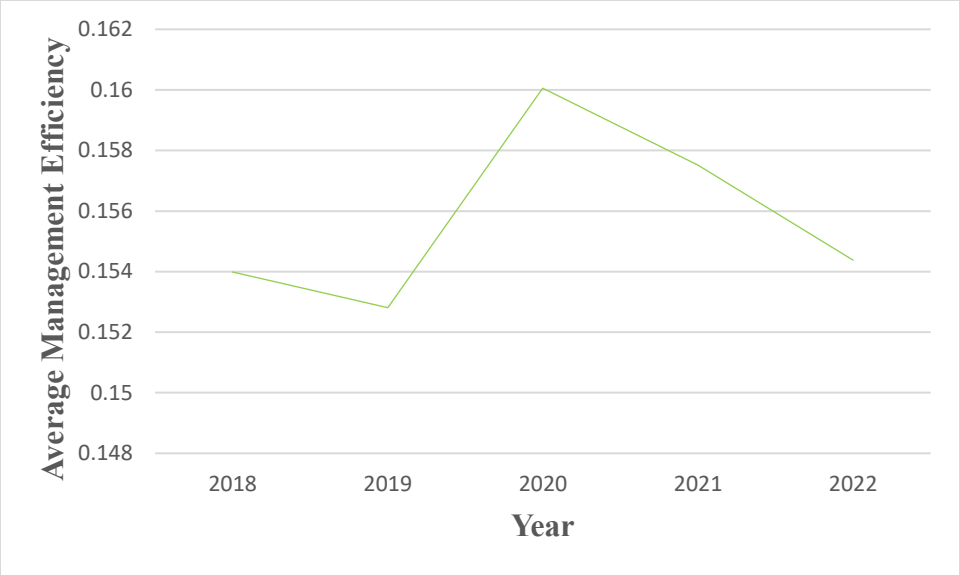


**Figure 4.4: Trend Line for Management Efficiency**

The outcomes recorded postulate that efficiency of management varied throughout the period of study. There were no significant changes in the efficiency of management of the SACCOs between 2018 and 2019. However, between 2019 and 2020, there was a significant improvement in the efficiency of management. However, the SACCOs saw a decline in the efficiency of management between 2021 and 2022.

### 4.3.5 Trend Curve for Asset Quality

The trend line for asset quality of the deposit taking SACCOs in Kenya is outlined in Figure 4.5

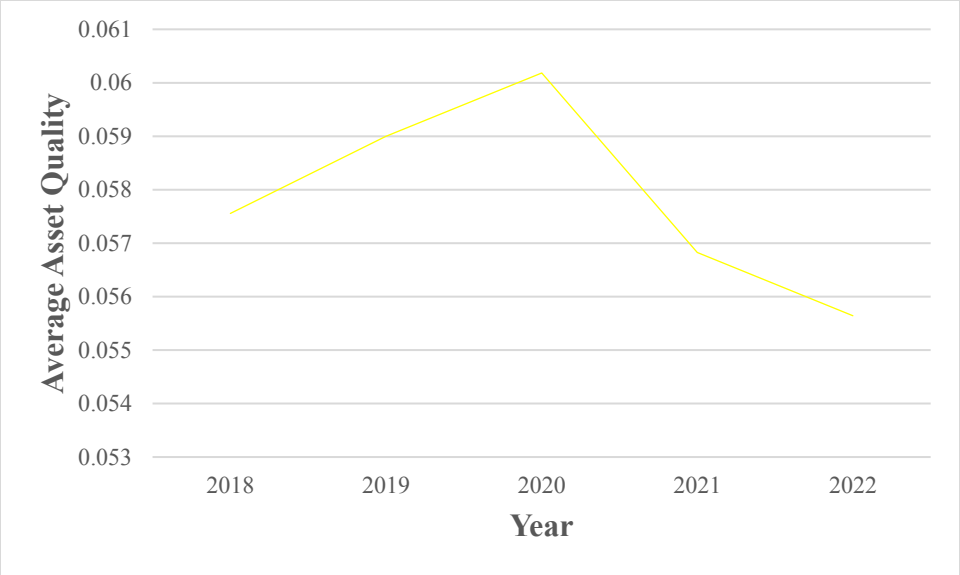


**Figure 4.5: Trend Line for Asset Quality**

As can be observed from the findings, quality of assets of the societies varied throughout the period of study. As can be seen from the results, there was an improvement in the quality of assets of the Kenyan deposit taking SACCOs in between 2018 and 2020. However, the quality of assets began to decline significantly between 2020 and 2022.

### 4.3.6 Trend Curve for Firm Size

The trend line for firm size of the deposit taking SACCOs in Kenya is outlined in Figure 4.6

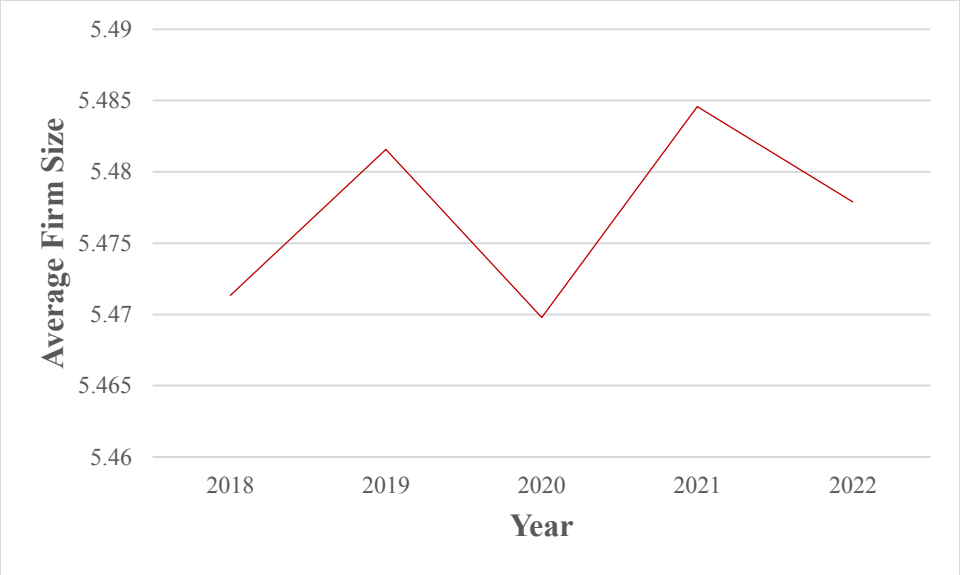


**Figure 4.6: Trend Line for Firm Size**

The outcomes conclude that size of the societies varied throughout the period of review. The size increased between 2018 and 2019, declined significantly between 2019 and 2020. Between 2020 and 2021, there was a significant improvement in the size of the SACCOs which late saw a decline between 2021 and 2022.

### 4.3.7 Trend Curve for Lending Rate

The trend line for lending rate of the deposit taking SACCOs in Kenya is outlined in Figure 4.7

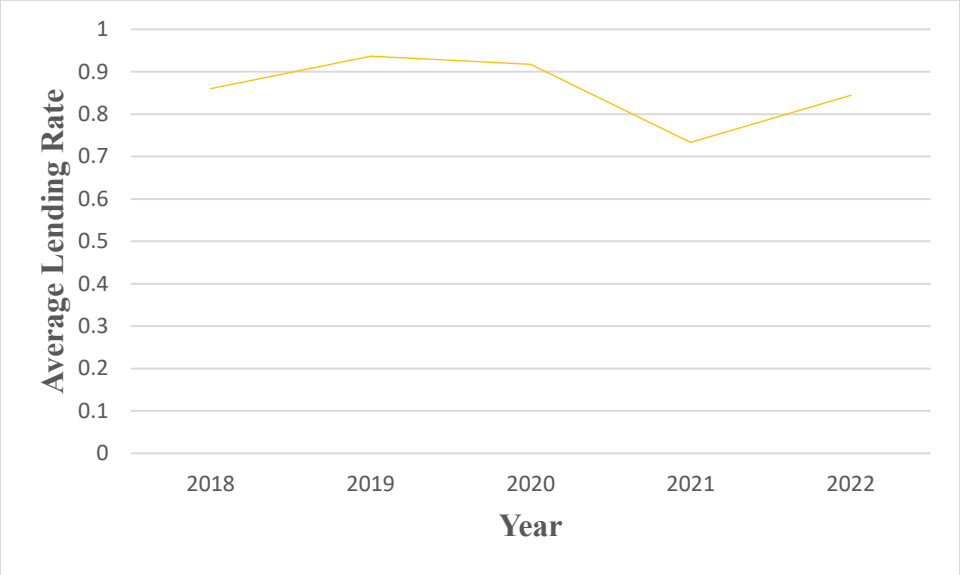


**Figure 4.7: Trend Line for Lending Rate**

As can be seen, lending rate varied throughout the period of study. There was no significant changes in the SACCOs' rate of lending between 2018 and 2021. However, there was a slight increase in the rate of lending between the year 2021 and 2022.

### 4.4 Correlation Analysis

In an establishing the direction and magnitude of the association between the factors under review, an analysis of correlation is conducted. The factors were capital adequacy, liquidity, management efficiency, asset quality, firm size and lending rate dependent on the profitability. Values of correlation lie between -1 and +1 pointing out to perfect negative and perfect positive correlations respectively and a figure of 0.000 imply no association. Strong correlation is provided for by figures over 0.5 whereas weak association is implied by figures less than 0.5.

**Table 4.2: Correlation Results**

| | ROA | Capital Adequacy | Liquidity | Management Efficiency | Asset Quality | Firm Size | Lending Rate |
|---|---|---|---|---|---|---|---|
| ROA | 1.000 | | | | | | |
| Capital Adequacy | 0.614<br>0.000 | 1.000 | | | | | |
| Liquidity | 0.6264<br>0.000 | 0.6531<br>0.000 | 1.000 | | | | |
| Management Efficiency | 0.6029<br>0.000 | 0.6248<br>0.000 | 0.6056<br>0.000 | 1.000 | | | |
| Asset Quality | 0.6685<br>0.000 | 0.6878<br>0.000 | 0.5828<br>0.000 | 0.5828<br>0.000 | 1.000 | | |
| Firm Size | 0.4054<br>0.000 | 0.3678<br>0.000 | 0.3389<br>0.000 | 0.3461<br>0.000 | 0.3284<br>0.000 | 1.000 | |
| Lending Rate | 0.6089<br>0.000 | 0.6766<br>0.000 | 0.5633<br>0.000 | 0.5482<br>0.000 | 0.5628<br>0.000 | 0.3456<br>0.000 | 1.000 |

The outcomes recorded point out that the correlation between profitability and the adequacy of capital was both significant and positive ($\beta = 0.614$, $p= 0.000<0.05$). Liquidity and profitability significantly and positively correlated ($\beta = 0.6264$, $p= 0.000<0.05$). Furthermore, the efficiency of management recorded a positive as well as significant correlation with profitability ($\beta = 0.6753$, $p= 0.000<0.05$). The quality of assets for the societies was positively and significantly associated with profitability ($\beta = 0.6685$, $p= 0.000<0.05$). There was a significant positive correlation between the size of the respective societies and profitability ($\beta = 0.4054$, $p= 0.000<0.05$). The outcomes further showed that the rate of lending positively, significantly related with profitability ($\beta = 0.6049$, $p= 0.000<0.05$).

### 4.5 Diagnostic Tests

The tests were carried out to determine the suitability of the data in the study for regression analysis and model estimation. The conducted tests included the tests for multicollinearity, normality, heteroscedasticity, autocorrelation as well the as the hausman specification tests.

#### 4.5.1 Normality Tests

These tests entail the process of ascertaining whether the data follows a normal distribution. The process involves testing the hull hypothesis and concluding from the outcomes on the kind distribution the data follows. The null hypothesis is that the data do not follow normal distribution. If the significance value estimated is greater than 0.05, the study rejects the null hypothesis and fails to reject the alternative hypothesis.

**Table 4.3: Results for Normality Test.**

| | Obs | Pr(Skewness) | Pr(Kurtosis) adj | chi2(2) | Prob>chi2 |
|---|---|---|---|---|---|
| Profitability | 245 | 0.109 | 0.368 | 1.350 | 0.779 |
| Capital Adequacy | 245 | 0.114 | 0.706 | 0.150 | 0.569 |
| Liquidity | 245 | 0.240 | 0.070 | 6.660 | 0.125 |
| Management Efficiency | 245 | 0.372 | 0.191 | 3.920 | 0.193 |
| Asset Quality | 245 | 0.122 | 0.335 | 8.125 | 0.672 |
| Firm Size | 245 | 0.325 | 0.128 | 7.123 | 0.638 |
| Lending Rate | 245 | 0.116 | 0.392 | 4.971 | 0.994 |

From the results outlined, it is evident that the data in the study follows a normal distribution. This supported by the estimated significance values of the factors which are all > 0.05 (0.779, 0.569, 0.125, 0.193, 0.672, 0.638, 0.994). Thus, the study concludes that the dataset follows a normal distribution and hence the data is good to be used answering research questions.

### 4.5.2 Tests for Multicollinearity

Multicollinearity tests are conducted to determine the degree of correlation among the factors in the study. When factors are highly correlated, one of the variables should not be included in the study because the highly correlated variables give the same explanation. The study adopted the variance inflation factor method in testing for multicollinearity. VIF values >10 implies that there multicollinearity among the factors under review. However, VIF values<10 implies that there is no multicollinearity.

**Table 4.4: Multicollinearity Test Results**

| Variable | VIF | 1/VIF |
|---|---|---|
| Capital Adequacy | 2.86 | 0.35 |
| Asset Quality | 2.14 | 0.46812 |
| Liquidity | 2.07 | 0.4832 |
| Lending Rate | 2.03 | 0.49351 |
| Management Efficiency | 1.98 | 0.50455 |
| Firm Size | 1.21 | 0.82545 |
| **Mean VIF** | **2.05** | |

From the results outlined, it can be concluded that there is no multicollinearity in the data set. This is because the VIF values from the results are all <10 (2.86<10, 2.14<10, 2.07<10, 2.03<10, 1.98<10, 1.21<10). Thus, the study concludes that the data is good to be used answering research questions.

### 4.5.3 Test for Heteroscedasticity

In establishing the association between the errors of regression with the dependent factor, heteroscedasticity tests are carried out. Breusch-Pagan / Cook-Weisberg test was explored in the investigation. As a decision rule, if the values of $Chi^2$ are large, the conclusion to be made is the presence of heteroscedasticity in the data.

**Table 4.5: Heteroscedasticity Test Results**

| **Breusch-Pagan / Cook-Weisberg test for heteroskedasticity** |
|---|
| Ho: Constant variance |
| Variables: fitted values of ROA |
| |
| chi2(1) = 0.70 |
| Prob > chi2 = 0.4030 |

The $Chi^2$ recorded was 0.70. This figure is relatively small and implying that the regression errors do not related with the independent factor. Thus, the data is fit for other analysis.

### 4.5.4 Test for Autocorrelation

An analysis to establish the error term correlation across time periods is necessary. This is especially common in the analysis of panel data which covers a specified periods of time. In carrying out these test, the null hypothesis, no first order autocorrelation was conducted. The outcomes are outlined herein.

**Table 4.6 Autocorrelation test results**

| **Wooldridge test for autocorrelation in panel data** |
|---|
| F( 4,61) = 0.745 |
| Prob > F = 0.4206 |

The null hypothesis is rejected if the test results are insignificant at 95% level of significance. Thus, from the outcomes recorded, the significance value was 0.4206 whereas the F statistic was 0.745. This hence gives the implication that the assessment failed to reject the alternative hypothesis and made the conclusion that there was no autocorrelation among the error terms over the period under review.

### 4.5.5. Hausman Specification Test

The test was conducted to ascertain the type of model that is suitable for the study. The model could be RE model or fixed effects model. As a rule of thumb, if the p value from the hausman test results > 0.05, then the study concludes that the FE model is appropriate. However, if the estimated p value is <0.05, the study concludes that the RE model is appropriate.

**Table 4.7: Hausman Test Results**

```
. hausman fe re
```

| | Coefficients (b) fe | (B) re | (b-B) Difference | sqrt(diag(V_b-V_B)) S.E. |
|---|---|---|---|---|
| CapitalAde~y | .0275164 | .0271996 | .0003168 | .0007364 |
| Liguidity | .0033442 | .003428 | -.0000838 | .0001587 |
| Management~y | .0217651 | .0196861 | .002079 | .0016168 |
| AssetQuality | .0603003 | .0607586 | -.0004583 | .0019386 |
| FirmSize | .0031958 | .0032002 | -4.38e-06 | .0001326 |
| LendingRate | .0008408 | .0009101 | -.0000694 | .0000804 |

```
                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(6) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                          =         1.83
                Prob>chi2 =       0.9347
```

As can be seen, the estimated P value from the hausman test results is > 0.05 (0.9347>0.05). Thus, the study made the decision that the FE model is the appropriate model for the study. Thus, the study proceeds to run a panel regression model.

### 4.6 Fixed Effects Model

An analysis of panel regression was conducted to ascertain the existence of a linear relationship between the variables under review. The dependent variable of the study was profitability. The

independent variables were adequacy of capital, liquidity, efficiency of management, asset quality, firm size and lending rate. The results for the regression analysis are outlined in the subsequent sections.

**Table 4.8: Regression Coefficients**

```
Fixed-effects (within) regression               Number of obs      =       245
Group variable: Year                            Number of groups   =         5

R-sq:                                           Obs per group:
     within  = 0.6228                                         min =        49
     between = 0.0711                                         avg =      49.0
     overall = 0.6201                                         max =        49

                                                F(6,234)           =     64.39
corr(u_i, Xb)  = -0.0104                        Prob > F           =    0.0000
```

| ROA | Coef. | Std. Err. | t | P>\|t\| | [95% Conf. | Interval] |
|---|---|---|---|---|---|---|
| CapitalAdequacy | .0275164 | .0066876 | 4.11 | 0.000 | .0143409 | .0406919 |
| Liguidity | .0033442 | .0013579 | 2.46 | 0.015 | .0006688 | .0060196 |
| ManagementEfficiency | .0217651 | .0103189 | 2.11 | 0.036 | .0014354 | .0420948 |
| AssetQuality | .0603003 | .0153779 | 3.92 | 0.000 | .0300035 | .0905971 |
| FirmSize | .0031958 | .0014019 | 2.28 | 0.024 | .000434 | .0059577 |
| LendingRate | .0008408 | .0004596 | 1.83 | 0.069 | -.0000647 | .0017462 |
| _cons | -.010798 | .0074165 | -1.46 | 0.147 | -.0254096 | .0038136 |
| sigma_u | .00036798 | | | | | |
| sigma_e | .0031554 | | | | | |
| rho | .01341719 | (fraction of variance due to u_i) | | | | |

```
F test that all u_i=0: F(4, 234) = 0.65                     Prob > F = 0.6264
```

It is clear from the results shown that capital adequacy, liquidity, management efficiency, asset quality, firm size and lending rate explains to a tune of 0.6201% of the total changes in the profitability of the deposit taking SACCOs in Kenya. This conclusion is supported by the value of R Squared (0.6201) in the model. Thus, the identified variables are significant determinants of profitability of the deposit taking SACCOs in Kenya.

The regression coefficient results point out that the coefficient of capital adequacy was both statistically significant as well as positive ($\beta = 0.275$, $p = 0.000 < 0.05$). This implies that a unit

increase in the capital adequacy results in 0.275 units significant improvement in the profitability of deposit taking SACCOs in Kenya. Thus, adequacy in capital is a significant determinant of profitability of the societies. Capital adequacy is essential in examining the impact of stability financially on profitability. The results of the analysis are consistent with the findings of Odunga, Nyangweso, and Nkobe (2015) who postulated a positive impact of capital adequacy on efficiency. In addition, Valeed, Ansari and Wubshnet Fola (2014) indicated that policies and standards in India play a pivotal role in ensuring performance financially and soundness. Moreover, the research found that there is a significant correlation in the midst of sufficiency of capital, asset quality, managerial effectiveness, profitability, earnings, and liquidity status in both public and private life insurance sectors. Muhadzdzib and Margaretha (2022) showed that capital adequacy, asset quality, liquidity and quality of income had positive and significant influence on performance financially. However, efficiency management negatively and significantly impacts performance financially. However, Pessarossi and Weill (2013) argued no significant impact of capital adequacy on microfinance performance. Ikpefan (2013) established that adequacy of capital posted negative influence on performance whereas management efficiency displayed a negative influence on capital return.

The regression coefficient results point out that the coefficient of liquidity was both statistically significant as well as positive ($\beta = 0.003$, $p= 0.015<0.05$). This implies that a unit increase in the liquidity results in 0.003 units significant improvement in the profitability of deposit taking SACCOs in Kenya. Thus, liquidity is a significant determinant of profitability. It is imperative to elucidate that liquidity is an epicenter factor that measures an ability of entity to convert its assets into cash or access funds when required. In simple terms, liquidity refers to having access to or obtaining cash at the time of need. The results of the analysis are consistent with the findings of

Muhadzdzib and Margaretha (2022) who showed that adequacy of capital, quality of assets, liquidity and quality of income had positive and significant influence on performance financially. However, efficiency management negatively impacts performance financially. Valeed, Ansari and Wubshnet Fola (2014) found that there is a significant correlation in the midst of sufficiency of capital, asset quality, managerial effectiveness, profitability, earnings, and liquidity status in both public and private life insurance sectors. However, Rifqah and Hafinaz (2019) argued that liquidity had a negative influence on the performance of the banks. Similarly, Auguenaou, Lahrech, and Bounekaya (2017) found that liquidity risk had a negative impact on the performance of Kenya's commercial banks. Kirimi, Kariuki and Ocharo (2022) discovered that earning quality and asset quality had significant impacts on net interest margin, while management efficiency had a notable impact on return on equity. However, asset quality, earning quality, capital adequacy, and liquidity had little to no impact on return on equity and return on assets. Auguenaou, Lahrech and Bounekaya (2017) established that liquidity have negative influence on efficiency. On the other hand, earnings have negative but insignificant impact on efficiency.

The regression coefficient results point out that the coefficient of management efficiency was both statistically significant as well as positive ($\beta = 0.022$, $p= 0.036<0.05$). This means, a unit increase in the management efficiency results in 0.022 units significant improvement in the profitability of deposit taking SACCOs in Kenya. Thus, management efficiency is a significant determinant of profitability. It is crucial to emphasize that the efficiency of management plays a pivotal role in an organization's capacity to optimize its available resources and attain its objectives. The results of the analysis are consistent with the findings of Valeed, Ansari and Wubshnet Fola (2014) who found that there is a significant correlation in the midst of sufficiency of capital, asset quality, managerial effectiveness, profitability, earnings, and liquidity status in both public and private life

insurance sectors. Similarly, Orichom and Omeke (2020) found that management efficiency had a significant difference in the position of private and public life insurance institutions. However, Muhadzdzib and Margaretha (2022) revealed a noteworthy negative impact of management efficiency on performance financially. This highlights the significance of effective management practices in driving positive financial outcomes for an organization. The study underscored the importance of enhancing management efficiency as a means to enhance performance financially and overall organizational success. Ikpefan (2013) established that adequacy of capital posted negative influence on performance whereas management efficiency displayed a negative influence on capital return. Muhadzdzib and Margaretha (2022) indicated that efficiency management significantly impacts performance financially.

The regression coefficient results point out that the coefficient of asset quality was both statistically significant as well as positive ($\beta = 0.060$, $p= 0.000<0.05$). This implies that a unit increase in the asset quality results in 0.060 units significant improvement in the profitability of deposit taking SACCOs in Kenya. Thus, asset quality is a significant determinant of profitability. The business endeavors to maximize opportunities and resources to reap optimum returns. Asset quality is an important determinant that refers to the quantity of available and possible credit risk associated with investment portfolios, loans, or other assets. The results of the analysis are consistent with the findings of Valeed, Ansari and Wubshnet Fola (2014) who found that there is a significant correlation in the midst of sufficiency of capital, asset quality, managerial effectiveness, profitability, earnings, and liquidity status in both public and private life insurance sectors. Bodla and Tondon (2017) found that asset quality has a significant influence on the insurance industry in India. Muhadzdzib and Margaretha (2022) showed that adequacy of capital, quality of assets, liquidity and quality of income had positive and significant influence on performance financially.

However, Muigai (2017) concluded that tangible assets and external equity did not assist in the recovery of funds during financial crises in non-financial companies. Kirimi, Kariuki and Ocharo (2022) revealed that asset quality, earning quality, capital adequacy, and liquidity had little to no impact on return on equity and return on assets.

The regression coefficient results point out that the coefficient of firm size was both statistically significant as well as positive ($\beta = 0.003$, $p= 0.024<0.05$). This implies that a unit increase in the firm size results in 0.003 units significant improvement in the profitability of deposit taking SACCOs in Kenya. Thus, firm size is a significant determinant of profitability of the deposit taking SACCOs in Kenya. Larger enterprises often reap the advantages of economies of scale, facile access to capital, and diversification of operations, thereby favorably impacting their financial outcomes. Nevertheless, they may also encounter obstacles such as bureaucratic complexities and reduced adaptability. Conversely, smaller firms exhibit greater agility and innovation potential, yet they may grapple with resource constraints and limited market visibility. Ultimately, the influence of firm size on performance financially fluctuates across sectors and is contingent on variables like management prowess and prevailing market conditions. Successful performance financially hinges on adept administration, astute strategic decision-making, and adaptability, irrespective of a firm's magnitude. The results of the analysis are consistent with the findings of Kirimi, Kariuki and Ocharo (2022) who revealed that monetary stability had a statistically significant influence on ROA, ROE, and NIM.

The regression coefficient results point out that the coefficient of lending rate was both statistically significant as well as positive ($\beta = 0.0008$, $p= 0.069<0.05$). This implies that a unit increase in the lending rate results in 0.0008 units insignificant improvement in the performance financially. Thus, lending rate is an insignificant determinant of profitability. Reduced borrowing costs confer

several benefits, such as enhanced access to funds for both enterprises and individuals, stimulating spending, and fostering investment and entrepreneurial endeavors (Cucinelli, 2015). Affordable credit prompts consumers to make substantial purchases, spurring demand for goods and services and contributing to economic growth. Nevertheless, lower interest rates are not without drawbacks, including the risk of inflationary pressures, diminished returns on savings and investments, and the potential for creating speculative bubbles in specific markets (Chen, Huang & Lin, 2022). Striking a delicate balance between promoting economic activity and managing potential risks is imperative to achieve sustainable fiscal results. Central banks and financial authorities meticulously calibrate lending rates as a means to shape economic conditions and uphold price stability, with the ultimate goal of cultivating a robust and harmonious economic landscape.

# CHAPTER FIVE

# SUMMARY, CONCLUSION AND RECOMMENDATIONS

## 5.1 Introduction

The section presents a comprehensive outline of the summary of the key findings of the study upon which conclusions are drawn. The study then presents the policy recommendations, the limitations of the study as well as suggested areas for further research.

## 5.2 Summary of Findings

The study presents the summary of findings in accordance to the aims of the study. The objectives of the study were to determine the effects of capital adequacy, liquidity, management efficiency, asset quality, firm size and lending rate on the profitability. The summary of the key findings of the study is outlined in in the subsequent sections.

### 5.2.1 Capital Adequacy

The outcomes of descriptive of capital adequacy indicate that the average value of capital adequacy was 0.29285 and SD was 0.05122 which implies that adequacy of capital varied during the study period. The minimum and the maximum values are 0.2004 and 0.3985. The regression coefficient results point out that the coefficient of capital adequacy was both statistically significant as well as positive ($\beta = 0.027$, $p= 0.000<0.05$). This implies that a unit increase in the capital adequacy results in 0.027 units significant improvement in the profitability. Thus, capital adequacy is a significant determinant of profitability. Adequacy of capital is essential in examining the impact of stability financially on profitability. Valeed, Ansari and Wubshnet Fola (2014) indicated that policies and standards in India play a pivotal role in ensuring performance financially and soundness. Moreover, the research found that there is a significant correlation in the midst of

sufficiency of capital, asset quality, managerial effectiveness, profitability, earnings, and liquidity status in both public and private life insurance sectors.

### 5.2.2 Liquidity

The outcomes of liquidity indicate that its average value was 1.61354 and the SD was 0.21485 meaning that liquidity of the deposit taking SACCOs in Kenya varied during the study period. The minimum and the maximum values are 1.235 and 1.993 respectively. The regression coefficient results point out that the coefficient of liquidity was both statistically significant as well as positive ($\beta = 0.033$, $p = 0.015<0.05$). This implies that a unit increase in the liquidity results in 0.003 units significant improvement in the profitability of deposit taking SACCOs in Kenya. Thus, liquidity is a significant determinant of profitability of the deposit taking SACCOs in Kenya. It is imperative to elucidate that liquidity is an epicenter factor that measures an ability of entity to convert its assets into cash or access funds when required. In simple terms, liquidity refers to having access to or obtaining cash at the time of need. Muhadzdzib and Margaretha (2022) showed that capital adequacy, asset quality, liquidity and quality of income had positive and significant influence on performance financially. However, efficiency management negatively, significantly impacts performance financially.

### 5.2.3 Management Efficiency

The descriptive results of management efficiency indicate that the mean value of management efficiency was 0.15575 and the SD was 0.02782 giving the implication that efficient management varied during the study period. The lowest and highest values are 0.1011 and 0.1897. The regression coefficient results point out that the coefficient of efficient management was both significant statistically as well as positive ($\beta = 0.022$, $p= 0.036<0.05$, meaning that a unit increase in the management efficiency results in 0.020 units improvement significantly in the profitability

of deposit taking SACCOs in Kenya. Thus, management efficiency is a significant determinant of profitability. It is crucial to emphasize that the efficiency of management enhances the capacity of organization to optimize its available resources and attain its objectives. Valeed, Ansari and Wubshnet Fola (2014) found that there is a significant correlation in the midst of sufficiency of capital, asset quality, managerial effectiveness, profitability, earnings, and liquidity status in private and public life insurance sectors.

### 5.2.4 Asset Quality

The descriptive outcomes of quality of assets points out that the mean value of quality of assets was 0.05784 and the SD was 0.193. This SD meant that quality of assets varied during the review period. The minimum and the maximum values are 0.02361 and 0.08985. The regression coefficient outcomes point out that the coefficient of quality of assets was both significant statistically as well as positive ($\beta = 0.060$, $p= 0.000<0.05$). Hence, a unit increase in the asset quality results in 0.063 units improvement significantly in the profitability of deposit taking SACCOs in Kenya. Thus, asset quality is a significant determinant of profitability. The business endeavors to maximize opportunities and resources to reap optimum returns. Quality of assets is an important determinant that refers to the quantity of available and possible credit risk associated with investment portfolios, loans, or other assets. Valeed, Ansari and Wubshnet Fola (2014) found that there is a significant correlation in the midst of sufficiency of capital, asset quality, managerial effectiveness, profitability, earnings, and liquidity status in both public and private life insurance sectors.

### 5.2.5 Firm Size

The descriptive results of firm size points out that the average value of firm size was 5.47703 and the SD was 0.15885. The SD means that firm size varied during the study period. The lowest and

the highest values are 5.04448 and 5.7599. The regression coefficient results point out that the coefficient of firm size was both statistically significant as well as positive (β = 0.003, p= 0.000<0.05). This implies that a unit increase in the firm size results in 0.003 units significant improvement in the profitability of deposit taking SACCOs in Kenya. Thus, firm size is a significant determinant of profitability. Larger enterprises often reap the advantages of economies of scale, facile access to capital, and diversification of operations, thereby favorably impacting their financial outcomes. Nevertheless, they may also encounter obstacles such as bureaucratic complexities and reduced adaptability. Conversely, smaller firms exhibit greater agility and innovation potential, yet they may grapple with resource constraints and limited market visibility. Ultimately, the influence of firm size on performance financially fluctuates across sectors and is contingent on variables like management prowess and prevailing market conditions. Successful performance financially hinges on adept administration, astute strategic decision-making, and adaptability, irrespective of a firm's magnitude. Kirimi, Kariuki and Ocharo (2022) revealed that monetary stability had a statistically significant influence on ROA, ROE, and NIM.

### 5.2.6 Lending Rate

The outcomes of rate of lending indicate that the average value of rate of lending was 0.85837 and the SD was 0.63362, meaning that rate of lending varied during the study period. The lowest and the highest values are 0.00339 and 1.99418. The regression coefficient results point out that the coefficient of rate of lending was both insignificant statistically as well as positive (β = 0.0008, p= 0.069<0.05). This means that a unit increase in the lending rate results in 0.001 units improvement insignificantly in the profitability of deposit taking SACCOs in Kenya. Hence, rate of lending is a significant determinant of performance financially. Reduced borrowing costs confer several benefits, such as enhanced access to funds for both enterprises and individuals, stimulating

spending, and fostering investment and entrepreneurial endeavors (Cucinelli, 2015). Affordable credit prompts consumers to make substantial purchases, spurring demand for goods and services and contributing to economic growth. Nevertheless, lower interest rates are not without drawbacks, including the risk of inflationary pressures, diminished returns on savings and investments, and the potential for creating speculative bubbles in specific markets (Chen, Huang & Lin, 2022).

### 5.3 conclusion

In summary, capital adequacy has a positive and significant relationship with the profitability of the Kenyan deposit taking SACCOs. Thus, an improvement in the capital adequacy would yield a significant improvement in the performance financially. Adequacy of capital is essential in examining the impact of stability financially on profitability. Policies and standards in play a pivotal role in ensuring performance financially and soundness.

The study concludes that the liquidity has a significantly positively associated with the profitability of the Kenyan deposit taking SACCOs. Thus, an improvement in the liquidity would yield a significant improvement in the performance financially. Liquidity is an epicenter factor that measures an ability of entity to convert its assets into cash or access funds when required. In simple terms, liquidity refers to having access to or obtaining cash at the time of need.

The study concludes that the management efficiency was positively, significantly related the profitability of the Kenyan deposit taking SACCOs. Thus, an improvement in the management efficiency would yield a significant improvement in performance financially. The efficiency of management plays a pivotal role in an entity’s capacity to optimize its available resources and attain its objectives.

The study concludes that the asset quality has a positive and significant association with the profitability of the Kenyan deposit taking SACCOs. Thus, an improvement in the asset quality would yield a significant improvement in performance financially. The business endeavors to maximize opportunities and resources to reap optimum returns. Asset quality is an important determinant that refers to the quantity of available and possible credit risk associated with investment portfolios, loans, or other assets.

The study concludes that the firm size has a significant positive association with the profitability of the Kenyan deposit taking SACCOs. Thus, an improvement in the firm size would yield a significant improvement in performance financially. Larger enterprises often reap the advantages of economies of scale, facile access to capital, and diversification of operations, thereby favorably influencing their financial outcomes. Nevertheless, they may also encounter obstacles such as bureaucratic complexities and reduced adaptability. Conversely, smaller firms exhibit greater agility and innovation potential, yet they may grapple with resource constraints and limited market visibility.

The study concludes that the lending rate has a significant positive relationship with the profitability of the Kenyan deposit taking SACCOs. Thus, an improvement in the lending rate would yield a significant improvement in performance financially. . Reduced borrowing costs confer several benefits, such as enhanced access to funds for both enterprises and individuals, stimulating spending, and fostering investment and entrepreneurial endeavors. Affordable credit prompts consumers to make substantial purchases, spurring demand for goods and services and contributing to economic growth. Nevertheless, lower interest rates are not without drawbacks, including the risk of inflationary pressures, diminished returns on savings and investments, and the potential for creating speculative bubbles in specific markets.

## 5.4 Recommendations

The study recommends that the Kenyan deposit taking SACCOs ought to strive to be capital adequate. They should make more investments in the capital base as this is essential for ensuring their profitability. Capital base is significant in enhancing the operation activities thus enhancing the profitability of the SACCOs.

The study further recommends that Kenyan deposit taking SACCOs should ensure that majority of its assets should be liquid. It is evident that the societies' liquidity plays a crucial role in enhancing its profitability. The liquid assets are crucial because of the nature of the operations and business activities of the SACCOs.

The study further makes the recommendation that Kenyan deposit taking SACCOs ought to invest more in ensuring that its management is efficient. The management efficiency is a catalyst for growth and profitability of the SACCOs. Thus, having an efficient management is beneficial.

The study further recommends that the deposit taking SACCOs in Kenya should ensure that its non-performing loans portfolio is minimal. Thus, the societies should have a functional loans department responsible for issuance and recovery of loans. This would enhance the sustainability as well as the profitability of the Kenyan deposit taking SACCOs.

The study further recommends that the deposit taking SACCOs ought to make more investments in enhancing its size as well as the scale of its operations. This leads to increased incomes as well as increased asset base. It is evident that improved size of the society has a positive effect on the profitability of the Kenyan deposit taking SACCOs.

Finally, the study recommends that the Kenyan deposit taking SACCOs should have their lending rates competitive. Having a competitive lending rate makes the SACCOs efficient, as more clients

would be able to borrow and hence making the society profitable. A competitive lending rate further attracts more customers and thus more investments, which ultimately has a positive effect on the profitability.

### 5.5 Limitations

The study was limited to the deposit taking SACCOs in Kenya. Further, the study was limited to a period of 2018 to 2022. In addition, the study considered the variables including capital adequacy, liquidity, management efficiency, asset quality, firm size and lending rate that were the determinants of profitability of the SACCOs. The study was also limited to the descriptive research design that was utilized in the study.

### 5.6 Suggestions for Further Studies

The study recommends that further studies be conducted on the infrastructural capabilities and the performance financially of deposit taking SACCOs in Kenya.

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# APPENDICES

## Appendix I: List of Deposit Taking SACCOs in Kenya

1. Afya
2. Airport
3. Bandari
5. Baraka
6. Biashara
7. Boresha
8. Centenary
9. Chai
10. Cosmopolitan
11. Daima
12. Dumisha
13. Egerton
14. Fundilima
15. Githunguri dairy
16. Gusii
17. Harambee
18. Imarisha
19. Imenti
20. Jamii
21. Jumuika

22. Kenpipe

23. Kenversity

24. Kenya bankers

25. Kenya highlands

26. Kenya police

27. Kimbilio

28. Kite

29. Kmfri

30. Konoin

31. K-unity

32. Lengo

33. Mafanikio

34. Magadi

35. Maisha bora

36. Mentor

37. Mombasa ports

38. Mudete

39. Mwalimu national

40. Mwito

41. Nafaka

42. Nandi farmers

43. Nation

44. Ndege chai

45. Ndosha

46. Ngarisha

47. Nyamira

48. Patnas

49. Prime time

50. Safaricom

**SOURCE: SASRA 2022**

**Appendix II: Data Collection Instrument**

| ROA | Capital Adequacy | Liquidity | Management Efficiency | Asset Quality | Firm Size | Lending Rate |
|---|---|---|---|---|---|---|
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## Appendix III: Data Collection Instrument

| SACCO | Year | ROA | Capital Adequacy | Liquidity | Management Efficiency | Asset Quality | Firm Size | Lending Rate |
|---|---|---|---|---|---|---|---|---|
| Afya | 2018 | 0.02322 | 0.2274 | 1.273 | 0.1437 | 0.02587 | 5.341185 | 0.82324 |
| Afya | 2019 | 0.02502 | 0.2352 | 1.445 | 0.1621 | 0.05314 | 5.474152 | 0.86331 |
| Afya | 2020 | 0.02189 | 0.214 | 1.681 | 0.1155 | 0.06046 | 5.312977 | 0.16271 |
| Afya | 2021 | 0.02235 | 0.2262 | 1.418 | 0.1103 | 0.05001 | 5.390847 | 0.78364 |
| Afya | 2022 | 0.02316 | 0.2209 | 1.328 | 0.1496 | 0.05243 | 5.350101 | 0.13468 |
| Airport | 2018 | 0.02191 | 0.2141 | 1.675 | 0.1666 | 0.04171 | 5.251207 | 0.20956 |
| Airport | 2019 | 0.02353 | 0.2408 | 1.288 | 0.144 | 0.06136 | 5.283484 | 0.96363 |
| Airport | 2020 | 0.0204 | 0.2069 | 1.712 | 0.1555 | 0.02964 | 5.251784 | 0.81377 |
| Airport | 2021 | 0.02771 | 0.2516 | 1.498 | 0.147 | 0.0305 | 5.129658 | 0.87602 |
| Airport | 2022 | 0.02312 | 0.3061 | 1.527 | 0.1027 | 0.06205 | 5.167574 | 0.02516 |
| Bandari | 2018 | 0.02474 | 0.2605 | 1.438 | 0.1624 | 0.05736 | 5.105854 | 0.8709 |
| Bandari | 2019 | 0.02293 | 0.2516 | 1.298 | 0.107 | 0.05643 | 5.164415 | 0.82162 |
| Bandari | 2020 | 0.02733 | 0.2476 | 1.297 | 0.1414 | 0.0684 | 5.132743 | 0.17228 |
| Bandari | 2021 | 0.0274 | 0.3035 | 1.601 | 0.1403 | 0.06148 | 5.139596 | 0.02523 |
| Bandari | 2022 | 0.02196 | 0.278 | 1.583 | 0.1544 | 0.05417 | 5.173084 | 0.92862 |
| Baraka | 2018 | 0.03077 | 0.3382 | 1.915 | 0.1857 | 0.07276 | 5.542431 | 1.78313 |
| Baraka | 2019 | 0.03264 | 0.3024 | 1.989 | 0.1821 | 0.07467 | 5.522409 | 1.89239 |
| Baraka | 2020 | 0.03198 | 0.3407 | 1.993 | 0.1859 | 0.0757 | 5.551812 | 1.94343 |
| Baraka | 2021 | 0.03927 | 0.3958 | 1.971 | 0.1876 | 0.07944 | 5.587027 | 1.86506 |
| Baraka | 2022 | 0.03974 | 0.3826 | 1.971 | 0.1867 | 0.07595 | 5.524215 | 1.95382 |
| Biashara | 2018 | 0.03294 | 0.3767 | 1.95 | 0.1884 | 0.0777 | 5.566495 | 1.06861 |
| Biashara | 2019 | 0.03145 | 0.3035 | 1.913 | 0.1841 | 0.07578 | 5.593468 | 1.8051 |
| Biashara | 2020 | 0.02987 | 0.2339 | 1.323 | 0.1616 | 0.03039 | 5.378131 | 0.86433 |
| Biashara | 2021 | 0.02898 | 0.2703 | 1.608 | 0.1556 | 0.04629 | 5.432763 | 0.79237 |
| Biashara | 2022 | 0.02544 | 0.227 | 1.355 | 0.1111 | 0.03121 | 5.428331 | 0.90182 |
| Boresha | 2018 | 0.02827 | 0.2694 | 1.282 | 0.168 | 0.05299 | 5.491245 | 0.9742 |
| Boresha | 2019 | 0.02998 | 0.2947 | 1.56 | 0.1272 | 0.04466 | 5.587291 | 0.16375 |
| Boresha | 2020 | 0.02007 | 0.3085 | 1.449 | 0.1382 | 0.06601 | 5.298838 | 1.78131 |
| Boresha | 2021 | 0.02855 | 0.2771 | 1.264 | 0.1132 | 0.05997 | 5.491512 | 0.20111 |
| Boresha | 2022 | 0.02967 | 0.2632 | 1.55 | 0.1571 | 0.03172 | 5.568494 | 0.10684 |
| Centenary | 2018 | 0.03073 | 0.3679 | 1.708 | 0.1836 | 0.07814 | 5.510057 | 1.83198 |
| Centenary | 2019 | 0.03179 | 0.3429 | 1.862 | 0.182 | 0.07664 | 5.585608 | 1.11961 |
| Centenary | 2020 | 0.03568 | 0.3004 | 1.818 | 0.1883 | 0.07341 | 5.534785 | 1.87733 |
| Centenary | 2021 | 0.0331 | 0.3433 | 1.871 | 0.1803 | 0.07123 | 5.501395 | 1.2069 |
| Centenary | 2022 | 0.03045 | 0.3253 | 1.869 | 0.1877 | 0.07312 | 5.540674 | 1.84119 |
| Chai | 2018 | 0.02691 | 0.2266 | 1.568 | 0.1352 | 0.02361 | 5.491561 | 0.99262 |

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|---|---|---|---|---|---|---|---|---|
| Chai | 2019 | 0.02041 | 0.2627 | 1.638 | 0.124 | 0.02381 | 5.551989 | 0.1634 |
| Chai | 2020 | 0.0283 | 0.2746 | 1.342 | 0.1682 | 0.06778 | 5.482521 | 0.10279 |
| Chai | 2021 | 0.02666 | 0.2948 | 1.303 | 0.1362 | 0.02452 | 5.518945 | 0.03544 |
| Chai | 2022 | 0.02642 | 0.2602 | 1.574 | 0.1125 | 0.03528 | 5.540461 | 0.81093 |
| Cosmopolitan | 2018 | 0.02945 | 0.238 | 1.619 | 0.1515 | 0.05427 | 5.68753 | 0.91142 |
| Cosmopolitan | 2019 | 0.0297 | 0.2398 | 1.637 | 0.1521 | 0.05543 | 5.636887 | 0.116 |
| Cosmopolitan | 2020 | 0.02032 | 0.287 | 1.358 | 0.1111 | 0.05179 | 5.666256 | 0.87429 |
| Cosmopolitan | 2021 | 0.02161 | 0.2977 | 1.684 | 0.1325 | 0.06524 | 5.645945 | 0.07067 |
| Cosmopolitan | 2022 | 0.02627 | 0.2004 | 1.286 | 0.1574 | 0.02851 | 5.65821 | 0.19985 |
| Daima | 2018 | 0.02927 | 0.2462 | 1.549 | 0.1298 | 0.0289 | 5.351758 | 0.16298 |
| Daima | 2019 | 0.02511 | 0.2638 | 1.758 | 0.1171 | 0.04055 | 5.470713 | 0.97445 |
| Daima | 2020 | 0.02013 | 0.248 | 1.562 | 0.1383 | 0.03824 | 5.363315 | 0.08848 |
| Daima | 2021 | 0.02117 | 0.2323 | 1.577 | 0.1595 | 0.02907 | 5.425608 | 0.82755 |
| Daima | 2022 | 0.02705 | 0.2405 | 1.375 | 0.1022 | 0.03521 | 5.317215 | 0.04629 |
| Dumisha | 2018 | 0.02598 | 0.2807 | 1.325 | 0.1071 | 0.03667 | 5.581553 | 0.89676 |
| Dumisha | 2019 | 0.027 | 0.2256 | 1.294 | 0.1539 | 0.04811 | 5.55504 | 0.2224 |
| Dumisha | 2020 | 0.02708 | 0.2915 | 1.44 | 0.1629 | 0.04513 | 5.597351 | 0.95743 |
| Dumisha | 2021 | 0.02291 | 0.2321 | 1.389 | 0.1648 | 0.06778 | 5.515535 | 0.18188 |
| Dumisha | 2022 | 0.02235 | 0.2464 | 1.266 | 0.1182 | 0.03673 | 5.530899 | 0.16424 |
| Egerton | 2018 | 0.02478 | 0.2536 | 1.747 | 0.1503 | 0.02751 | 5.399192 | 0.80856 |
| Egerton | 2019 | 0.02145 | 0.2963 | 1.371 | 0.1203 | 0.03684 | 5.471501 | 0.86724 |
| Egerton | 2020 | 0.02798 | 0.2862 | 1.559 | 0.1516 | 0.0587 | 5.455887 | 0.03348 |
| Egerton | 2021 | 0.02615 | 0.2792 | 1.683 | 0.1433 | 0.05903 | 5.404516 | 0.10014 |
| Egerton | 2022 | 0.0244 | 0.2919 | 1.254 | 0.1488 | 0.05091 | 5.356884 | 0.8016 |
| Fundilima | 2018 | 0.03013 | 0.3036 | 1.501 | 0.1879 | 0.07509 | 5.632079 | 1.15213 |
| Fundilima | 2019 | 0.03221 | 0.3476 | 1.842 | 0.189 | 0.07292 | 5.641918 | 1.01659 |
| Fundilima | 2020 | 0.03118 | 0.3405 | 1.858 | 0.1858 | 0.07693 | 5.64284 | 1.08439 |
| Fundilima | 2021 | 0.03512 | 0.3596 | 1.899 | 0.1892 | 0.07695 | 5.660065 | 1.03995 |
| Fundilima | 2022 | 0.03371 | 0.3034 | 1.854 | 0.1876 | 0.07579 | 5.628104 | 1.2271 |
| Githungur i Dairy | 2018 | 0.03303 | 0.3775 | 1.805 | 0.1897 | 0.07589 | 5.680162 | 1.15694 |
| Githungur i Dairy | 2019 | 0.03819 | 0.3701 | 1.837 | 0.186 | 0.07358 | 5.682393 | 1.80831 |
| Githungur i Dairy | 2020 | 0.03082 | 0.3808 | 1.882 | 0.1845 | 0.07602 | 5.607824 | 1.91269 |
| Githungur i Dairy | 2021 | 0.03237 | 0.376 | 1.884 | 0.1872 | 0.07646 | 5.674964 | 1.95968 |
| Githungur i Dairy | 2022 | 0.0321 | 0.3744 | 1.857 | 0.1872 | 0.07433 | 5.610805 | 1.19826 |

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|---|---|---|---|---|---|---|---|---|
| Gusii | 2018 | 0.02655 | 0.2442 | 1.507 | 0.1029 | 0.0498 | 5.698455 | 0.86325 |
| Gusii | 2019 | 0.02611 | 0.237 | 1.564 | 0.1106 | 0.03605 | 5.607716 | 0.94496 |
| Gusii | 2020 | 0.02197 | 0.2023 | 1.524 | 0.1069 | 0.02505 | 5.674643 | 0.90404 |
| Gusii | 2021 | 0.02747 | 0.2382 | 1.702 | 0.138 | 0.04058 | 5.642937 | 0.96397 |
| Gusii | 2022 | 0.02291 | 0.2985 | 1.507 | 0.1093 | 0.0413 | 5.67623 | 0.85804 |
| Harambee | 2018 | 0.03014 | 0.3531 | 1.872 | 0.1862 | 0.06013 | 5.566199 | 1.80307 |
| Harambee | 2019 | 0.03031 | 0.3617 | 1.839 | 0.1844 | 0.08613 | 5.526149 | 1.22911 |
| Harambee | 2020 | 0.03392 | 0.3623 | 1.847 | 0.1879 | 0.08858 | 5.594664 | 1.21278 |
| Harambee | 2021 | 0.03035 | 0.3929 | 1.817 | 0.187 | 0.08553 | 5.572404 | 1.79967 |
| Harambee | 2022 | 0.03718 | 0.3979 | 1.845 | 0.1818 | 0.08271 | 5.567056 | 1.91071 |
| Imarisha | 2018 | 0.03876 | 0.3424 | 1.847 | 0.1891 | 0.08903 | 5.56488 | 1.21847 |
| Imarisha | 2019 | 0.03299 | 0.3388 | 1.83 | 0.182 | 0.08865 | 5.557553 | 1.85537 |
| Imarisha | 2020 | 0.03142 | 0.3962 | 1.85 | 0.1835 | 0.07715 | 5.592502 | 1.82185 |
| Imarisha | 2021 | 0.02167 | 0.2399 | 1.28 | 0.1599 | 0.04886 | 5.587263 | 0.05527 |
| Imarisha | 2022 | 0.03207 | 0.3824 | 1.809 | 0.1892 | 0.07425 | 5.596411 | 1.87511 |
| Imenti | 2018 | 0.02647 | 0.2625 | 1.416 | 0.1209 | 0.04826 | 5.617881 | 0.80981 |
| Imenti | 2019 | 0.02973 | 0.2699 | 1.434 | 0.1437 | 0.04275 | 5.603774 | 0.97881 |
| Imenti | 2020 | 0.02282 | 0.2866 | 1.381 | 0.1515 | 0.06155 | 5.63332 | 0.01378 |
| Imenti | 2021 | 0.02053 | 0.2614 | 1.369 | 0.1768 | 0.04082 | 5.65577 | 0.90917 |
| Imenti | 2022 | 0.02151 | 0.2484 | 1.342 | 0.1497 | 0.05674 | 5.630884 | 0.99051 |
| Jamii | 2018 | 0.02898 | 0.2305 | 1.778 | 0.1109 | 0.06625 | 5.349879 | 0.12595 |
| Jamii | 2019 | 0.02377 | 0.2802 | 1.339 | 0.1027 | 0.04285 | 5.437595 | 0.79746 |
| Jamii | 2020 | 0.02753 | 0.2737 | 1.351 | 0.1146 | 0.03029 | 5.322302 | 0.18536 |
| Jamii | 2021 | 0.02301 | 0.2659 | 1.794 | 0.1487 | 0.03263 | 5.400469 | 0.81742 |
| Jamii | 2022 | 0.02161 | 0.2532 | 1.273 | 0.1409 | 0.03602 | 5.450949 | 0.15024 |
| Jumuika | 2018 | 0.02063 | 0.2769 | 1.642 | 0.142 | 0.07105 | 5.139256 | 0.97035 |
| Jumuika | 2019 | 0.02164 | 0.2577 | 1.696 | 0.1583 | 0.06125 | 5.290148 | 0.94209 |
| Jumuika | 2020 | 0.02957 | 0.2328 | 1.334 | 0.1277 | 0.04009 | 5.292942 | 0.88422 |
| Jumuika | 2021 | 0.02309 | 0.2395 | 1.752 | 0.1297 | 0.05382 | 5.267125 | 0.18264 |
| Jumuika | 2022 | 0.02397 | 0.2257 | 1.41 | 0.1307 | 0.05951 | 5.277999 | 0.98108 |
| Kenpipe | 2018 | 0.03838 | 0.3841 | 1.81 | 0.1838 | 0.07149 | 5.571109 | 1.92272 |
| Kenpipe | 2019 | 0.03325 | 0.3763 | 1.823 | 0.1824 | 0.07238 | 5.509515 | 1.79554 |
| Kenpipe | 2020 | 0.03253 | 0.3437 | 1.859 | 0.1839 | 0.08814 | 5.599215 | 1.91892 |
| Kenpipe | 2021 | 0.03043 | 0.3628 | 1.834 | 0.1897 | 0.07473 | 5.597922 | 1.01078 |
| Kenpipe | 2022 | 0.03711 | 0.3265 | 1.847 | 0.1845 | 0.07319 | 5.530569 | 1.8757 |
| Kenversity | 2018 | 0.02701 | 0.2377 | 1.459 | 0.1372 | 0.03579 | 5.668011 | 0.20645 |
| Kenversity | 2019 | 0.02136 | 0.2557 | 1.425 | 0.1708 | 0.03487 | 5.680268 | 0.9862 |
| Kenversity | 2020 | 0.02122 | 0.2012 | 1.741 | 0.1551 | 0.05941 | 5.65365 | 0.05108 |
| Kenversity | 2021 | 0.02219 | 0.2375 | 1.483 | 0.1761 | 0.03588 | 5.616431 | 0.09456 |
| Kenversity | 2022 | 0.02836 | 0.2828 | 1.667 | 0.1512 | 0.0332 | 5.663288 | 0.99171 |
| Kenya Bankers | 2018 | 0.022 | 0.2989 | 1.543 | 0.1487 | 0.03772 | 5.119111 | 0.91313 |

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|---|---|---|---|---|---|---|---|---|
| Kenya Bankers | 2019 | 0.02994 | 0.2529 | 1.667 | 0.1181 | 0.06463 | 5.250147 | 0.13915 |
| Kenya Bankers | 2020 | 0.02957 | 0.2367 | 1.428 | 0.1141 | 0.0529 | 5.290851 | 0.0688 |
| Kenya Bankers | 2021 | 0.0214 | 0.287 | 1.426 | 0.1582 | 0.03407 | 5.297664 | 0.22784 |
| Kenya Bankers | 2022 | 0.02946 | 0.2845 | 1.641 | 0.1044 | 0.04764 | 5.148365 | 0.8233 |
| Kenya Highlands | 2018 | 0.03133 | 0.3792 | 1.86 | 0.1827 | 0.07842 | 5.543593 | 1.99058 |
| Kenya Highlands | 2019 | 0.03497 | 0.3646 | 1.813 | 0.1857 | 0.08083 | 5.523023 | 1.99029 |
| Kenya Highlands | 2020 | 0.03535 | 0.3985 | 1.827 | 0.1714 | 0.07424 | 5.537194 | 1.9023 |
| Kenya Highlands | 2021 | 0.03773 | 0.3319 | 1.861 | 0.184 | 0.08769 | 5.582721 | 1.77664 |
| Kenya Highlands | 2022 | 0.03274 | 0.3845 | 1.867 | 0.183 | 0.0618 | 5.539225 | 1.95222 |
| Kenya Police | 2018 | 0.02173 | 0.2676 | 1.375 | 0.1041 | 0.04736 | 5.218683 | 0.96884 |
| Kenya Police | 2019 | 0.02209 | 0.296 | 1.235 | 0.104 | 0.04106 | 5.117185 | 0.79013 |
| Kenya Police | 2020 | 0.02867 | 0.2561 | 1.267 | 0.1672 | 0.04713 | 5.044481 | 0.04912 |
| Kenya Police | 2021 | 0.02995 | 0.2552 | 1.499 | 0.1501 | 0.04294 | 5.129387 | 0.21712 |
| Kenya Police | 2022 | 0.0248 | 0.2312 | 1.681 | 0.1634 | 0.04602 | 5.181715 | 0.21839 |
| Kimbilio | 2018 | 0.02537 | 0.2449 | 1.559 | 0.1322 | 0.05458 | 5.676399 | 0.11025 |
| Kimbilio | 2019 | 0.0306 | 0.2909 | 1.422 | 0.1209 | 0.07043 | 5.622737 | 1.79067 |
| Kimbilio | 2020 | 0.02522 | 0.2638 | 1.653 | 0.1766 | 0.06777 | 5.611043 | 0.90212 |
| Kimbilio | 2021 | 0.02779 | 0.229 | 1.613 | 0.1498 | 0.04167 | 5.696075 | 0.1482 |
| Kimbilio | 2022 | 0.0226 | 0.3062 | 1.749 | 0.1454 | 0.05082 | 5.634195 | 0.97786 |
| Kite | 2018 | 0.02967 | 0.2321 | 1.513 | 0.1037 | 0.0683 | 5.511371 | 0.02285 |
| Kite | 2019 | 0.02375 | 0.2823 | 1.628 | 0.1561 | 0.05664 | 5.505463 | 0.85646 |
| Kite | 2020 | 0.02664 | 0.301 | 1.551 | 0.1618 | 0.06656 | 5.513891 | 0.10457 |
| Kite | 2021 | 0.02139 | 0.2578 | 1.442 | 0.134 | 0.05274 | 5.565009 | 0.09161 |
| Kite | 2022 | 0.0219 | 0.3074 | 1.79 | 0.1371 | 0.03728 | 5.543437 | 0.87398 |
| KMFRI | 2018 | 0.03688 | 0.3572 | 1.838 | 0.1826 | 0.08322 | 5.675822 | 1.13409 |
| KMFRI | 2019 | 0.03849 | 0.3622 | 1.846 | 0.1824 | 0.08403 | 5.61337 | 1.794 |
| KMFRI | 2020 | 0.0323 | 0.3673 | 1.715 | 0.1842 | 0.08872 | 5.606913 | 1.95463 |
| KMFRI | 2021 | 0.03024 | 0.3368 | 1.877 | 0.1864 | 0.08298 | 5.667052 | 1.19056 |
| KMFRI | 2022 | 0.03592 | 0.3265 | 1.868 | 0.1884 | 0.0862 | 5.676436 | 1.10781 |
| Konoin | 2018 | 0.03198 | 0.3081 | 1.873 | 0.1896 | 0.08936 | 5.563389 | 1.95177 |
| Konoin | 2019 | 0.03288 | 0.3617 | 1.782 | 0.1892 | 0.08315 | 5.584696 | 1.77918 |

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|---|---|---|---|---|---|---|---|---|
| Konoin | 2020 | 0.03009 | 0.3342 | 1.884 | 0.1849 | 0.08985 | 5.586461 | 1.91955 |
| Konoin | 2021 | 0.03257 | 0.3416 | 1.864 | 0.1819 | 0.08684 | 5.505372 | 1.17949 |
| Konoin | 2022 | 0.03668 | 0.356 | 1.825 | 0.1897 | 0.08611 | 5.548812 | 1.09587 |
| K-Unity | 2018 | 0.02447 | 0.2748 | 1.286 | 0.1547 | 0.05085 | 5.426815 | 0.05869 |
| K-Unity | 2019 | 0.0231 | 0.2763 | 1.655 | 0.1593 | 0.02366 | 5.344924 | 0.78164 |
| K-Unity | 2020 | 0.02176 | 0.242 | 1.364 | 0.1551 | 0.03729 | 5.475725 | 0.83026 |
| K-Unity | 2021 | 0.02164 | 0.3017 | 1.349 | 0.1828 | 0.05167 | 5.355739 | 0.9878 |
| K-Unity | 2022 | 0.02416 | 0.2916 | 1.701 | 0.1373 | 0.05279 | 5.385824 | 0.99981 |
| Lengo | 2018 | 0.0298 | 0.29 | 1.53 | 0.1608 | 0.05626 | 5.524743 | 0.18985 |
| Lengo | 2019 | 0.0279 | 0.2557 | 1.462 | 0.1393 | 0.04388 | 5.508364 | 0.06796 |
| Lengo | 2020 | 0.02279 | 0.2928 | 1.327 | 0.1604 | 0.03476 | 5.600259 | 0.02552 |
| Lengo | 2021 | 0.0297 | 0.2418 | 1.381 | 0.1375 | 0.07 | 5.600222 | 0.81387 |
| Lengo | 2022 | 0.02119 | 0.2311 | 1.685 | 0.1209 | 0.03996 | 5.538782 | 0.91349 |
| Mafanikio | 2018 | 0.02291 | 0.2333 | 1.46 | 0.1545 | 0.03391 | 5.626587 | 0.07641 |
| Mafanikio | 2019 | 0.02333 | 0.2921 | 1.729 | 0.1488 | 0.03907 | 5.630249 | 0.11648 |
| Mafanikio | 2020 | 0.02951 | 0.3095 | 1.392 | 0.1638 | 0.02621 | 5.622508 | 0.82732 |
| Mafanikio | 2021 | 0.02346 | 0.2761 | 1.456 | 0.1227 | 0.02456 | 5.697923 | 0.94254 |
| Mafanikio | 2022 | 0.02826 | 0.307 | 1.265 | 0.1697 | 0.03665 | 5.658299 | 0.83305 |
| Magadi | 2018 | 0.03807 | 0.394 | 1.898 | 0.1857 | 0.0734 | 5.501275 | 1.1625 |
| Magadi | 2019 | 0.03043 | 0.3098 | 1.828 | 0.1868 | 0.04731 | 5.575221 | 1.9106 |
| Magadi | 2020 | 0.0323 | 0.3037 | 1.869 | 0.1869 | 0.07373 | 5.546386 | 1.07538 |
| Magadi | 2021 | 0.03099 | 0.3842 | 1.834 | 0.1803 | 0.0834 | 5.574448 | 1.20764 |
| Magadi | 2022 | 0.03248 | 0.3534 | 1.805 | 0.1862 | 0.08296 | 5.57053 | 1.07335 |
| Maisha Bora | 2018 | 0.02879 | 0.2372 | 1.331 | 0.1745 | 0.05137 | 5.499878 | 0.94744 |
| Maisha Bora | 2019 | 0.02594 | 0.2301 | 1.389 | 0.1109 | 0.06695 | 5.557271 | 0.02334 |
| Maisha Bora | 2020 | 0.02895 | 0.2675 | 1.796 | 0.1268 | 0.0665 | 5.532149 | 0.1119 |
| Maisha Bora | 2021 | 0.02063 | 0.2258 | 1.518 | 0.1306 | 0.061 | 5.496049 | 0.99269 |
| Maisha Bora | 2022 | 0.02515 | 0.2918 | 1.386 | 0.1669 | 0.06651 | 5.585372 | 0.14552 |
| Mentor | 2018 | 0.02148 | 0.2487 | 1.639 | 0.1037 | 0.02891 | 5.397319 | 0.91094 |
| Mentor | 2019 | 0.02585 | 0.256 | 1.24 | 0.1086 | 0.0476 | 5.45662 | 0.21908 |
| Mentor | 2020 | 0.02338 | 0.3051 | 1.397 | 0.1364 | 0.0415 | 5.45068 | 0.84236 |
| Mentor | 2021 | 0.02587 | 0.3002 | 1.66 | 0.1755 | 0.04679 | 5.423136 | 0.0945 |
| Mentor | 2022 | 0.02183 | 0.2506 | 1.64 | 0.1657 | 0.05152 | 5.420469 | 0.07332 |
| Mombasa Ports | 2018 | 0.022 | 0.2849 | 1.723 | 0.163 | 0.04481 | 5.172442 | 0.2096 |
| Mombasa Ports | 2019 | 0.0292 | 0.299 | 1.369 | 0.176 | 0.04955 | 5.068104 | 0.94971 |

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|---|---|---|---|---|---|---|---|---|
| Mombasa Ports | 2020 | 0.02343 | 0.24 | 1.37 | 0.1652 | 0.05673 | 5.294316 | 0.22858 |
| Mombasa Ports | 2021 | 0.02444 | 0.292 | 1.621 | 0.1542 | 0.06236 | 5.210021 | 0.14713 |
| Mombasa Ports | 2022 | 0.02476 | 0.2855 | 1.343 | 0.1431 | 0.05678 | 5.252795 | 0.98417 |
| Mudete | 2018 | 0.02117 | 0.2427 | 1.759 | 0.1324 | 0.05303 | 5.292192 | 0.21233 |
| Mudete | 2019 | 0.02309 | 0.2503 | 1.304 | 0.1352 | 0.05694 | 5.265702 | 0.00578 |
| Mudete | 2020 | 0.028 | 0.3049 | 1.719 | 0.1505 | 0.02641 | 5.183355 | 0.9489 |
| Mudete | 2021 | 0.02516 | 0.2756 | 1.731 | 0.1397 | 0.0238 | 5.230377 | 0.05232 |
| Mudete | 2022 | 0.02127 | 0.2333 | 1.742 | 0.17 | 0.04332 | 5.279163 | 0.18725 |
| Mwalimu National | 2018 | 0.02154 | 0.2387 | 1.378 | 0.1248 | 0.06204 | 5.308671 | 0.05824 |
| Mwalimu National | 2019 | 0.02758 | 0.274 | 1.657 | 0.1338 | 0.0529 | 5.377091 | 0.99963 |
| Mwalimu National | 2020 | 0.02417 | 0.2945 | 1.485 | 0.1777 | 0.06487 | 5.312099 | 0.78776 |
| Mwalimu National | 2021 | 0.02185 | 0.2575 | 1.749 | 0.1783 | 0.03175 | 5.459302 | 0.80334 |
| Mwalimu National | 2022 | 0.02321 | 0.2631 | 1.251 | 0.1034 | 0.02797 | 5.467602 | 0.1273 |
| Mwito | 2018 | 0.03697 | 0.3395 | 1.836 | 0.1856 | 0.08429 | 5.578384 | 1.11336 |
| Mwito | 2019 | 0.03261 | 0.3268 | 1.794 | 0.1883 | 0.08531 | 5.524484 | 1.87901 |
| Mwito | 2020 | 0.03838 | 0.378 | 1.858 | 0.1861 | 0.07039 | 5.596423 | 1.9119 |
| Mwito | 2021 | 0.03226 | 0.3375 | 1.851 | 0.1843 | 0.07761 | 5.561046 | 0.82831 |
| Mwito | 2022 | 0.035 | 0.3515 | 1.885 | 0.189 | 0.07151 | 5.541422 | 0.10353 |
| Nafaka | 2018 | 0.02609 | 0.2989 | 1.33 | 0.1154 | 0.06574 | 5.449451 | 0.18417 |
| Nafaka | 2019 | 0.02189 | 0.2877 | 1.465 | 0.1011 | 0.06964 | 5.445023 | 0.98306 |
| Nafaka | 2020 | 0.02038 | 0.2773 | 1.62 | 0.1013 | 0.06384 | 5.302822 | 0.05022 |
| Nafaka | 2021 | 0.02869 | 0.2701 | 1.372 | 0.1208 | 0.05034 | 5.356555 | 0.23103 |
| Nafaka | 2022 | 0.02282 | 0.2721 | 1.255 | 0.1581 | 0.04341 | 5.423672 | 0.13728 |
| Nandi Farmers | 2018 | 0.02826 | 0.2976 | 1.637 | 0.113 | 0.02991 | 5.55988 | 0.98766 |
| Nandi Farmers | 2019 | 0.02659 | 0.2346 | 1.573 | 0.1427 | 0.03921 | 5.513527 | 0.21181 |
| Nandi Farmers | 2020 | 0.02194 | 0.2867 | 1.426 | 0.1587 | 0.05651 | 5.550582 | 0.1563 |
| Nandi Farmers | 2021 | 0.02075 | 0.2866 | 1.341 | 0.1021 | 0.06591 | 5.592152 | 0.07985 |
| Nandi Farmers | 2022 | 0.0244 | 0.2621 | 1.585 | 0.1132 | 0.03006 | 5.515111 | 0.09342 |
| Nation | 2018 | 0.02177 | 0.2889 | 1.24 | 0.1305 | 0.04699 | 5.36677 | 0.07551 |
| Nation | 2019 | 0.02396 | 0.2385 | 1.413 | 0.1249 | 0.05703 | 5.309149 | 0.1583 |
| Nation | 2020 | 0.02678 | 0.2823 | 1.419 | 0.1737 | 0.06297 | 5.383998 | 0.9413 |

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|---|---|---|---|---|---|---|---|---|
| Nation | 2021 | 0.02784 | 0.2386 | 1.276 | 0.1188 | 0.03303 | 5.422711 | 0.96132 |
| Nation | 2022 | 0.02121 | 0.2452 | 1.606 | 0.1318 | 0.03462 | 5.430583 | 0.77802 |
| Ndege Chai | 2018 | 0.02329 | 0.2348 | 1.353 | 0.1776 | 0.05415 | 5.432215 | 0.95217 |
| Ndege Chai | 2019 | 0.02296 | 0.2619 | 1.647 | 0.1465 | 0.04322 | 5.429898 | 0.13792 |
| Ndege Chai | 2020 | 0.02747 | 0.2611 | 1.286 | 0.1745 | 0.06544 | 5.408021 | 0.79844 |
| Ndege Chai | 2021 | 0.02725 | 0.2676 | 1.782 | 0.1728 | 0.03094 | 5.435884 | 0.00339 |
| Ndege Chai | 2022 | 0.02393 | 0.2675 | 1.267 | 0.1661 | 0.04423 | 5.31976 | 0.92587 |
| Ndosha | 2018 | 0.03913 | 0.3037 | 1.876 | 0.1827 | 0.08389 | 5.532636 | 1.11561 |
| Ndosha | 2019 | 0.03143 | 0.3091 | 1.827 | 0.1882 | 0.07513 | 5.525652 | 1.03922 |
| Ndosha | 2020 | 0.03058 | 0.3362 | 1.727 | 0.1893 | 0.08552 | 5.577781 | 1.98912 |
| Ndosha | 2021 | 0.03113 | 0.3648 | 1.874 | 0.1803 | 0.08676 | 5.573923 | 1.98339 |
| Ndosha | 2022 | 0.03785 | 0.3586 | 1.882 | 0.1802 | 0.08453 | 5.562397 | 1.87005 |
| Ngarisha | 2018 | 0.03134 | 0.3788 | 1.818 | 0.1845 | 0.0873 | 5.518481 | 1.83283 |
| Ngarisha | 2019 | 0.03781 | 0.386 | 1.891 | 0.1857 | 0.08687 | 5.554254 | 1.92192 |
| Ngarisha | 2020 | 0.0328 | 0.3905 | 1.871 | 0.1837 | 0.08739 | 5.551485 | 1.95308 |
| Ngarisha | 2021 | 0.03296 | 0.3808 | 1.841 | 0.1849 | 0.08732 | 5.537284 | 1.03697 |
| Ngarisha | 2022 | 0.03203 | 0.3976 | 1.883 | 0.1897 | 0.08163 | 5.560774 | 1.10031 |
| Nyamira | 2018 | 0.02109 | 0.2887 | 1.672 | 0.1766 | 0.03217 | 5.436625 | 0.08811 |
| Nyamira | 2019 | 0.02623 | 0.2404 | 1.744 | 0.1712 | 0.07524 | 5.335542 | 0.01142 |
| Nyamira | 2020 | 0.02684 | 0.286 | 1.792 | 0.168 | 0.03167 | 5.336228 | 0.0579 |
| Nyamira | 2021 | 0.02379 | 0.232 | 1.45 | 0.167 | 0.03101 | 5.327933 | 0.92724 |
| Nyamira | 2022 | 0.02646 | 0.2337 | 1.682 | 0.177 | 0.05328 | 5.3764 | 1.00189 |
| Patnas | 2018 | 0.03107 | 0.3948 | 1.781 | 0.1777 | 0.08681 | 5.546882 | 1.99418 |
| Patnas | 2019 | 0.03255 | 0.3664 | 1.862 | 0.1844 | 0.07211 | 5.59778 | 1.13973 |
| Patnas | 2020 | 0.03247 | 0.3566 | 1.814 | 0.1787 | 0.0839 | 5.504958 | 1.9782 |
| Patnas | 2021 | 0.03291 | 0.3694 | 1.794 | 0.1622 | 0.07112 | 5.56537 | 1.04711 |
| Patnas | 2022 | 0.0304 | 0.3493 | 1.883 | 0.1858 | 0.08754 | 5.596635 | 0.89781 |
| Prime Time | 2018 | 0.02351 | 0.2848 | 1.451 | 0.1012 | 0.0334 | 5.104869 | 0.13419 |
| Prime Time | 2019 | 0.02736 | 0.3019 | 1.601 | 0.1468 | 0.03145 | 5.167344 | 0.86209 |
| Prime Time | 2020 | 0.02743 | 0.2904 | 1.765 | 0.163 | 0.05105 | 5.237159 | 0.98277 |
| Prime Time | 2021 | 0.02709 | 0.244 | 1.509 | 0.1455 | 0.06796 | 5.267826 | 0.22518 |
| Prime Time | 2022 | 0.02674 | 0.2739 | 1.416 | 0.1187 | 0.06265 | 5.128922 | 0.93313 |
| Safaricom | 2018 | 0.03325 | 0.3041 | 1.825 | 0.1801 | 0.08171 | 5.703062 | 1.16946 |
| Safaricom | 2019 | 0.03972 | 0.3894 | 1.843 | 0.1869 | 0.08819 | 5.759901 | 1.01135 |

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|---|---|---|---|---|---|---|---|---|
| Safaricom | 2020 | 0.03545 | 0.3111 | 1.853 | 0.1829 | 0.08628 | 5.721508 | 1.9123 |
| Safaricom | 2021 | 0.03669 | 0.3555 | 1.818 | 0.1806 | 0.08743 | 5.754604 | 1.94061 |
| Safaricom | 2022 | 0.03145 | 0.3354 | 1.841 | 0.1801 | 0.08438 | 5.74157 | 1.16612 |