DETERMINANTS OF FINANCIAL PERFORMANCE OF DEPOSIT TAKING SAVINGS AND CREDIT COOPERATIVE SOCIETIES IN NAIROBI COUNTY, KENYA

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MASTER OF SCIENCE IN COMMERCE (FINANCE AND INVESTMENT)

KCA UNIVERSITY

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DECLARATION

I declare that this research project is my original work and has not been presented for a degree in any other university.

Signature…….…… Date…….

Ibrahim Ademba

KCA/09/02908

This research project has been submitted for examination with my approval as the University Supervisor:

Signature……. ……..…… Date ……

Mr. Mackred Ochieng

DEDICATION

This research project is dedicated to my beloved parents without whom; my dreams of going to school would not have been possible; God Bless You. It is also dedicated to my dear wife Pauline khetivuli.Who gave me the strength to solder on and work hard in everything I put my hands to. I appreciate my sons for their continuous prayers and support throughout the entire project.

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ABBREVIATION AND ACRONYMS

CAR	Capital Adequacy Ratio
CBK	Central Bank of Kenya
CLRM	Classical Linear Regression Model
DTSs	Deposits taking Sacco's
FGLS	Feasible Generalized Least Squares
IREC	Institutional Research and Ethics Committee
ROA	Return on Assets
ROE	Return on equity
ROI	Return on Investment
SACCOs	Savings and credit Cooperatives
SASRA	Sacco Societies Regulation Authority
VIF	Variance Inflation Factor

OPERATION DEFINITION OF TERMS

Asset Quality	Asset quality is an appraisal or assessment assessing the risk associated with a specific asset that usually require interest payments
Capital Adequacy	Capital is the amount of own fund available to support the SACCOs business and act as a buffer in case of adverse situation
Financial Performance	Is long-term technique, which have the same objective of enabling organization's growth by ensuring that return on capital exceeds cost of capital, without making high financial risks
Liquidity	Liquidity refers to the ability of the firm to fulfill its obligations
Operational Efficiency	Refers to efficiency and effectiveness that firms constantly strive to improve the productivity of their employees.

ABSTRACT

Savings and Credit Cooperative Societies (SACCOs) have been recognized as critical avenues for economic growth in most countries of the world. Many countries that have achieved economic development have a cooperative sector featuring widespread vibrancy and dynamism. In the present years however, globalization, banking sector regulations and competition has clip into this sector in a very fast rate. The objective of this study was to establish the determinants of financial performance of deposit taking SACCOs in Nairobi County. The specific objectives includedasset quality, capital adequacy, operational efficiency and liquidityon financial performance of deposit taking SACCOs in Nairobi County.Capital Asset Pricing Model Theory, Liquidity Preference Theory and Agency Theory informed the study.Panel research design was used in this study. Panel research design is best suited since panel data was used. The study conducted a census of the all the 39 SACCOs in Nairobi County. The study used secondary quantitative data from SASRA registry comprising of audited financial statements and monthly reports submitted by the deposit-taking SACCOs. This study used formal statistical hypothesis test to check for Normality, Multicollinearity, Hausman Specifications Test, Wooldridge Test for Serial Correlation and Heteroscedasticity.The study employed a dynamic panel data regression model. The descriptive statistics was presented in mean, median, standard deviation and proportions while the inferential statistics includes diagnostics tests, Pearson correlation and multiple linear regression model. The multiple linear regression models used to measure the relationship between the independent variables and the dependent variable that are explained in the model.A critical p value of 0.05 was used to determine whether the overall model was significant or not. The study established that Capital adequacy was found to be positively but insignificant related to financial performance of deposit taking SACCOs. Asset quality was found to be positively and significant related to financial performance of deposit taking SACCOs. Operational efficiency was found to be positively and significant related to financial performance of deposit taking SACCOs. Liquidity was found to be positively and significant related to financial performance of deposit taking SACCOs.The study concludes that there is a strong correlation between capital adequacy, asset quality, operational efficiency and liquidity on financial performance of deposit taking Sacco's. The study recommended on adoption of this management practice will ensure performance of SACCO's and improve investor's confidence since all will be assured of SACCO's going concern status. Secondly, all SACCO's should continuously develop customized loan products which will diversify their sources of income and minimize operational costs.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Savings and Credit Cooperative Societies (SACCOs) have been recognized as critical avenues for economic growth in most countries of the world. Many countries that have achieved economic development have a cooperative sector featuring widespread vibrancy and dynamism (Olweny&Shipho, 2018). Rapid growth of SACCOs that characterized African countries such as South Africa, Kenya and Rwanda have enhanced the substantial growth of economies due to their focus on provision of financial services for benefit of startups. In addition, the SACCOs have played an important role of serving the financing requirements need of households, small and medium enterprises (SMEs). They encourage individuals to save thereby creating or accumulating capital which contribute to economic development of the country. In Kenya, SASRA (2013) approximates that 6 million people are affiliated with SACCOs across Kenya and have accumulated 35% of the countries national savings and thus the need for recognition on the role they play in Kenya.

In the present years however, globalization, banking sector regulations and competition has clip into this sector in a very fast rate. The growth of banking sector, globalization and opening of many trading fronts has empowered the citizen and taking up part of the economy previously controlled by the Sacco. These dynamic changes facing the Sacco's environment could affect their financial performance in the short and long run. Thus, this study sought to evaluate the determinants that affect financial performance of Sacco's in Kenya with a case of Sacco's in Nairobi County.

1.1.1 Determinants of Financial Performance

There are various determinant that affect the financial performance. Various studies from Ando (2013); Berk and DeMarzo (2017); Borg and Gall (2014) and Chaddad and Cook (2014) have used capital adequacy, asset quality, operational efficiency, liquidity,tangibility, risk and institutional sizeas some of the determinants of financial performance in financial institutions. The study narrowed down to capital adequacy, asset quality, operational efficiency, liquidity based on their high impact in the microfinance sector.

Capital adequacy entails the amount of capital relative to a financial institution's loans and other assets(Posner, 2015: Mizgier, Hora &Jüttner, 2015). It represents the most critical element of financial institutions stability and solidarity. Capital adequacy measures a financial institution's financial strength by using its capital and assets. It is used to protect depositors and promote the stability and efficiency of financial systems and used as a measure of its financial strength and stability. Capital adequacy has been the focus of a number of theories and studies as it is considered to be one of the main drivers of any financial institution's profitability. In contrast, some theories argue that in a world of perfect financial markets, capital structure and hence capital regulation is irrelevant(Hassan, Unsal& Tamer, 2016).As per capital buffer theory, capital buffer is the excess capital a financial institution holds above the minimum capital required. The capital buffer theory implicates that financial institutions with low capital buffers attempt to rebuild appropriate capital buffer by raising capital and financial institutions with high capital buffers attempt to maintain their capital buffer(Barus, Muturi, Kibati&Koima, 2017).

Asset quality is a measure of the price at which a financial institution or other financial institution can sell a loan or lease to a third party, as determined by the borrower or lessee(Mathuva&Kiweu, 2016). Asset quality is one of the most critical areas in determining the overall condition of financial lenders. The primary factor affecting overall asset quality is the quality of the loan portfolio and the credit administration program (Mwega, 2016: Nzoka, 2015). Loans typically comprise a majority of a financial institution's assets and carry the greatest amount of risk to their capital. Securities may also comprise a large portion of the assets and also contain significant risks. Other items which can impact asset quality are other real estate, other assets, off-balance sheet items and, to a lesser extent, cash and due from accounts, and premises and fixed assets(Ahamed, 2017). The asset quality rating reflects the quantity of existing and potential credit risk associated with the loan and investment portfolios, other real estate owned, and other assets, as well as off-balance sheet transactions.

Asset quality has been studied as a determinant of financial performance (Olando, 2012). The clarity and flow of all broad assets must be prioritized during rating. The quality of assets can be realized through loans, investments, real estate owned and assets that impact adversely on financial condition (Karagu&Okibo, 2014). Asset quality rules and regulations explain 40 to 100 percent of fund performance. When current assets of the firm exceed the current liabilities, the

firm operates at a risk when their assets become impaired, hence it is vital to monitor indicators of the quality of their assets (Karagu&Okibo, 2014).

Operational efficiency is the ratio between an output gained from the business and an input to run operations(Samad, 2015: Havidz&Setiawan, 2015). Operational efficiency is connected with diverse aspects of its operations, as its financial soundness, its profitability and quality services to customers.Since operational efficiency is about the output to input ratio, it must be measured on both the input and output side.The operational efficient financial institutions are better able to compete because of their lower operational costs and can steal business away from less efficient financial institutions. The relative efficiency of financial institutions is always a matter of serious interest to the regulators, customers, stakeholders, and managers because efficiency is a broader concept; it involves optimally choosing the levels, and mixes of inputs and outputs(Alhassan&Ohene-Asare, 2016). Operational Efficiency thus means financial institutions seek to provide financial services in a safe, secure, speedy and cost effective manner. The goal should be to ensure that the transformation function generates least friction in terms of time and cost overlays (Afaq, Raza,Jameel&Pervaiz, 2019).

Operational efficiency ensures the sound functioning of firms. With increased competition, efficiency and effectiveness have become the rule as firms constantly strive to improve the productivity of their employees (Verma, 2013). Presently it is common to see branches of financial institutions both public and private maintaining extended working hours, flexible time schedules, and outsourcing marketing to attract customers. Another development over the year has been the deployment of technology. Almost all financial institutions have upgraded to computerized system(Samad, 2015).

Liquidity is a measure of the ability and ease with which assets can be converted to cash(Bai, Krishnamurthy &Weymuller, 2018). Liquid assets are those that can be converted to cash quickly if needed to meet financial obligations; examples of liquid assets generally include cash, central financial institution reserves, and government debt. To remain viable, a financial institution must have enough liquid assets to meet its near-term obligations, such as withdrawals by depositors(Khan & Ali, 2016). The liquidity position of an organization is important and needs to be regulated. There are great repercussions of increased liquidity for financial institutions which leads to reduction of the organization’s ability to raise external

finance(Krishnamurthy, 2016).The flip-side of liquidity is liquidity risk which from the financial institution is its inability to meet its obligations when they fall due.Poor liquidity management has been blamed on the inability of financial institution to meet the short term demands of their customers including the depositors and the investors. Efficiency and effectiveness of liquidity management is paramount for existence and growth of organizations(Buch& Goldberg, 2015). According to Central Bank of Kenya(CBK) Prudential Guideline (2013) an institution maintains the minimum holding of liquid assets from time to time as directed by Central Bank.

1.1.2 Financial Performance of Deposit taking SACCO's

There are performance measurement used in accounting that entail Return on Assets (ROA), Return on Equity (ROE), Return on Investment (ROI), market share, market growth and profitability. They are used in accounting standards where these financial metrics are evaluated with regards to past metrics, current metrics and the projected metrics (McLeay, 2015; Floyd & List, 2016).Different stakeholders evaluate the company performance from different perspective. We have shareholders, managers, creditors, tax authorities and other users who have interest in performance of a company. Shareholders will invest in an institution to generate value for their investment. Efficiency use of resources by institution is key aspect by the management to attain good financial performance. To evaluate financial performance of an institution, financial statements are used where different ratios are performed as per requirement of the user. Some of the commonly used financial performance measures are profit after tax, Return on Assets (ROA), Return on Equity (ROE) and earnings per share.

ROE is a financial ratio that refers to how much profit a company earned compared to the total amount of shareholder equity invested or found on the balance sheet. ROE is what the shareholders look in return for their investment. A business that has a high return on equity is more likely to be one that is capable of generating cash internally. Thus, the higher the ROE the better the company is in terms of profit generation. It is further explained by Khrawish (2011) that ROE is the ratio of Net Income after Taxes divided by Total Equity Capital. It represents the rate of return earned on the funds invested in the bank by its stockholders. ROE reflects how effectively a financial institution management is using shareholders' funds. Thus, it can be deduced from the above statement that the better the ROE the more effective the management in utilizing the shareholders capital.

ROA is also another major ratio that indicates the profitability of a financial institution. It is a ratio of Income to its total asset (Khrawish, 2011). It measures the ability of the financial institutionmanagement to generate income by utilizing company assets at their disposal. In other words, it shows how efficiently the resources of the company are used to generate the income. It further indicates the efficiency of the management of a company in generating net income from all the resources of the institution (Khrawish, 2011). Wen (2010), state that a higher ROA shows that the company is more efficient in using its resources

According to Pollet (2013), financial performance forms an important part of the SACCO business and it is crucial for their survival. Successful financial performance in the SACCO has a positive association with the capacity to manage financial issues effectively. Haber and Reichel (2015) provide evidence of a positive association between financially related activities (such as planning and financial control) and the successful financial performance of SACCOs. Mbonyane (2016) sees financial performance as the life blood of small-scale organizations, since without them, no growth decisions can be made. Financial performance for SACCOs is crucial since managers need to know how well the SACCOs are performing. There are two major reasons as to why SACCOs should have financial performance measurement. The first one is to produce financial statements at the right time. Secondly, financial statements should be analyzed to produce information about the performance of the Sacco, which must be used to improve that performance. Profitability ratios are often used in a high esteem as the indicators of credit analysis in SACCOs, since profitability is associated with the results of management performance.

This study used Return on Assets (ROA) as the measure for financial performance of the deposit taking savings and credit cooperative societies.

1.1.3 Deposit Taking SACCOs

Deposit taking SACCOs are authorized to take deposits from and lend to its members. SACCOs are governed by the SACCO bylaws, which state the objectives, membership, share capital, organization structure, management and lending regulations. The SACCO Societies Regulatory Authority (SASRA) regulates the sector. Most SACCOs are managed by a professional management team, which reports to a committee elected by members annually or according to

the bylaws of the SACCO. Most SACCOs in Kenya have restricted membership to industry or sector of working.

Kenya has over 17,000 registered cooperatives with over 200-deposit taking SACCOs (SASRA, 2018).Majority of the Sacco's are based in Nairobi County, as it is the country's financial hub.According to SASRA (2018) report, there are 39 licensed deposits taking Sacco's (DTSs) in Nairobi County as at end of 2018. Sources of funds for SACCOs include member deposit and borrowing from commercial banks particularly Cooperative bank of Kenya. It is also important to note that the main business of SACCOs is lending and as such loans form the biggest assets for SACCOs. SACCOs play a key role in any economy. In addition to providing employment opportunities, SACCOs create income for the youth, farmers and the low-income earners.In Kenya, SACCO comprises over 50% of all cooperatives, and as financial institutions they play a critical role of financial intermediation in the financial landscape focusing mostly on personal development (SASRA, 2018). The SACCOs are found in almost all sectors of the economy and about 80% of the Kenyan population derives their income either directly or indirectly through SACCO initiatives.

The study used deposit taking Sacco's in an effort to determine the factors that impact on lending apart from deposits level towards financial performance. The study also used deposit taking Sacco's as they are licensed to receive money on deposit from private individuals and to pay interest on it. Thus, their growth has had an overall positive economic impact on the individual members of these Sacco's and national economy in general. Nairobi County was chosen as it is the financial headquarter of most of the deposit taking Sacco's in the country and most of them are also based in Nairobi County.

1.2 Statement of the Problem

The savings and credit co-operative societies had been facing low financial performance pointing from insufficient capital base, lack of or slow rate of information technology (IT) adoption, and inefficient loan pricing strategies (Mumanyi, 2018). According to SASRA report in 2018, more than 100 deposit-taking savings and credit co-operatives did not meet the mandatory capital ratio requirement in 2017, raising questions over their fitness in the key credit market.Following the financial reform process in Kenya, there has been an increasing growth in the non-performing assets and this has significantly interfered with development in the financial area this has

impacted negatively on the general national economy (Aliyu&Tasmin, 2012). Sacco's management have the responsibility of ensuring that asset quality is well monitored so as maintain the soundness of the Sacco's.

Since the enactment of the Kenya SACCOs Act (2008), concerns have been raised byacademia, financial practitioners and researchers about impact of deposit levels ondeposit taking SACCOs lending in a regulated environment. In addition, there is little comprehensiveimpact assessment done to determine the impact of characteristics such as asset quality, capital adequacy, operational efficiency and liquidity on lending ofSASRA regulated SACCOs. Further, the deposit Sacco's are operating in a competitive environment where the rise of mobile saving and lending has been vibrant in the banking sector.

Some of the studies conducted in this filed present research gaps, Nyambere (2017) examined the effects of credit risk management on financial performance of deposit taking savings and credit co-operative societies in Kenya. The study used management efficiency and total earnings as the study variables whereas the current study usedasset quality, capital adequacy, operational efficiency and liquidity on financial performance of deposit taking Sacco's. Anjili (2014) examined the factors affecting management of asset and liability of Sacco's in Kenya related to financial performance. The study however looked at all Sacco's while the current study focused on deposit taking Sacco's. The study found out that a small reduction in operational efficiency can lead to high reduction in profits and that increased income diversification leads to increased financial performance, keeping other factors constant. In another similar study (Ongore, 2013), factors affecting the performance of finances of Kenyan commercial banks, it was found out that a bank's managerial decisions significantly contribute to its financial performance and that macro-factors have an insignificant contribution to this performance. The study however looked into commercial banks whereas the current study focused on deposit taking Sacco's. Adnan (2017) investigated the effects of management of assets quality on the value of shareholders and profitability. From this study, it was clear that a bank's assets quality indicates a collective positive impact on profitability and shareholders 'value. This therefore implies the significance of a bank diversifying its investments to achieve a sustainable performance.

Langat (2012) undertook a study on factors influencing performance of Savings and Credit Co-operative Societies. The study was guided by modern portfolio theory which guides institutions

and savings investors on how to construct their investment portfolios and how to mitigate risks through portfolio diversifications and thus increase returns to investors. Wambua (2016) looked into the effects of corporate governance on Savings and Credit Co-operative Societies financial performance in Kenya and concluded that financial monitoring by the board affected the performance of the SACCO.Therefore, this study sought to bridge the by establish the determinants of financial performance of deposit taking SACCOs in Nairobi County.

1.3 Research Objective

1.3.1 General Objective

The objective of the study was to establish the determinants of financial performance of deposit taking SACCOs in Nairobi County.

1.3.2 Specific Objectives

i. To evaluate the influence ofcapital adequacy on financial performance of deposit taking SACCOs in Nairobi County
ii. To determine the impact ofasset qualityon financial performance of deposit taking SACCOs in Nairobi County
iii. To determine the impact ofoperational efficiency on financial performance of deposit taking SACCOs in Nairobi County
iv. To examine the effect of liquidity on financial performance of deposit taking SACCOs in Nairobi County

1.4 Research Hypotheses

The study was guided by the following research hypotheses;

i. Capital adequacy has no significant effect on financial performance of deposit taking SACCOs in Nairobi County
ii. Asset quality has no significant effect on financial performance of deposit taking SACCOs in Nairobi County
iii. Operational efficiency has no significant effect on financial performance of deposit taking SACCOs in Nairobi County
iv. Liquidity has no significant effect on financial performance of deposit taking SACCOs in Nairobi County

1.5Justification of the Study

Undertaking this study, is relevant as thefindingswas used by various stakeholders to assess the SACCOs' positioning and inherent challenges. Further, the study was expected to be beneficial to various stakeholders including the Government of Kenya, current and potential investors, members and management of SACCOs, and scholars interested in similar or related areas of study. The Government policy makers will obtain knowledge of the SACCOs' dynamics and thus obtain guidance in designing appropriate practices that will regulate the stakeholders for the purpose of financial stability. The researcher also will anticipate that the findings of the study will help investors in discovering new and better techniques of improving and running their operations in order to improve their financial performance.

1.6Significance of the Study

1.6.1 Management of SACCOs

To SACCO's management and directors, the study will provide an insight into the various approaches towards determinants of financial performance in the sector. Knowledge of contemporary financial management techniques will enable them identify plan, control and effectively manage SACCOS to enhance success.

1.6.2 Government

The findings for research was used to assist in policy formulation regarding taxation and other regulatory requirements of SACCOS in the country. The policy maker will know how well to incorporate the sector effectively to ensure its full participation.

1.6.3 Shareholders

The findings will create some basic awareness to the shareholders and will help them in understanding the circumstances under which the SACCOS operate and hence will reduce conflict between shareholders and management.

1.6.4 Future Researchers

Academicians and researchers was furnished with relevant information regarding financial performance in savings and credit cooperative societies. The findings will stimulate other

researchers to venture into determinants of financial performance that has not been studied. This will contribute to the general body of knowledge and will form a basis for future research.

1.7 Scope of the Study

The study focused on the determinant of financial performance of SACCOS in Nairobi City County. This involved undertaking an in-depth study based on capital adequacy, asset quality, operational efficiency and liquidity. This study wasbased on selected savings and credit co-operative societies in Nairobi County. This study covered the period from February 2019 to November 2019.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter discusses theories relevant to the study. The concept of the study was developed under the conceptual framework section and finally reviews of empirical studies that have previously been conducted on the area of financial performance of SACCOs was done.

2.2 Theoretical Review

The theoretical framework is the structure that can hold or support a theory of a research study. It introduces and describes the theory which explains why the research problem under study exists. Capital Asset Pricing Model Theory, Liquidity Preference Theory and Agency Theory informed the study. The anchoring theory wasCapital Asset Pricing Model Theory.

2.2.1. Capital Asset Pricing Model Theory

The Capital Asset Pricing Model Theory was developed by Sharpe (1964) and refined Black (1972). This model explains that investors must diversify their portfolios and that they must possess a given fraction of the financial institution‘s market portfolio. Investors without special investment knowledge are advised to hold diversified portfolios. This is called efficient markets hypothesis (Black, 1972). All investors need high levels of assurance of expected returns so as to invest in highly risky ventures. However, it should be known that in the presence of informational asymmetries and contract enforcement problems, financial institutions will not always commit their resources to businesses with high returns. Making of corrections on estimation errors can greatly improve investment performance; this statement is supported by empirical evidence based on simulation analysis, mean-variance portfolio selection and sample portfolio performance. According to this model, investors always try to avoid risks and they only look at the variance and mean on their return on investment during a single period when choosing portfolios (Fofack, 2009). Since portfolios reduce the variance of portfolio return, given expected profits, and increase expected returns, given variance; investors always choose mean-variance-efficient portfolios.

However, the Capital Asset Pricing Model Theory is often criticized as unrealistic because of the assumptions on which the model is based. The theory assumes that Investors can borrow and

lend at the risk-free rate of return. This is an assumption made by portfolio theory, from which the CAPM was developed, and provides a minimum level of return required by investors. The theory also assumes that there is a perfect capital market. A perfect capital market requires the following: that there are no taxes or transaction costs; that perfect information is freely available to all investors who, as a result, have the same expectations; that all investors are risk averse, rational and desire to maximize their own utility; and that there are a large number of buyers and sellers in the market.

The theory is relevant as it informs the variables of asset quality and capital adequacy. This model assumes that the qualities of assets or loans are key items in any given financial institutions portfolio since a financial institution‘s portfolio comprises of both assets and liabilities. It therefore is the prerogative of bank management bodies to come up with portfolios that will give the highest returns a reduced risks and costs. This model is relevant to this study because it is used in estimating of cost of capital for banks and in evaluation of performance appraisals of financial instrument portfolios. The theory reveals the relationship between yields and risks.

2.2.2 Liquidity Preference Theory

John Maynard Keynes created the Liquidity Preference Theory in to explain the role of the interest rate by the supply and demand for money in 1994.According to Keynes, investors demand a premium for securities with longer maturities, which entail greater risk, because they would prefer to hold cash, which entails less risk; hence, the more liquid an investment is, the easier it is to sell quickly for its full value.The theory further holds that since interest rates are more volatile in the short term, the premium on short-term versus medium-term securities was greater than the premium on medium-term versus long-term securities (Amihud& Mendelson,1991).According to Runde (1994), people value money for both the transaction of current business and its use as a store of wealth. Thus, they will sacrifice the ability to earn interest on money that they want to spend in the present, and that they want to have it on hand as a precaution; on the other hand, when interest rates increase, they become willing to hold less money for these purposes in order to secure a profit.

According to Runde (1994), the rate of interest is determined by the demand for, and supply of, money; and demand for money (or liquidity preference) means the desire of the public to hold

liquid cash for the following three motives. The transactions motive, which relates to the demand for money or the need of cash for the current transactions of individual and business exchanges. The precautionary motive, which refers to the desire to hold cash balances for unforeseen contingencies (such as illness, accident and unemployment); and The speculative motive, which relates to the desire to hold one's resources in liquid form to take advantage of future changes in the rate of interest or bond prices. The higher the rate of interest, the lower the speculative demand for money, while the lower the rate of interest, the higher the speculative demand for money (Taylor & O'Connell, 1985)

The theory is relevant to this study as it informs the variable on liquidity. This is because according to the theory a firm needs to hold more cash for investment; hence, the rate at which a financial institution charges interest on loans borrowed, especially in the short term, is key in promoting the investment agenda for such a firm. The theory is therefore relevant to the current study since it informs one of the independent variable that is liquidity.

2.2.3Agency Theory

Agency theory was developed by Jensen and Meckling (1976) and argues for a clear separation of the responsibilities of the principals and the agents.They argued that there is an increase in the gap between ownership and the control of large organizations that is precipitated by a decrease in equity ownership (Roshan, 2016). This situation provided an opportunity for the managers to pursue their own interests rather than maximizing returns to the shareholders. The top managers make decisions that increase the value of the firms because they often own shares in the firm in which they are working. Additionally, the managers are hired and retained by the board of directors who are elected by stockholders (Berk&DeMarzo, 2017).

In situations where the company has leverage, conflict of interest arises because investment interests have different consequences for the value of equity and the value of debt. This conflict is best depicted in situations where the company is experiencing financial distress. In such situations, managers make decisions that protect the shareholders but disadvantage the creditors (Jensen &Meckling, 2016). Agency theory posits that optimal capital structure and adequacy may result from minimizing the costs generated by the conflicts of interest between the firm's various stakeholders. On the other hand, pecking order theory suggests that no optimal financial

performance exists; proponents of the theory argue that firms resort to debt financing only when earnings are unsatisfactory and only as a last resort do they opt for risky external financing.

Agency theory is relevant to the study as it suggests that there are other factors such as the actions of the management in financing decisions that can affect the financial performance of deposit-taking SACCOs. The agency theory predicts that, higher levels of managerial ownership structure increase firm performance due to an incentive effect. Other authors have in turn suggested that large outside owners might have a role to play as monitors of the management and might thus enhance performance. Consequently, postulates of agency theory have to be seen with different perspective in India given the underdeveloped nature of bond markets and dominance of state-owned banks in lending to corporate sector.

2.3 Empirical Review

This section reviews studies previously done on determinants of financial performance. According to Zikmund, Babin, Carr and Griffin(2010), empirical literature review is a directed search of published work which includes books and periodicals. It is a comprehensive survey of previous inquiries related to the research questions. Miriti(2014) states that through the use of a systematic approach to previous scholarly work, literature review allows a researcher to place his research work into an intellectual and historical context, that is, it enables the researcher declare why his research matters.

2.3.1 Capital Adequacy and Financial Performance

Capital is one of the specific factors that influence the level of financial performance. Capital is the amount of own fund available to support the SACCOs business and act as a buffer in case of adverse situation (Athanasoglou, 2015). Financial institutions capital creates liquidity due to the fact that deposits are most fragile and prone to runs. Moreover, greater capital reduces the chance of distress (Diamond, 2010). However, it is not without drawbacks that it induces weak demand for liability, the cheapest sources of fund Capital adequacy is the level of capital required by the firms to enable them withstand the risks such as credit, market and operational risks they are exposed to in order to absorb the potential loses and protect the debtors. According to Dang (2011), the adequacy of capital is judged on the basis of capital adequacy ratio (CAR). Capital adequacy ratio shows the internal strength of the SACCO to withstand losses during crisis. Capital adequacy ratio is directly proportional to the resilience of the SACCO to crisis situations.

It has also a direct effect on financial performance by determining its expansion to risky but profitable ventures or areas (Sangmi&Nazir, 2010).

The implementation of the capital adequacy ratio has met several hurdles which include; reduced pay-out on members' funds, recruitment of new members, restricted avenues for investment, and reduced lending capacity. To mitigate these barriers Saccos have developed strategies which include; SACCOs found issuing new capital, increasing membership base, diversifying product base, adjusting dividend pay-out ratio, stricter credit rating, matching share contributions to loan amounts guaranteed and reduced payment periods to be most effective.Njagi, Kimani and Ngugi (2012) in a study done in Kenya found out that SACCOs were experiencing a low capital base, and in an attempt to deter their members from borrowing from commercial banks, they borrow from commercial banks at high interest rates so as to lend to their members. This in essence pushes up the operating costs of the SACCOs.

Miriti(2014) examined the relationship between capital adequacy and financial performance of commercial banks in Nigeria. The study adopted panel research designand collected secondary data from 2007 to 2015 among selected Nigerian commercial banks. Data was analyzed using fixed generalized least squares, results of the study revealed a positive and significant relationship between capital adequacy and firm performance. Moreover, the study revealed capital adequacy on commercial banks was less than 30%, which depicted that the amount of deposit received by commercial banks is rarely enough to meet the risk exposure and meet all liabilities on time. Therefore, there is no surety of investors' confidence in the financial institutions. Although, the study drew panel secondary data the study did not test the data for stationarity, panel data diagnostic tests were also excluded.

Odhiambo (2011) researched on relationship between working capital management and financial performance by deposit taking Saccos licensed in Nairobi County. Findings of the study indicated that efficient working capital management leads to better financial performance of a SACCO hence positive relationship existed between efficient working capital management and financial performance. Olando (2013) study looked at the assessment of financial practice as a determinant of growth of Sacco's wealth in Kenya, a case study of Meru County. This study used a comparative design in soliciting information among forty four (44) Saccos. The research data methodology tool used was a questionnaire and the questionnaires were distributed to the forty

four Saccos in the county. The study found out that Saccos which inadequately complied with their by-laws and did not have incomes from their investments were unable to adequately cover their costs. The study recommended that the government should review legal framework to ensure that institutional capital was used to grow Sacco's wealth. Ademba (2012) reported on cash management and stated that cash management was the most important item in the operations of a SACCO. He asserted that financial institutions should manage cash adequately to avoid panic withdrawals by depositors. The Saccos therefore should maintain cash and cash equivalents of 15% ratio to short term deposits and short term liabilities, as provided by the SACCO societies Act in Kenya (GoK, 2008).

However, Kenyan Sacco's, capital is utilized for expansion programs and the rest utilized for loaning to members and hence not likely to draw the same conclusion made by Buch (2014). Thus the assertion by Mckillop and Wilson (2014) that capital adequacy regulation is effective in safeguarding deposits and stability of financial system supports prudential regulations to Sacco's. Kilonzi (2012) appreciated the fact that the eligible Sacco's applied to SASRA (Sacco Societies Regulatory Authority), a government body for regulating Sacco's for two reasons, namely: one to comply with the government regulations and two to benefit from the new confidence that public showed after Sacco legislation. For a SACCO to apply, it had to meet two conditions namely, presence of front office savings activity (FOSA) and registration certificate from the concerned ministry. The eligible Sacco's were called deposit taking Sacco's, mainly because the quasi bank activities involved exchanging money across the counter.

Kahuthu (2016) in his study on the Impact of Prudential Regulation on Financial performance of Deposit Taking Savings and Credit Co-operative Societies in Kenya revealed that core capital positively influenced the financial performance of deposit taking SACCOs in Kenya. Results of the inferential statistics such as ANOVA showed that core capital has a major positive significance on the SACCO‟ s financial performance. Barus et al (2017) concluded that capital adequacy influenced the financial performance of savings and credit societies in Kenya. Their findings were explained by the regression results that showed the influence was positive and also showed the magnitude by which capital adequacy influenced the financial performance of savings and credit societies.

Sangmi*et al*. (2010) examined the relationship between capital adequacy and bank profitability through linearity approach. The study adopted panel research design, collected five secondary data from selected commercial banks financial statements. Results of the study revealed a positive and significant relationship between capital adequacy and bank profitability. The results revealed that the higher the equity levels the better the prospects for superior performance. It was concluded to maintain investor confidence there is need to continuously ensure that commercial banks adhere to minimum capital requirement ratios and consequently increase the level of credit creation and safeguard customers' deposit. Although, the study drew panel secondary data the study did not test the data for stationarity, panel data diagnostic tests were also excluded.

According to Athanasoglou et al. (2015),capital is one of the bank specific factors that influence the level of bank performance. Capital isthe amount of own fund available to support the bank's business and act as a buffer in case ofadverse situation. Banks capital creates liquidity for the bank due tothe fact that deposits are most fragile and prone to bank runs. Moreover, greater bank capitalreduces the chance of distress (Diamond, 2000). However, it is not without drawbacks that itinduce weak demand for liability, the cheapest sources of fund Capital adequacy is the level ofcapital required by the banks to enable them withstand the risks such as credit, market andoperational risks they are exposed to in order to absorb the potential loses and protect the bank'sdebtors.

Capital adequacy, according to Sangmi and Nazir (2010), is a reflection of the inner strength of abank. Some of the ratios that measure capital adequacy include capital adequacy ratio (CAR),leverage ratio, and net worth protection. The leverage ratio, which is also referred to as the debtto equity ratio (debt/shareholders equity), is adopted in this study.Berger et al. (2008) demonstrates the reasons for this "excess" capital using annual panel datafrom 1992 through 2006. Results indicate that U.S. banks hold significantly more equity capitalthan required by their regulators. Besides, findings show that BHCs actively manage their capital ratios, set targetcapital levels substantially above well-capitalized regulatory minima, and make rapid adjustments toward their targets.

Odunga, Nyangweso, Carter and Mwarumba (2013) conducted a study to determine the effect ofcreditriskandcapital adequacy,onoperatingefficiencyofcommercialbanksin in Kenya. The study was anchored on the theory of operational efficiency. Credit risk was measured using four ratios

which included net-chargeoffto gross loans, loan loss provision to total loans ratio, loanlossprovision to equity, and loanlossreserves to equityratio. Capitaladequacy was measured using core capital ratio, risk-based capital ratio, totalcapital-ratio, and equity to total assets ratio. Operational efficiency was measured using the operationalefficiency ratio (Interest incomenon-interest income securitiesgains)/ (Interest expense non-interest expense provision for loan losses and taxes). The study used the explanatory research design. The study used fixed effects regression model to analyses panel data. The study established that41.35% of the variation in operational efficiency of commercial banks in Kenya was occasioned by credit risk and capital.

Nyanga (2012) used an explanatory study. The population was all the 43 commercial banks by December 2011. All the banks were used in the study. A ten year secondary data from 2001 to 2010 was collected from Banking Survey and the Central Bank of Kenya. Descriptive analysis, correlation analysis and regression analysis were used to perform the data analysis. Significance was tested at 5% level. The study found that capital adequacy and exchange rates were negatively correlated with ROE while liquidity, operating cost efficiency, size, risk, GDP, and inflation had a positive influence on ROE. Overall, the independent variables accounted for 95.3% of the variance in ROE. Further, the results revealed that exchange rate was negatively related with ROA while capital adequacy, liquidity, operating cost efficiency, size, risk, GDP, and inflation had positive effects on ROA. It was noted that the independent variables accounted for 95.6% of the variance in ROA. However, none of these effects were significant at 5% level of confidence.

Nasieku (2014) investigated the effects of Basel capital adequacy framework on the economic efficiency of banks in Kenya during the period 2001-2011. The study adopted data envelopment analysis (DEA) to analyze banks economic efficiency. The study found out that the behavior of the Kenyan banking sector in terms of resource allocation and utilization (efficiency) was affected by the level of capital held by the bank and the country's economic situation. The study found that the existence of voluntary capital cushions as measured by the leverage ratio had no implications to the efficacy of banks in Kenya but risk based capital cushions positively influenced bank efficiency.

Girardone, Molyneux and Gardener (2004) investigated the main determinants of Italian banks' cost efficiency over the period 1993–1996, by employing a fourier-flexible stochastic cost

frontier in order to measure X-efficiencies and economies of scale. The results indicated that the most efficient and profitable institutions are more able to control all aspects of costs, especially labour costs. Most significantly, the study revealed that inefficiencies appeared to be inversely correlated with capital strength and positively related to the level of non-performing loans in the balance sheet. This they argued that it could an indication that higher capital ratios may prevent moral hazard both for the bank and its managers.

Isik and Hassan (2003) in a study of Turkish commercial banks investigated the relationship between capitalization and efficiency. They found that well-capitalized firms were more efficient. They offered two plausible explanations; one is that efficient firms have higher profits, which might lead to higher equity-to-asset ratios. Alternatively, the positive relationship may be an indication that inefficient banks with lower financial capital have less to lose from taking a risky gamble than an efficient bank. Therefore, as the level of financial capital decreases, managers of the inefficient banks have growing incentives to bet the bank. This explanation is consistent with the moral hazard theory.

Naceurand Kandil (2016) examined the impact of capital requirement on the profitability of commercial banks in Egypt. The study focused on capital requirement regulations set by the Central Bank of Egypt and the Basle committee. The study found that high capital requirement increased the cost of intermediation. On the other hand, the capital requirements increased the banks' size leading to increased bank activity and therefore improved performance. The study concluded that capital requirement regulation improved performance.

Saona (2010) investigated the relationship between the capital structure of commercial banks in the United States and performance. The study revealed that a negative relationship existed between the capital ratio and the profitability for the banking industry. Another study by Berger and Bowman (2012) indicated that capital helps small banks to increase their probability of survival and market share at all times (during banking crises, market crises, and normal times). They study further argued that capital enhances the performance of medium and large banks primarily during banking crises

Odunga*et al*. (2013) studied the effect of credit risk and capital adequacy on the performance of commercial banks in Kenya. The study was guided by the operational efficiency theory. They found that credit risk ratios had a significant impact on operating efficiency of the banks. In an

interesting twist, the study found that capital adequacy had no significant impact on bank performance. The study recommended that banks shift their concentration from increasing capital levels to credit risk management.

2.3.2 Asset qualityand Financial Performance

Asset quality is an appraisal or assessment assessing the risk associated with a specific asset that usually require interest payments for instance, investment portfolios. Risk advisors often evaluate the quality of such assets by allocating an arithmetical grade to the various assets on how much risk is associated with the asset. The rating naturally weakens with a drop in timely and full repayment (Mvula, 2013).Many factors are considered when measuring asset quality. These include the level of portfolio diversification, regulatory framework and efficiency of operations among others. The risk level associated with an asset is measured by decrease in uncertain assets, fall in provision losses, reduction in non-performing loans, and growth in receivables. While cooperative societies continue to expand their provision of financial products, loan and advances still form the major element of its asset base. For that reason, asset quality remains a fundamental pointer of a cooperative society's financial viability.

Muriuki (2014) noted that asset quality is a strong determinant of financial institution performance because it influences the interest incomes while at the same time reduces the cost burden of bad debts management. The higher the non-performing assets to the gross or net assets book, the lower the asset quality and vice versa and therefore it means that the trade-off between asset quality and financial performance is expected to be negative. Mvula (2013) argues that loss of principal and interest, costs of recovery and the opportunity cost of time taken to recover defaulted loans weakens an entity's financial viability. Poor financial performance of an institution affects the attraction of the institution to would be investors which may lead it to insolvency and eventual collapse.

Muriuki (2014) states that assets are resources under the control of an entity as a result of historical events and from which the entity presumes a flow of economic benefits in future. Before such a resource is recognized as an asset an entity's books, the inflow of such benefits must be likely and the cost or value be reliability measurable. Muriuki (2014) asserts that asset quality is a strong determinant of financial institution performance because it influences the interest incomes and also the cost burden of bad debts management.

The bank's asset is another bank specific variable that affects the profitability of a bank. The bankasset includes among others current asset, credit portfolio, fixed asset, and other investments. Often agrowing asset (size) related to the age of the bank (Athanasoglou et al., 2015). More often than not theloan of a bank is the major asset that generates the major share of the banks income. Loan is the majorasset of commercial banks from which they generate income. The quality of loan portfolio determinesthe profitability of banks. The loan portfolio quality has A direct bearing on bank profitability. Thehighest risk facing a bank is the losses derived from delinquent loans (Dang, 2011). Thus,nonperforming loan ratios are the best proxies for asset quality. Different types of financial ratios usedto study the performances of banks by different scholars. It is the major concern of all commercialbanks to keep the amount of nonperforming loans to low level. This is so because high nonperformingloan affects the profitability of the bank. Thus, low nonperforming loans to total loans shows that thegood health of the portfolio a bank. The lower the ratio the better the bank performing (Sangmi&Nazir, 2010).

According to Athanasoglou(2015), the bank's asset is another bank specific variable that affects the profitability of a bank. Thebank asset includes among others current asset, credit portfolio, fixed asset, and otherinvestments. Often a growing asset (size) related to the age of the bank. More often than not the loan of a bank is the major asset that generates the major share ofthe banks income. Loan is the major asset of commercial banks from which they generateincome. The quality of loan portfolio determines the profitability of banks. The loan portfolioquality has a direct bearing on bank profitability. The highest risk facing a bank is the lossesderived from delinquent loans (Dang, 2011). Thus, nonperforming loan ratios are the bestproxies for asset quality. Different types of financial ratios used to study the performances ofbanks by different scholars. It is the major concern of all commercial banks to keep the amountof nonperforming loans to low level. This is so because high nonperforming loan affects theprofitability of the bank. Thus, low nonperforming loans to total loans shows that the good healthof the portfolio a bank. The lower the ratio the better the bank performing (Sangmi&Nazir,2010).

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most efficient and profitable institutions are more able to control all aspects of costs, especially labour costs. Most significantly, the study revealed that inefficiencies appeared to be inversely correlated with capital strength and positively related to the level of non-performing loans in the balance sheet. This they argued that it could an indication that higher capital ratios may prevent moral hazard both for the bank and its managers.

Podpiera and Weill (2007) investigated the causality between non-performing loans and cost efficiency in an attempt to examine whether either of these factors is the deep determinant of bank failures. By extending the granger causality model developed by Berger and DeYoung (1997) they applied GMM dynamic panel estimators on a panel of Czech banks between 1994 and 2005. The study provided clear support for the "bad management" hypothesis, according to which reduced cost efficiency fosters an increase in non-performing loans. No evidence was found in support for the "bad luck" hypothesis, which suggests that an accumulation of non-performing loans hampers cost efficiency.

The financial institution's asset is another specific variable that affects its financial performance. The asset includes among others current asset, credit portfolio, fixed asset, and other investments. Often a growing asset (size) is related to the age of the firm (Athanasoglou, 2015). More often than not the loan is the major asset that generates the major share of the SACCOs' income. The quality of loan portfolio determines the profitability of SACCO. The loan portfolio quality has a direct bearing on profitability. The highest risk facing a SACCO or any other financial institution is the losses derived from delinquent loans (Dang, 2011). Thus, nonperforming loan ratios are the best proxies for asset quality. It is the major concern of all financial institutions to keep the amount of nonperforming loans to low level. This is so because high nonperforming loan affects the profitability. Thus, low nonperforming loans to total loans shows that the good health of the SACCO portfolio. The lower the ratio, better the financial performance (Sangmi&Nazir, 2010).

According to Grier (2007), poor asset quality is the major cause of most bank failure". A mostimportant asset category is the loan portfolio; the greatest risk facing the bank is the risk of loanlosses derived from the delinquent loans. The credit analyst should carry out the asset qualityassessment by performing the credit risk management and evaluating the quality of loan

portfoliousing trend analysis and peer comparison. Measuring the asset quality is difficult because it ismostly derived from the analyst's subjectivity.

Hassan and Sanchez (2007) examines banking performance concerning with asset quality (beside capital adequacy and earnings). The authors estimate and compare the efficiency and productivity of seven Latin American countries (Argentina, Brazil, Chile, Colombia, Ecuador, Mexico and Venezuela) during the period from 1996 to 2003. The study finds that most of the sources of inefficiencies are regulatory rather than technical. This means that bank managers do not choose the correct (optimal) input and output mix, because they are not forced to do so by the environmental conditions (either government regulations or market conditions).

Burki and Niazi (2010) undertook a study on the impact of financial reforms on efficiency of state-owned, private and foreign banks in Pakistan. Using a sample of 40 banks for the period 1991–2000 they used data envelopment analysis to generate efficiency score and tobit regression to investigate how efficiency measures were correlated with some key bank-related attributes. The study revealed that there exist an important link between bank sizes, asset quality and bank branches with efficiency indexes. These measures were also found to correlate with efficiency scores. It was also noted that every 10% increase in share of nonperforming to total loans decreases banking efficiency by 6 to 10% highlighting the importance of asset quality in banks efficiency. In addition the efficiency of banks was found to be negatively associated with the number of bank branches.

According to Collins &Wanjan (2011), loan evaluation criteria have a direct influence on performance of SACCOS. Issuing loans to borrowers who are already overloaded with debts or possess unfavourable loan history can expose SACCOS to unnecessary default and loan risk. In order to decrease these risks, SACCOS and other lending institutions need to take into consideration several common applicants' particulars such as debt to income ratios business and loan history and performance record and for individual loans applicants their time on the job or length of working in their organisations (Mullei, 2013).

According to the Sacco Supervision Annual Report (2014), the Kenyan subsector registered an overall improved performance in total income driven mainly by loan interest income. Cooperative societies invest in a blend of broad asset classes including loans and advances, cash and cash equivalents, prepayments, receivables, properties, equipment, quoted and unquoted

securities, government securities among others. The risk level associated with an asset is measured by decrease in uncertain assets, fall in provision losses, reduction in non-performing loans, and growth in receivables. From an accounting perspective, allowances for potential losses arising from risks associated with investments must be made and recognized in the financial statements. These allowances are recorded as expenses, which affect the overall performance. Due to the size of investment in loans, the regulator directs that the loans and advances be categorized based on repayment vis-à-vis loan contract terms.

2.3.3 Operation Efficiencyand Financial Performance

A study by Mumanyi (2014) in Kenya on the challenges facing SACCOs in Mombasa County indicated that the high cost of administration, the management of small loans and the high interest rate of borrowing so as to lend to members were hindering the growth of SACCOs in Kenya. It was further noted that due to the environment in which SACCOs operate, there are inefficient and non- functional infrastructure facilities which led to increase in the cost of operation. In another study by Makori, Munene and Muturi (2013) cited the high dependency on short term borrowing was causing the operating to be high.

Dang (2011) observed that high level of cost inefficiency is highly attributable to the low profitability that results from inadequate organization of farmers into collective farmers' institutions that provide opportunities for risk sharing and improved bargaining power. Revamping the productivity of small scale farmers, therefore, requires collective farmers' institutions that provide opportunities for risk sharing and improved bargaining power that are not available to individual farmers.

Kilonzi (2012), noted that SACCOs needs to be efficient in their operations in order toperform better. Management efficiency had a strong relationship with financial performance.Efficiency contributes to financial performance of SACCOs by increasing the return on assets.Njeri (2017) noted that risk in terms of capital to risk weighted loan determined capitaladequacy; core capital to total assets. Appropriate capital adequacy leads to efficiency andeffective financial performance.Lakew, Meniga and Gebru(2014), did a study on financial performance of multipurposeco-operative unions in Tigray Region, Ethiopia. They described performance measurement asthe process of quantifying efficiency and effectiveness. Effectiveness is compliance withcustomer requirements, and efficiency is how the organization's resources are

used to achievecustomer satisfaction levels. Financial performance deals with measuring the results of thefirm's policies and operations in monetary terms. These results are reflected in the firm's returnon investment, return on assets and value added, to mention a few. FOSA products describethe viable investments for SACCOs that can lead to efficiency and effective financialperformance.

Wanjiru, (2016), carried out a research on the effect of financial risks on the return oninvestments for deposit taking saccos in Kenya. The results of the data analysis indicate thatfinancial risks have significant effect on the return on investment for DTSs. The study showsthat in addition to the financial risks, other determinants of return on investments havesignificant effect on return on investment. SACCOs invest through proceeds from FOSAproducts and expect return on investments to influence financial performance.Mwania, (2017) assessed the relationship between financial performance and growth ofSacco's in Kenya. The researcher noted that there was huge credit risks encountered amongdifferent SACCOs, hence the need for managements to ensure there are improved policies oncredit terms and this will reduce liquidity risk and improve financial performance of the SACCOs.With the SACCO regulator on board, there is need to introduce compliance of InternationalFinancial Reporting Standards (IFRS) to ensure that all SACCOs have a standard way ofreporting and it will be easier to monitor loan obligation among different SACCOs since hugeloans have an effect on the performance of the economy in relation to inflation rate and grossdomestic product of the country.

Muteke, (2015) did a study the relationship between financial innovation and financialperformance among savings and credit co-operative societies in Mombasa county Kenya. Thestudy established that financial innovation affect the financial performance of Sacco's to a great extent. Products innovation contributed also to great extent to financial performance of Sacco.The study revealed that new deposit accounts, credit card, debit card, personal unsecured loan,money transfer services and product tailored to favor certain group also help in realizing highmarket share in the sector. The study further established that process innovation adopted by thesales affected the financial performance of the Sacco to a great extent. The study establishedthat most Sacco's created value through office automation, use of

computer, electronic moneytransfer, internet banks transaction, ATM transactions and clients data management softwarecreated strong products employed to enhance customer's satisfaction.

Miriti (2013) noted that financial performance is influenced interests on loans, repayment period and default management. Low interest charges by cooperative society can be easily repaid by the members. Product diversification in regard to addition of FOSA products in operations of SACCOs ought to come with interest rates adjustments to improve affordability and reduce default. The interests of the members and the SACCOs as an organization sometimes clash. SACCOs are interested in minimizing loan default risks as much as possible while members are interested solely in meeting economic and social needs. In case of default, the organization may turn on capital to continue their operations. This weakens the capital base and hampers their financial performance.

With increased competition, efficiency and effectiveness have become the rule as firms constantly strive to improve the productivity of their employees (Verma, 2013). Presently it is common to see branches of financial institutions both public and private maintaining extended working hours, flexible time schedules, and outsourcing marketing to attract customers. Another development over the year has been the deployment of technology. Almost all financial institutions have upgraded to computerized system. Internet banking, telephone banking has become widespread and most firms offering these services quite comfortably. The ratios in this segment involved subject analysis to measure the efficiency and effectiveness of management. The management of firms takes crucial decision depending on its risk perfection. It sets vision and goal for the organization and sees that it achieves them. This parameter is used to evaluate management efficiency as to assign premium to better quality and discount poorly managed ones (Dang, 2011).

The literature on the impact of a common bond of co-operative's performance provides additional perspective on the size of credit co-operatives in India. Performance of a credit union depends on the strength of common bond among members (Tarawneh, 2016). Studies find a favourable impact of occupation-based commonality on the performance of credit unions, as commonality of occupation suggests tighter bonds and reduces operating costs (Tarawneh, 2016).

2.3.4 Liquidityand Financial Performance

Odunga, Nyangweso and Nkobe (2013) investigated the effect of liquidity and capital adequacy on operating efficiency of commercial banks in Kenya. The study used 40 commercial banks for the period 2005-2011 applying fixed effect regression in the analysis. The results indicated that previous year's operational efficiency, liquidity and capital adequacy combined explained about 41% of the bank's operating efficiency. Further, total capital ratio and liquid asset to deposits ratio positively affected the operating efficiency of the banks. The other liquidity ratios such as interbank ratio, loan ratio, net loans to deposits ratio and capital adequacy ratios - core capital ratio, riskbased capital ratio and equity to total asset ratio had insignificant effect on operating efficiency of the banks.

According to Saunders (2014), liquidity risks are due to two reasons: the first is represented by liabilities side, wheredepositors withdraw of their deposits, and this requires sufficient liquidity to meet theserequirements. The second is due to assets side, where the bank should have sufficient liquidity togive required facilities to their borrowers.Vazquez and Federico (2012) analyzes the performance of about 11000 banks in the U.S. andEurope during the period from 2001 to 2009. The results show that banks with weaker structuralliquidity and higher leverage in the pre-crisis period were more likely to fail afterward. Thelikelihood of bank failure also increases with bank risk-taking.There should be adequacy of liquidity sources compared to present and future needs, andavailability of assets readily convertible to cask without undue loss. The fund managementpractices should ensure an institution is able to maintain a level of liquidity sufficient to meet itsfinancial obligations in a timely manner; and capable of quickly liquidating assets with minimal loss. Rudolf (2009) emphasizes that "the liquidity expresses the degree to which a bank is capable offulfilling its respective obligations". Banks makes money by mobilizing short-term deposits atlower interest rate, and lending or investing these funds in long-term at higher rates, so it ishazardous for banks mismatching their lending interest rate.

Bordeleau and Graham (2010) found a nonlinear association between liquidity and profitabilityin the United States of America (USA) and Canada for the period 1997–2009. Theydemonstrated that certain liquid assets enhance bank profitability. They further showed thatceteris paribus, there is a certain level beyond which keeping additional liquid assets reducesprofitability. The study also found evidence that the correlation between profitability and holdingliquid assets

hinges on the business model of the bank, economic conditions, and risks related tofinancing market complexities. These results are corroborated by Shahchera (2012) and Al-Khouri (2011). However, Said and Tumin (2011) found that liquidity and the magnitude of banksdo not have any impact on bank performance in a study of Malaysia and China, in agreementwith Shen, Kao, Chen and Yeh (2009).

According to Verma(2013), the essential part in the management of an organization's investments is to ensure that they bring in the expected returns. The concept of portfolio in financial literature relates to a combination of assets or investments that can be financial andor physical assets. Portfolio management is the effective and efficient mix of assets or investment for the purpose of minimizing risk and maximizing return. Liquidity is used to determine the financial health of a business or personal investment portfolio. Three liquidity ratios are often used for this purpose, namely the current ratio, the quick ratio and the capital ratio. Liquidity not only helps ensure that a person or business always has a reliable supply of cash close at hand, but it is a powerful tool when it comes to determining the financial health of future investments as well (Sangmi et. al. 2010).

Verma (2013), using small firms as a proxy for creditrationed firms, finds that when there is a monetary contraction, small firms react by increasing the amount of trade credit accepted. An organization with good asset quality, strong earnings and sufficient capital may fail if it is not maintaining adequate liquidity in its portfolios. A financial institution that delays in providing funds to its members look distrustful and unsafe; clients and other potential investors soon begin to lose confidence in such an organization (Mvula (2013). Organization's with liquidity problems loses a number of business opportunities; this place the firm at a competitive disadvantage. In the SACCOs subsector, liquidity management is an essential component of the overall risk management framework (Mvula, 2013). SACCOs should therefore manage liquidity in an applicable manner in order to safely run their business, maintain good relations with the stakeholders and avoid liquidity problem.

Podpiera and Weill (2007) investigated the causality between non-performing loans and cost efficiency in an attempt to examine whether either of these factors is the deep determinant of bank failures. By extending the granger causality model developed by Berger and DeYoung (1997) they applied GMM dynamic panel estimators on a panel of Czech banks between 1994

and 2005. The study provided clear support for the "bad management" hypothesis, according to which reduced cost efficiency fosters an increase in non-performing loans. No evidence was found in support for the "bad luck" hypothesis, which suggests that an accumulation of non-performing loans hampers cost efficiency.

Sufian (2009) in his study on Malaysian banking sector used total loans over total assets (LOANS/TA) as an indicator for bank liquidity position. The results revealed a positive and statistically significant relationship between LOANS/TA and efficiency scores. This implied that banks with higher loans-to-asset ratios tend to have higher efficiency scores. This he argued showed support for the efficient market hypothesis and that market power in loan markets may be the result of efficient operations. He further argued that; relatively efficient banks due to their ability to manage operations more productively, have lower production costs, which enable them to offer more reasonable loan terms and ultimately gaining larger market shares over inefficient banks.

Profitability is the most widely recognized measure of corporations' performance. Its measures are utilized to evaluate how well administrators are contributing to the organizations' aggregate capital and improving its assets performance. Profitability is, for the most part, the most imperative to the company's aggregate shareholders. Profits help in turbulent times against unfavorable conditions, for instance, misfortunes on credits, or misfortunes caused by unforeseen changes in loan fees (Mumanyi, 2014). Return on Equity (ROE) is the measure of net wage as a rate of shareholders' value. It measures a firm's profitability by revealing how much profit a company generates with the money shareholders have invested (Tarawneh, 2016). The higher the ratio, the better for a firm. A definitive measure of the quality of any monetary organization is not its advantage estimate, the quantity of branches, or the incapability of its gadgets rather the genuine measure, its return on unit holders.

Makori*et. al*. (2013) established that internal environment has a significant bearing on the performance of SACCOs and that with borrowed capital, SACCOs were able to increase their loan portfolios. Another study by Muchemi (2015) on effects of portfolio management strategies on financial performance of investment companies revealed that individual security selection strategies were not positively correlated to the leverage and yield spread strategies. It concluded that portfolio managers should periodically verify that investment performance reports are

accurate, policy compliance statements are followed and updated and that there should be random reviews of investment activities.

Liquidity refers to the ability of the firm to fulfill its obligations, mainly of depositors. According to Dang (2011) adequate level of liquidity is positively related with profitability. The most common financial ratios that reflect the liquidity position of a financial institution are customer deposit to total asset and total loan to customer deposits. Other scholars use different financial ratio to measure liquidity. Sangmi*et. al*. (2010) used cash to deposit ratio to measure the liquidity level of firms in Malaysia. However, the study conducted in China and Malaysia found that liquidity level of firms has no relationship with the performances (Tarawneh, 2016).

Kivuvo and Olweny (2014) examined the performance of SACCO's in Kenya using the Altiman Z Score Model of Corporate Bankruptcy. The study focused on predictor variables of bankruptcy and the financial stability of SACCO's. The study found that liquidity andleverage had significant impact of SACCO performance. According to the study, financial stability enhances economic performance.According to Majid (2003), liquidity is an essential component of the overall risk management framework. He further posits that organizations which have more liquid assets have more chances of performing better as they are able to realize cash at any point in time and meet their obligations and are also less exposed to liquidity risks.Liquidity in SACCOS is used to measure the extent to which the organization has cash to meet immediate and short term obligations. Liquidity enables an organization including SACCOS to ensure that it has a reliable supply of cash at hand but also to determine financial health of future investments (Muheebwa, 2018; Clementi, 2001).

2.4 Conceptual Framework

The goal of a conceptual framework is to categorize and describe concepts relevant to the study and map relationships among them. The study's structure is conceived as a functional relationship between a set of four predictor variables, which include capital adequacy, assets quality, operation efficiency and liquidity and financial performance as the dependent variable.

Independent variables **Dependent variable**

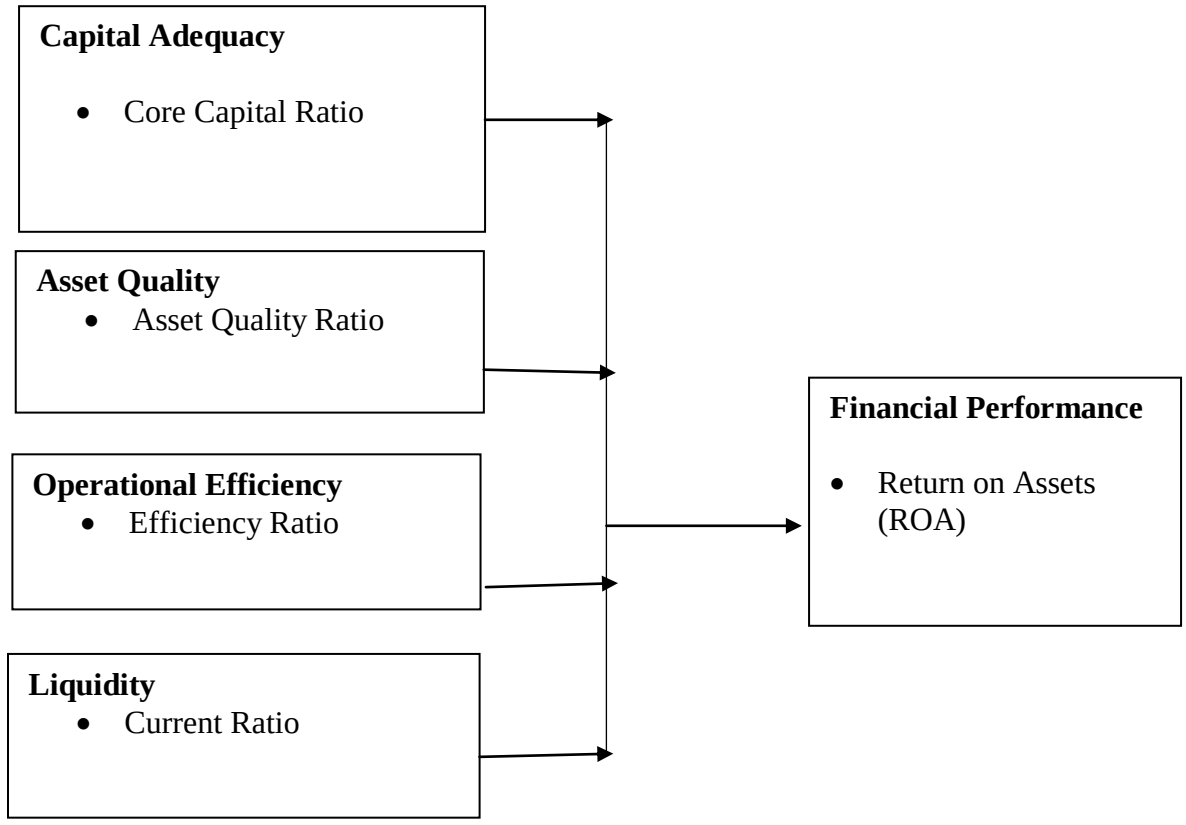

Figure 2.1: Conceptual Framework

As illustrated in Figure 2.1, the relationship between the independent and dependent variables are considered to be moderated by the nature of regulatory framework in Kenya. That is, the existing provisions dealing with minimum capital mobilization, regulations in asset ownership

and maintenance, corporate management issues such as corporate governance, and liquidity maintenance independently and collectively set the legislative scope within which all SACCOs must be operated and their financial performance determined.

The operationalization of variables is as shown in Table 2.1.

Table 2.1:Operationalization of Variables

Variables	**Definition**	**Measurement**	**Measurement scale**
Y	Financial performance	Return on assets =Net Income / Total Assets	Ratios
X_1	Capital adequacy	Core capital ratio = Total Capital / Risk Weighted Assets	Ratios
X_2	Asset quality	$\frac{Loan\ Im pairment\ Charges}{Total\ Assets}$	Ratios
X_3	Operation efficiency	Total expenses/ Total Revenue	Ratios
X_4	Liquidity	Current Assets/ Current Liabilities	Ratios

2.5 Research Gap

From the reviewed empirical literature, it was established that factors contributing to financial performance of SACCOs are multifaceted and depends on the operating environment of the specific economy. Despite this, the review shows gaps owing to few studies directed to addressing the unique SACCO situation in Kenya. Moreover, the studies evaluated just a handful of factors. Their studies are quite general and failed to address financial performance factors for SACCOs. In Kenya, thus, there is paucity of empirical studies on the drivers of financial performance of SACCOs. This study therefore seeks to establish the determinants of financial performance of deposit taking SACCOs, but within the geographical scope of Nairobi City County. The findings of this study will contribute to existing knowledge from other studies and may be useful in relevant policy formulation.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This section examines the research design, target study group, data gathering instrument, data gathering procedure, data analysis and processing, and measurement of study variables. It further analyses the various processes and approaches to be used when gathering and processing data.

3.2 Research design

Orodho (2012), explains that a research design is the plan, scheme, or outline for formulating answers to issues under study. Correlational research design wasadopted in this study. Correlational research designwas adopted as it is suited to in calculating the strength of a relationship between variables. This study seeks to establish causal relationship between variables (Saunders et al., 2009).The study method best suits this research as it aids in the determination of the association between determinants of financial performance in deposit taking Sacco's. The method expounds on the operational effect of the variables. The advantage of the design is that it clarifies a perceived problem at any given time appropriately. It is advisable to try to understand a problem first before finding a solution to it, such a case requires establishing their relationship(Saunders *et al.,* 2009).

3.3 Target population

Population refers to the aggregation of elements from which the sample is selected (Rubin &Babbie, 2015). Target population represents the collection of cases the researcher is interested and which they intend to generalize. The study targetedall the39deposits taking Sacco's (DTSs) in Nairobi City County licensed by SASRA as at end of 2018. Nairobi County was chosen as it is the financial headquarter of most of the deposit taking Sacco's in the country and most of them are also based in Nairobi County. The researcher focused on Saccos which werelicensed in terms of equipment, capital base, county coverage and skilled human resources. These was important as they can justify the financial performance of the Sacco's. The period covered 2014-2018.

3.4 Sampling Procedure

Sampling is the process of selecting units from accessible population to fairly generalize results to the target population (Orodho, 2009). A sample is a subset of a population (Kothari, 2004).The study conducted a census of all the 39deposit taking SACCOs in Nairobi County. The justification was on the basis that there are only a few firms. The years covered was from 2014-2018. The 5-year period provides a substantive duration and is representative

3.5 Research Instrument

The study used secondary quantitative data from SASRA registry comprising of audited financial statements and monthly reports submitted by the deposit-taking SACCOs. As Cooper and Schindler (2013) explained, secondary data is a useful qualitative technique for evaluating historical or contemporary confidential public records, reports, government documents and opinions. The study focused on the period 2014 to 2018. This is the period when most of the DTSs were licensed by SASRA and had submitted their returns and financial statements to the regulator.

The secondary data was collected using a data collection sheet (Appendix1). The researcher wrotewrite to the regulator (SASRA) through email requesting for permission to collect data. The researcher also visited the regulator's registry and collect the relevant data and information as envisaged by the study. Upon receipt of all the necessary data, the researcher performed data analysis as guided by the research objectives.

3.6 Diagnostic test

Due to the characteristics of time series data, it is important that the data be subjected to the relevant diagnostic test. The diagnostic tests was performed in order to assess the validity of the model (Everitt&Skrondal, 2015). The assessment was performed by checking the model's underlying statistical assumptions and the structure of the model in order to establish variables that are either poorly represented by the model (outliers) or that have relatively large effects on the regression model's prediction. The diagnostic test may be in form of graphs, informal quantitative analysis or formal statistical hypothesis test each of which provided guidance for further stages of a regression analysis. This study used test for Normality, Multicollinearity, Test

for Fixed or Random Effects, Wooldridge Test for Serial Correlation and Heteroscedasticity.A critical p value of 0.05 was used to reject or accept the hypothesis.

3.6.1 Multicollinearity

Multicollinearity refers to the condition whereby two or more of the explanatory variables in the multiple regression models have a high level of linear relation, that is, one explanatory variable can predict the others with a high degree of accuracy (Gujarati, 2013). In the presence of multicollinearity, the coefficient estimates of the multiple regressions may change erratically due to small changes in the model or the data. Multicollinearity does not reduce the predictive power or the reliability of the model, but only affects the computation of individual predictors. The Variance Inflation Factor and tolerance levels was used to measure the degree of multicollinearity. Variance inflation factor (VIF) assesses how much the variance of an estimated regression coefficient increases if the predictors are correlated. In the VIF analysis, VIF levels of more than 1 but less than 5 indicate little or no collinearity, levels of more than 5 but less than 10 indicate moderate multicollinearity and levels above 10 indicates high levels of correlation (Sosa-Escudero et al., 2017). The tolerance statistic is 1- R 2, where R 2 indicates the amount of variance in the dependent variable explained by the independent variables (Sosa-Escudero, Bera, & Rojas, 2017). Tolerance levels of less than 0.20 are considered to be causes for concern. Levels of less than 0.2 indicate multicollinearity (Sosa-Escudero et al., 2017). Gujarati (2013) suggests that where multicollinearity is present, the data should be transformed into the first difference.

3.6.2Wooldridge Test for Serial Correlation

Since the data involved both cross section and time-series, it raised the possibility of the existence of serial correlation. The presence of serial correlation indicates that the variables in the model violates the assumptions of the regression (Anderson *et al*., 2007). To cater for serial correlation, the Woodridge test for autocorrelation was employed. Serial correlation is a common problem experienced in panel data analysis and has to be accounted for in order to achieve the correct model specification. The null hypothesis of this test was that the data has no serial correlation. If the serial correlation was detected in the panel data, then the Feasible Generalized Least Squares (FGLS) estimation was adopted.

3.6.3 Normality Tests

Normality tests was conducted in order to determine whether the data was normally distributed and to evaluate the extent to which a random variable that underlies the data set was normally distributed (Razali&Wah, 2016). To test for normality the study employed the graphical method. According to Brooks (2008), a normal distribution is symmetric about its mean, while a skewed distribution will not be, but will have one tail longer than the other tail. If the residuals are normally distributed, the histogram should be bell-shaped.

3.6.4Hausman Specifications Test

When performing panel data analysis, the study determines whether to run a fixed effects model or a random effects model. Whereas the fixed effect model assumes firm specific intercepts and captures effects of those variables that are specific to each firm and constant over time, the random effect model assumed that there was a single common intercept and it varied from firm to firm in a random manner (Baltagi, 2005). Thus, for estimating the models, first it is important to determine whether there exists a correlation between the independent variables. If the correlation exists then a fixed effect model would give consistent results otherwise random effect model was efficient estimators and it was estimated by generalized least square (Teruel& Solano, 2007). To determine which of these two models was appropriate, both fixed and random effects was estimated. Hausman's specification test (1978) was used to determine whether fixed or random effect were to be used. If the null hypothesis that is E (μi/ xit) = 0 is accepted, then random effect were an efficient estimator otherwise in case of rejection of null hypothesis, fixed effect estimation gave better or efficient estimation of betas. If Hausman test rejects the null hypothesis, therefore decision was taken to use fixed effect model. STATA was used to estimate the above models.

3.6.5Heteroscedasticity

Since the data for this research is a cross-section of firms, this raises concerns about the existence of heteroscedasticity. The classical linear regression model(CLRM) assumes that the error term is homoskedastic, that is, it has constant variance. If the error variance is not constant, then there was heteroscedasticity in the data. Running a regression model without accounting for heteroscedasticity would lead to unbiased parameter estimates. To test for heteroscedasticity, the study used Modified Wald test for GroupWise heteroscedasticity. The null hypothesis of this

study was that the error variance is nothomoskedastic. If the null hypothesis is rejected and a conclusion made that heteroscedasticity is present in the panel data, then this would be accounted for by running a FGLS model.

3.7 Data Processing and Analysis

The study employed a dynamic panel data regression model. Panel data contain observations of multiple phenomena obtained over multiple time periods for the same firms or individuals (Hsiao, 2003). The descriptive statistics was presented in mean, median, standard deviation and proportions while the inferential statistics includes diagnostics tests, Pearson correlation and multiple linear regression model. The multiple linear regression models was used to measure the relationship between the independent variables and the dependent variable that are explained in the model. The study used the following regression equation shown below;

$$Yit = \beta_o + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \varepsilon_{it}$$

Where;

Y_{it}= Financial Performance of SACCOs*i* at time *t*

X_1 – Capital adequacy of Sacco *i* at time *t*

X_2 – Asset qualityof Sacco i at time t

X_3 – Operational efficiencyof Sacco i at time t

X_4 –Liquidityof Sacco i at time t

t = time period 2014, 2015, 2016, 2017 and 2018

β_o- Is a constant; the concept explaining the SACCOs performance given and it's the Y value when all the predictor values (X_1, X_2, X_3, and X_4) are zero.

β_1, β_2, β_3, and β_4, – Are constants regression coefficients representing the condition of the independent variables to the dependent variables.

ε_{it}= Error term where***i***is cross sectional and ***t*** is time identifier (to cater for residual or nuisance variables)

A critical p value of 0.05 was used to determine whether the overall model was significant or not. The individual regression coefficients was checked to determine whether the independent variables significantly affected the dependent variable.

3.8 Ethical Consideration

Permission to carry out the study was sought from institutional research and ethics committee (IREC) of KCA University. Participants was informed of the nature of the study before commencing the research.

CHAPTER FOUR

DATA ANALYSIS, FINDINGS AND DISCUSSION

4.1 Introduction

This chapter presents the patterns of the results and their analyses as to their relevance to the objectives and hypotheses. The findings are presented in tables and narrations as per the specific objectives. The chapter presents descriptive statistics, the pre-estimation and post-estimation tests. The chapter further presents the results of the models that was adopted in order to achieve the study's objective.

4.2 Descriptive Statistics

Table 4.1 shows the mean, minimum, and maximum values with standard deviation of the variablescapital adequacy, asset quality, operational efficiency, liquidity and ROA for the deposit taking Sacco's for the period 2014-2018.

Table 4.1: Descriptive Statistics

Variable		Mean	Std. Dev.	Min	Max
ROA	Overall	0.076	0.025	0.017	0.145
	Between		0.020	0.027	0.116
	Within		0.016	0.039	0.126
Capital Adequacy	Overall	0.439	0.215	0.140	0.811
	Between		0.120	0.210	0.744
	Within		0.179	0.051	0.847
Asset Quality	Overall	0.195	0.083	0.029	0.435
	Between		0.069	0.044	0.327
	Within		0.046	0.065	0.326
Operational Efficiency	Overall	0.526	0.138	0.320	0.800
	Between		0.075	0.384	0.692
	Within		0.117	0.248	0.826
Liquidity	Overall	0.376	0.125	0.130	0.580
	Between		0.069	0.202	0.472
	Within		0.105	0.074	0.606

Table 4.1 shows descriptive for panel data. The overall mean for Return on Assets was 0.076 with anoverall standard deviation of 0.025and a maximum ration of 0.145 and a minimum of

0.17. Capital adequacy had an overall meanof0.439with an overall standard deviation of 0.215. The maximumwas0.811and a minimum of 0.140. Asset Quality had an overall meanof0.195with an overall standard deviation of 0.083. The maximum was0.435and a minimum of 0.029. Operational Efficiency had an overall meanof0.526with an overall standard deviation of 0.138. The maximum was0.800and a minimum of 0.320. Liquidity had an overall meanof0.376with an overall standard deviation of 0.125. The maximum was0.580and a minimum of 0.130.

4.3 Trend Analysis

This section presents the analysis of the trends of the variables. The study conducted a trend analysis to establish the movement of the variables overtime in the deposit taking Sacco's in Nairobi County for the period 2014-2018.

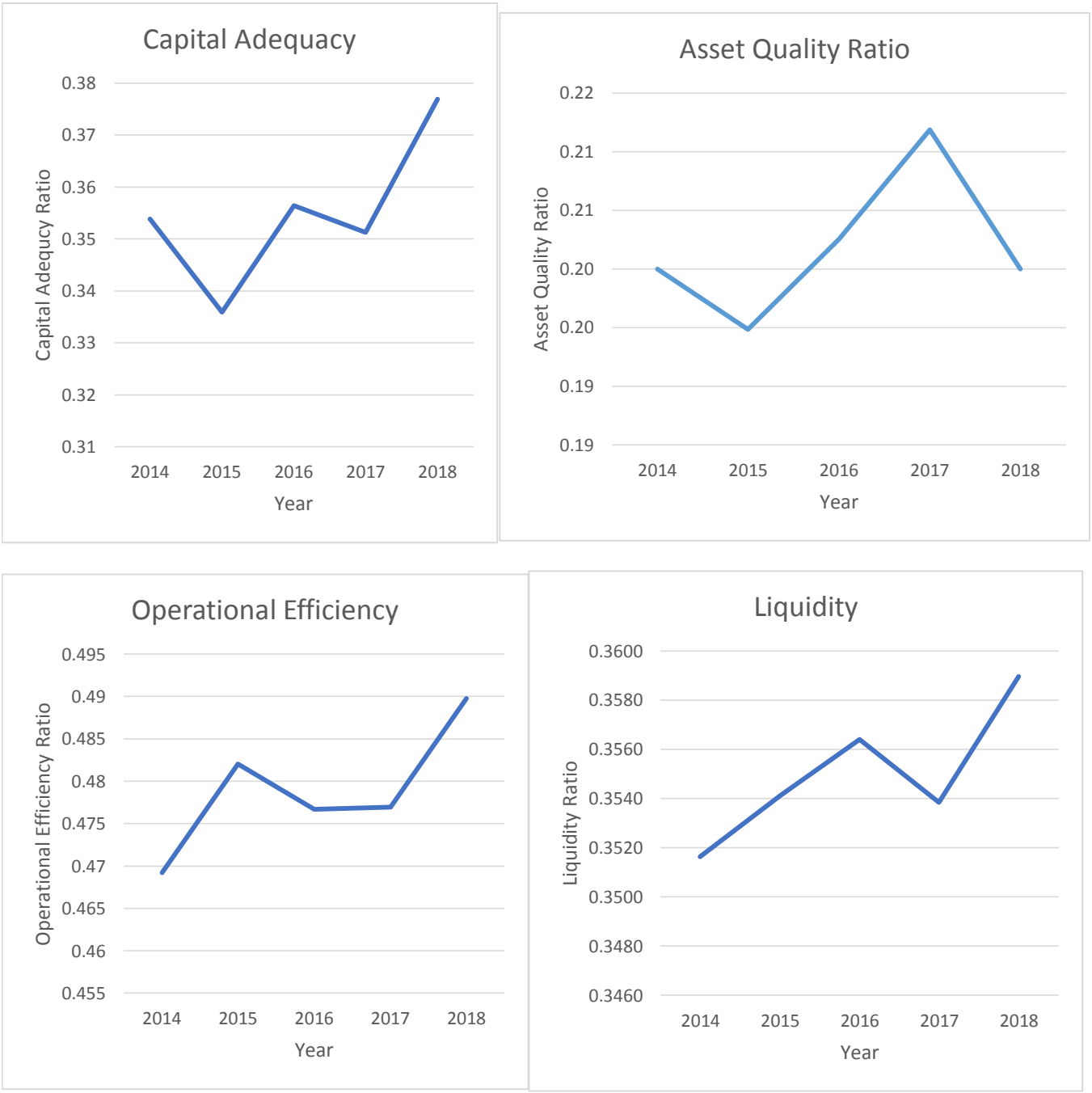

Figure 4.1: Trend Analysis

The trend line if Figure 4.1 shows that Capital Adequacy for the deposit taking Sacco'srecorded a slight drop from the year 2014 to 2015. The trend thereafter had a steady rise from 2016 until 2018. The trend shows an average rise in the level of capital adequacy in the deposit taking

Sacco's in Nairobi County.The results in Figure 4.1 shows that asset quality recorded a drop from 2014 to 2015 and rose from 2016 to the year 2017 where it had the highest record. The trend of asset quality in deposit taking Sacco's then significantly dropped in the year 2018.The results in Figure 4.1 shows thatoperational efficiency for the deposits taking Sacco's in Nairobi County had an increasing trend from the year 2014 to 2015. The trend stagnated until 2017 where there was a sharp rise until the year 2018 where it was the highest.The results in Figure 4.1 shows thatliquidity for the deposits taking Sacco's in Nairobi County had an increasing trend from the year 2014 to 2016. The trend then dropped slightly in 2017 but rose steadily in 2018 where it was the highest.

4.4 Diagnostics

The study conducted out different diagnostic tests to make sure that the postulations of Classical Linear Regression Model (CLRM) are not contravened. The pre-estimation tests conducted in this case are the multicollinearity test,Autocorrelation, Normality test, Hausman Specifications Test and Heteroskedasticity Test. The study has performed these tests to avoid spurious regression results.

4.4.1 Test for Multicollinearity

Multicollinearity was assessed in this study using the variance inflation factors (VIF). According to Field (2009) VIF values in excess of 10 is an indication of the presence of Multicollinearity. As shown in Table 4.2, the results of Operational Efficiency (1.850), Capital Adequacy (1.710) Liquidity (1.560), Asset Quality (1.030), revealed that there was no multicollinearity since all the values for VIF were less than 10.

Table 4.2: Multicollinearity

Variable	VIF	Tolerance
Operational Efficiency	1.850	0.541
Capital Adequacy	1.710	0.585
Liquidity	1.560	0.641
Asset Quality	1.030	0.971

4.4.2 Test for Autocorrelation

The study employed the Wooldridge test for autocorrelation to detect the existence of autocorrelation in the data, that is, whether or not the residual are serially correlated over time. The null hypothesis of this test was that there is a first order serial/autocorrelation existed in the data. The results in Table 4.3 shows that the P-value of the F-test is 0.5689 indicating that the F-test is not statistically significant at 5% level. Hence, the null hypothesis of no autocorrelation is supported and the study concludes that residuals are not auto correlated.

Table 4.3: Serial Correlation Tests

Wooldridge test for autocorrelation in panel data
H_0: no first-order autocorrelation
F(1, 38) = 0.330
Prob> F = 0.5689

4.4.3 Normality Test

To test for normality the study employed the graphical method. According to Brooks (2008), a normal distribution is symmetric about its mean, while a skewed distribution will not be, but will have one tail longer than the other tail. If the residuals are normally distributed, the histogram should be bell-shaped. Thus, the results in Figure 4.2 show that data is normally distributed since the histogram should be bell-shaped and the tails have the same length.A bell-shaped curve shows the normal distribution of the series.

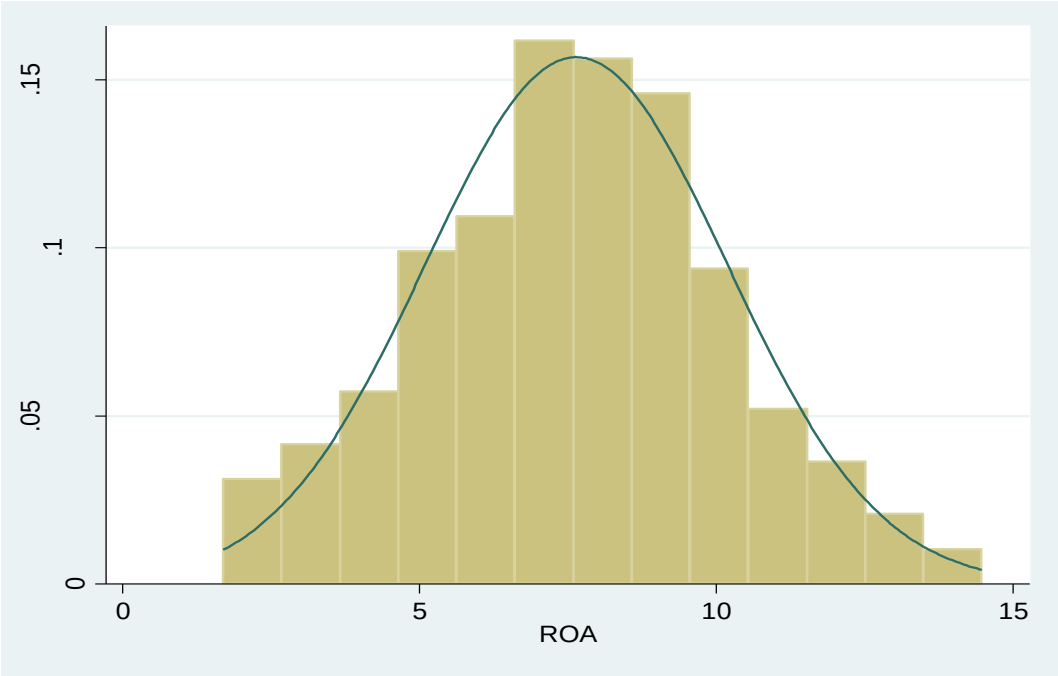

Figure 4.2: Normality Histogram

4.4.4HausmanSpecifications Test

When performing panel data analysis, one has to determine whether to run a random effects model or a fixed effects model (Baltagi, 2005). In order to make a decision on the most suitable model to use, both random and fixed effects estimate coefficients. The study used the Hausman's specification test (1978) to choose between fixed and random effect models. Table 4.4 shows the results of Hausman test.

Table 4.4: Hausman Test for ROA

	(b) fixed	**(B) random**	**(b-B) Difference**
Capital Adequacy	0.01	0.010541	.0000384
Asset Quality	0.01	0.042466	-0.03413
Operational Efficiency	0.06	0.06626	-0.0088
Liquidity	0.03	0.028195	0.005994
chi2(3)	4.84		
Prob>chi2	0.304		

The null hypothesis of the Hausman test is that the random effects model is preferred to the fixed effects model. For ROA model, Hausman test reveals a chi-square of 4.84 with a p-value of 0.304indicating that at 5 percent level, the chi-square value obtained is statistically insignificant.

Thus, the researcher does not reject the null hypothesis that random effects model is preferred to fixed effect model for ROA as suggested by Greene (2008). Therefore, the random effects model for ROA is therefore adopted.

4.4.4 Heteroskedasticity Test

Heteroscedasticity test was run in order to test whether the error terms are correlated across observation in the time series data. The error terms from a regression model must have a constant variance called Homoscedastic and to ensure whether the residuals meet this criterion of the study used the Modified Wald test for GroupWise heteroscedasticity where the null hypothesis under this test is that residuals are Homoscedastic. If the p-value is >0.05, there is constant variance. The null hypothesis was therefore not rejected at a critical p value of 0.05 since the reported value was 0.5255. Thus, the data did not suffer from statistically significant heteroscedasticity as shown in Table 4.5.

Table 4.5: Heteroskedasticity Test Results

Modified Wald test for Groupwise heteroscedasticity in fixed effect regression model
H0: sigma(i)^2 = sigma^2 for all i
chi2 (39) = 1.3e+06 Prob>chi2 = 0.325

4.5 Correlation

The study conducted correlation analysis for the various variables that are capital adequacy, asset quality, operational efficiency and liquidity on ROA in order to examine the nature of the statistical relationships between each pair of variables. Table 4.6 shows the correlation matrix of all the variables included in the study.

Table 4.6: Correlation Matrix Results

	ROA	Capital Adequacy	Asset Quality	Operational Efficiency	Liquidity
ROA	1.000				
Capital Adequacy	0.423*	1.000			
	0.000				
Asset Quality	0.338*	0.006	1.000		
	0.000	0.936			
Operational Efficiency	0.609*	0.607*	0.115	1.000	
	0.000	0.000	0.109		
Liquidity	0.363*	0.513*	-0.012	0.552*	1.000
	0.000	0.000	0.868	0.000	

The results in Table 4.2 show that Capital adequacy (0.423,0.000) had a positive and significance relationship on financial performance of deposit taking SACCOs in Nairobi County.Asset quality (0.338, 0.000) had a positive and significance relationship on financial performance of deposit taking SACCOs in Nairobi County.Operational efficiency (0.609, 0.000) had a positive and significance relationship on financial performance of deposit taking SACCOs in Nairobi County. Liquidity (0.363, 0.000) had a positive and significance relationship on financial performance of deposit taking SACCOs in Nairobi County. This implies that an increase in capital adequacy, asset quality, operational efficiency and liquidity led to an increase on financial performance of deposit taking SACCOs in Nairobi County.

4.6RegressionAnalysis

The study sought to carry out regression analysis to establish the statistical significance relationship between capital adequacy, asset quality, operational efficiency and liquidity on financial performance of deposit taking SACCOs. According to Chatterjee and Hadi (2015), regression analysis is a statistical process of estimating the relationship among variables. It includes many techniques for modeling and analyzing several variables, when the focus is on the relationship between a dependent and one or more independent variables. The results presented in Table 4.7.

Table 4.7: Regression Analysis

ROA	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
Capital Adequacy	0.011	0.007	1.520	0.129	0.003	0.024
Asset Quality	0.042	0.018	2.370	0.018	0.007	0.078
Operational Efficiency	0.066	0.011	5.910	0.000	0.044	0.088
Liquidity	0.028	0.011	2.570	0.010	0.007	0.050
_cons	0.018	0.006	2.990	0.003	0.006	0.030
R-sq: = 48.31						
F statistics = 144.57						
Prob> chi2 = 0.0000						

$Yit = 0.018+0.011X_1 + 0.042X_2+ 0.066X_3+ 0.028X_4$

Where;

Y_{it}= Financial Performance of SACCOs*i* at time *t*

X_1 – Capital adequacy of Sacco *i* at time *t*

X_2 – Asset quality of Sacco i at time t

X_3 – Operational efficiencyof Sacco i at time t

X_4 –Liquidityof Sacco i at time t

The results revealed that there was a positive but insignificant relationship betweenCapital Adequacy and financial performance of deposit taking SACCOs (β= 0.011, p=0.129).There was a positive and significant relationship between Asset Quality and financial performance of deposit taking SACCOs (β= 0.042, p=0.018).Operational Efficiency had apositive and significant relationship with financial performance of deposit taking SACCOs (β= 0.066, p=0.000). Lastly, Liquidity revealed a positive and significant relationship with financial performance of deposit taking SACCOs (β= 0.018, p=0.003).

The findings are consistent with Miriti(2014) who examined the relationship between capital adequacy and financial performance of commercial banks in Nigeria and results revealed a positive and significant relationship between capital adequacy and firm performance. Moreover,

the study revealed capital adequacy on commercial banks was less than 30%, which depicted that the amount of deposit received by commercial banks is rarely enough to meet the risk exposure and meet all liabilities on time. The results also agree with Sangmiet, al. (2010) who examined the relationship between capital adequacy and bank profitability through linearity approach and revealed a positive and significant relationship between capital adequacy and bank profitability. The results revealed that the higher the equity levels the better the prospects for superior performance

The findings are consistent with Muriuki (2014) who established that that asset quality is a strong determinant of financial institution performance because it influences the interest incomes while at the same time reduces the cost burden of bad debts management. The higher the non-performing assets to the gross or net assets book, the lower the asset quality and vice versa and therefore it means that the trade-off between asset quality and financial performance is expected to be negative. Dang (2011) observed that high level of cost inefficiency is highly attributable to the low profitability that results from inadequate organization of farmers into collective farmers' institutions that provide opportunities for risk sharing and improved bargaining power. Verma (2013), using small firms as a proxy for credit rationed firms, finds that when there is a monetary contraction, small firms react by increasing the amount of trade credit accepted. An organization with good asset quality, strong earnings and sufficient capital may fail if it is not maintaining adequate liquidity in its portfolios.

Another study by Muchemi (2015) on effects of portfolio management strategies on financial performance of investment companies revealed that individual security selection strategies were not positively correlated to the leverage and yield spread strategies. According to Dang (2011) adequate level of liquidity is positively related with profitability. The most common financial ratios that reflect the liquidity position of a financial institution are customer deposit to total asset and total loan to customer deposits.

4.7 Discussion of the Findings

The objective of the study was to establish the determinants of financial performance of deposit taking SACCOs in Nairobi County. The variables of interest were capital adequacy, asset quality, operational efficiency and liquidity on financial performance of deposit taking SACCOs. The pre-estimation tests conducted on multicollinearity test, Autocorrelation, Normality test,

HausmanSpecifications Test and Heteroskedasticity Test indicated that the underlying assumptions were fit for regression analysis.

The first objective of the study was to evaluate the influence of capital adequacy on financial performance of deposit taking SACCOs in Nairobi County. Correlation results showed that Capital adequacy (0.423, 0.000) had a positive and significance relationship on financial performance of deposit taking SACCOs in Nairobi County. Regression results revealed that there was a positive but insignificant relationship between capital adequacy and financial performance of deposit taking SACCOs (β= 0.011, p=0.129).This means that a unitary improvement in capital adequacy leads to an improvement in financial performance of deposit taking SACCOs in Nairobi County by 0.011units holding other factors constant.

The null hypothesis was therefore not rejected that capital adequacy has no significant effect on financial performance of deposit taking SACCOs in Nairobi County.The findingsconcur with Miriti(2014) whose study revealed a positive and significant relationship between capital adequacy and firm performance. Sangmiet. al. (2010) examined the relationship between capital adequacy and bank profitability through linearity approach and revealed a positive and significant relationship between capital adequacy and bank profitability. The results revealed that the higher the equity levels the better the prospects for superior performance.

The second objective of the study was to evaluate the influence of asset quality on financial performance of deposit taking SACCOs in Nairobi County.Correlation results showed that asset quality (0.338, 0.000) had a positive and significance relationship on financial performance of deposit taking SACCOs in Nairobi County. The regression results showed that there was a positive and significant relationship between asset quality and financial performance of deposit taking SACCOs (β= 0.042, p=0.018). This means that a unitary improvement in asset quality leads to an improvement in financial performance of deposit taking SACCOs in Nairobi County by 0.042units holding other factors constant.

The null hypothesis was therefore rejected and the alternative hypothesis was adopted that asset quality has a statistically significance effect on financial performance of deposit taking SACCOs in Nairobi County. The findings agree with Muriuki (2014) who noted that asset quality is a strong determinant of financial institution performance because it influences the interest incomes while at the same time reduces the cost burden of bad debts management. The higher the non-

performing assets to the gross or net assets book, the lower the asset quality and vice versa and therefore it means that the trade-off between asset quality and financial performance is expected to be negative.

The third objective of the study was to evaluate the influence of operational efficiency on financial performance of deposit taking SACCOs in Nairobi County. Results from correlation showed thatoperational efficiency (0.609, 0.000) had a positive and significance relationship on financial performance of deposit taking SACCOs in Nairobi County. Regression showed that operational efficiency had a positive and significant relationship with financial performance of deposit taking SACCOs (β= 0.066, p=0.000). This means that a unitary improvement in that operational efficiency leads to an improvement in financial performance of deposit taking SACCOs in Nairobi County by 0.066 units holding other factors constant.

The null hypothesis was therefore rejected and the alternative hypothesis was adopted that that operational efficiency has a statistically significance effect on financial performance of deposit taking SACCOs in Nairobi County. The findings agree with Dang (2011) who established that high level of cost inefficiency is highly attributable to the low profitability that results from inadequate organization of farmers into collective farmers' institutions that provide opportunities for risk sharing and improved bargaining power. Verma (2013) noted that with increased competition, efficiency and effectiveness have become the rule as firms constantly strive to improve the productivity of their employees. Many financial institutions have upgraded to computerized system such as Internet banking, telephone banking has become widespread and most firms offering these services quite comfortably.

The fourth objective of the study was to evaluate the influence of liquidity on financial performance of deposit taking SACCOs in Nairobi County.Correlation results showed that liquidity (0.363, 0.000) had a positive and significance relationship on financial performance of deposit taking SACCOs in Nairobi County. Regression results showed that liquidity revealed a positive and significant relationship with financial performance of deposit taking SACCOs (β= 0.018, p=0.003). This means that a unitary improvement in that liquidity leads to an improvement in financial performance of deposit taking SACCOs in Nairobi County by 0.018units holding other factors constant.

The null hypothesis was therefore rejected and the alternative hypothesis was adopted that that liquidity has a statistically significance effect on financial performance of deposit taking SACCOs in Nairobi County. The findings are in line with Mvula (2013) who established that In the SACCOs subsector, liquidity management is an essential component of the overall risk management framework. A financial institution that delays in providing funds to its members look distrustful and unsafe; clients and other potential investors soon begin to lose confidence in such an organization Organization's with liquidity problems loses a number of business opportunities; this place the firm at a competitive disadvantage.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter summarizes the study findings, its conclusions and recommendations, presented in consideration to the study objectives used to analyze the determinants of financial performance of deposit taking SACCOs in Nairobi County.

5.2 Summary of Findings

This study discovered a positive relationship between capital adequacy, asset quality, operational efficiency and liquidity on financial performance of deposit taking SACCOs.

5.2.1 Capital Adequacy and Financial Performance

Capital adequacy was found to be positively but insignificant related to financial performance of deposit taking SACCOs. The null hypothesis was not rejected that capital adequacy has no significant effect on financial performance of deposit taking SACCOs in Nairobi County. As per capital buffer theory, capital buffer is the excess capital a financial institution holds above the minimum capital required. The capital buffer theory implicates that financial institutions with low capital buffers attempt to rebuild appropriate capital buffer by raising capital and financial institutions with high capital buffers attempt to maintain their capital buffer. The primary factor affecting overall asset quality is the quality of the loan portfolio and the credit administration program.

5.2.2 Asset Quality and Financial Performance

Asset quality was found to be positively and significant related to financial performance of deposit taking SACCOs. The null hypothesis was therefore rejected and alternative hypothesis adopted that capital adequacy has a significant effect on financial performance of deposit taking SACCOs in Nairobi County.This implies that the lower the Nonperforming assets to gross/net assets ratio, the higher the asset quality and therefore positive trade-off between asset quality and financial performance. The study also found out that the basic factors affecting asset quality of a loan portfolio is the loan quality and credit administration program of the Sacco's.The asset quality rating thus reflects the quantity of existing and potential credit risk associated with the

loan and investment portfolios, other real estate owned, and other assets, as well as off-balance sheet transactions.

5.2.3 Operational Efficiencyand Financial Performance

Operational efficiency was found to be positively and significant related to financial performance of deposit taking SACCOs. The null hypothesis was therefore rejected and alternative hypothesis adopted that operational efficiency has a significant effect on financial performance of deposit taking SACCOs in Nairobi County.With increased competition, efficiency and effectiveness have become the rule as firms constantly strive to improve the productivity of their employees.

5.2.4 Liquidityand Financial Performance

Liquiditywas found to be positively and significant related to financial performance of deposit taking SACCOs. The null hypothesis was therefore rejected and alternative hypothesis adopted that liquidityhas a significant effect on financial performance of deposit taking SACCOs in Nairobi County. To remain viable, a financial institution must have enough liquid assets to meet its near-term obligations, such as withdrawals by depositors.

5.3 Conclusion

Based on the study findings the study concludes that there is a strong correlation between capital adequacy, asset quality, operational efficiency and liquidity on financial performance of deposit taking Sacco's. Thus there is need to maintain capital adequacy levels as indicated in the regulatory requirements so as to enhance financial performance and disperse the possibilities of financial misfortunes such financial shocks and bank runs and panics. Continued maintenance of capital adequacy ratios will ensure that there are no extra costs which are incurred by SACCO's to meet the minimum capital adequacy requirements.

All SACCO's should partner with credit reference bureaus so as to support their credit evaluation process and ultimately attain financial performance. Through credit evaluation process the levels of information asymmetry will be breached and asset quality improved which will ultimately enhance financial performance. Thirdly, all SACCO's need to continuously evaluate their existing management procedures and mitigate possibilities of resources underutilization and pilferage. Through this process there are more prospects of minimizing operational costs and ultimately attain superior financial performance.

Finally, there is need to maintain liquidity requirements and ensure that those SACCO's struggling to achieve the set liquidity requirements attains them. Through this there are prospects for superior performance as well as engagement on investment opportunities which increase shareholders returns.The results showed that there had been a sustained increase in operational efficiency over the years. This also implied that as more and more DTSs complied with prudential regulations, their efficiency improved.

5.4 Recommendations

Based on the findings, the study made recommendations as below

5.4.1 Capital Adequacy and Financial Performance

Based on the study findings the study recommended that all SACCO's should adopt capital control measures to adhere on capital adequacy ratios to the regulated and acceptable levels. Adoption of this management practice will ensure performance of SACCO's and improve investor's confidence since all will be assured of SACCO's going concern status

5.4.2 Asset Quality and Financial Performance

The study recommends that SACCO's should continuously develop customized loan products which will diversify their sources of income and minimize operational costs. Further, there is need for increased customer screening prior to loan allocation, through this the levels of information asymmetry will be minimized. Innovative products development and departure from traditional SACCO products will increase amount of revenue and ultimately achieve superior levels of financial performance.

5.4.3 Operational Efficiency and Financial Performance

The study recommends that the management should enhance operational efficiency by adoption of various strategic capabilities for example use of alternative marketing platforms to catch new market segments, use of alternative methods of making deposits and withdrawals so as to increase levels of financial deepening and inclusion. Moreover, there is need to sensitize all employees on the desire to embrace high standards of customer relationship management and this will minimize chances of customer's attrition and enhance loyalty

5.4.4 Liquidityand Financial Performance

The study recommends that there is need to maintain and foster to achieve optimal liquidity standards which are set by SACCO regulators. Through attainment of these standards investors confidence will be increased and eliminate chances of bank panic, bank runs and capital flight. Due to this SACCO's will be in a position to provide financial services as stipulated in their vision and mission policies.

5.5 Limitations of the study

The study's findings were only applicable to deposit taking Sacco's in Nairobi County only and so cannot be generalized to other financial institutions. The variables of this research are dynamic based on financial factors and there could be more significant non-financial factors. These findings therefore may not show the real impact of the variables of Sacco'sfinancial performance.

5.6 Suggestions for Further Studies

The current study examined the effect of firm characteristics on financial performance of SACCO's in Kenya. There is need for a similar study to be carried out to examine firm characteristic effect on performance of all SACCO's and for a long period oftime more so to examine both short run and long run relationship between study variables. Secondly, there is need to evaluate the effect of sensitivity on financial performance amongst SACCO's in Kenya. Further, survival analysis ought to be employed to examine the chances of a SACCO collapsing given the prevailing conditions in the market. SACCO's performance can be attributed to other factors in addition to the current factors including financial pattern adopted, income diversification strategies adopted, innovative approaches incorporated to enhance deposit and withdrawals, macroeconomic characteristics and prevailing political temperatures.

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APPENDICES

Appendix I: Data Collection Template

Sacco	Year	Tier 1 Capital	Tier 2 Capital	Risk Weighted Assets	Loan Impairment Charges	Total Assets	Expenses	Revenue	Current Assets	Current Liabilities	ROA
A	2018										
A	2017										
A	2016										
A	2015										
A	2014										