EFFECT OF INTERNAL FACTORS ON FINANCIAL PERFORMANCE OF DEPOSIT TAKING SAVINGS AND CREDIT SOCIETIES IN KENYA

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Effect of Internal Factors on Financial Performance of Deposit Taking Savings and Credit Societies in Kenya

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DECLARATION

This thesis is my original work and has not been presented for a degree in any other university

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DEDICATION

I dedicate this thesis to God the almighty for being the light of my life, to my late father Jeremiah C. Barus who never lived long enough to see the academic achievements of his children, my lovely mum Rael Barus, my wonderful family my husband Nixon Kibiwott, my lovely children Faith Jerop, Mercy Jemeli, Joyline Jebet and Patience Jeptum, for their great sacrifice, encouragement, support and prayers they made especially during the process of my studies at Jomo Kenyatta University of Agriculture and Technology. Thank you very much for always being there for me.

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ACRONYMS AND ABBREVIATIONS

ACCOSCA	Africa in Confederation of Cooperative Savings and Credit Association
ATM	Automated Teller Machines
CAMEL	Capital adequacy, Asset quality, Management efficiency, Earnings ability and Liquidity
CAMELS	Capital adequacy, Asset quality, Management efficiency Earnings ability, Liquidity and Sensitivity to market risk
CCD	Commission of Cooperative Development
CRAR	Capital-to-Risk Weighted Assets Ratio
DTS's	Deposit Taking SACCOs
EAC	East Africa Community
EALA	East Africa Legislative Assembly
EPS	Earnings Per Share
FDIC	Federal Deposit Insurance Corporation
FSD	Financial Service Deepening
GDP	Gross Domestic Product
GFSR	Global Financial Stability Report
GIS	Generalized least Squares
KNL	Kenya National Legislation
NPA	Non-Performing Assets

PEARLS	Protection, Effective financial structure, Asset quality, Rates of return and costs, and Liquidity and Signs of growth.
ROA	Return on Asset
SACCOs	Savings and Credit Co-operative Societies
SAP's	Structural Adjusted Programs
SASRA	Sacco Society Regulatory Authority
SCP	Structure-Conduct-Performance
UFIRS	Uniform Financial Institution Rating System
US$	US Dollar
VIF	Variance Inflation Factor
WOCCU	World Council of Credit Union

OPERATIONAL DEFINITION OF TERMS

Asset Quality: is a factor that determines the state of an organization. Examples of asset qualities of a micro finance institute are; loans, securities, off- balance sheet items, cash, due from accounts, premises and so forth (Schaeck, 2008).

Camel Standards: It is a standard measure of Sacco's performance based on capital, asset quality, management efficiency, earnings ability and liquidity. It is also an abbreviation where C represents capital adequacy, A represents asset quality, M represents management efficiency, E represents earnings ability and L represents Liquidity (Mathuva, 2016).

Capital Adequacy: Capital is adequate either when it decreases risk of collapse in the future to some level that is predetermined or when a bank pays enough premiums to an insurer per the expected losses (Maisel, 1979).

Deposit Taking SACCO: SACCOs that conduct business of savings and credit and in addition does business of accepting or withdrawing money on daily basis across the counter (Government of Kenya, 2008).

Earning Ability: refers to the firms' capability to maintain and increase their net worth through earnings from operations (Kongiri, 2012).

Financial Performance: is a measure of how well firm use their assets from its primary mode of business to generate revenues. It measures the financial health of an organization. The common indicator of financial performance is return on assets. Financial performance guides management on the strategies and policies to adopt to improve sustainability of the organization (Almazari, 2011).

Institutional Capital:	It means disclosed reserves, retained earnings, grants and donations all of which are not meant to be expended unless on liquidation of SACCO Society (SACCO Societies Regulations act, 2010).
Internal Factors:	Internal factors in firms show how management strategies of business can influence on judgment concerning firm's growth. The world is in a competition, the environment is constantly changing thus there is need for continual development of the internal factors for growth. In financial management, some of the internal factors that firms should consider include; asset quality, capital adequacy, earning ability, liquidity and management efficiency.
Liquidity:	the ability of financial institutions to fund increases in asset holdings and meet obligations as they fall due (CBK, 2010). It is also the ability of the institution to own liquid assets. For the purposes of the regulations, liquid assets include, Notes and Coins, Balances held in banks, treasury bills and treasury bonds, deposits in other SACCOs, other assets as specified by the Authority (Government of Kenya, 2008).
Management Efficiency:	refers to a monetary recommendation that could result in funds being used more efficiently. The recommendation may include; savings from such items as reprogramming or recapture of unliquidated obligations; more efficient contract negotiations; and reduction or elimination of payments, costs, or expenses that would be incurred by the Agency (Grier, 2007).
Pearls Standards:	These are abbreviations where P represents Protection of Assets, E represents Effective capital structure, A

represents asset quality, R represents rate of returns, L represents liquidity ratios and S represents signs of growth (Berhane, 2013).

Performance: Financial results as measured by SACCOs income (Turnover) and the return on assets (Olando, 2013).

Regulations: The guidelines that provide minimum operational standards required of a deposit taking SACCO Society (Government of Kenya, 2008).

Return on Asset (ROA): reflects the ability of management to generate profits from the assets of the firm; it is considered a better metric of the two because it takes into account the assets used to support business activities (Oyugi, 2014).

Return on Equity (ROE): focuses on returns to shareholders and may sometimes be manipulated to falsely portray financial soundness (Penman & Penman, 2007).

SACCO: A financial institution that is owned and controlled by its members and operated for the purposes of promoting thrift, providing credit at low interest rates and providing other financial services to its members (Makori, Munene and Muturi, 2013).

Sensitivity to Market Risk: Sensitivity to market risk is described as the degree to which changes in interest rates and inflation can adversely affect financial performance. Sensitivity to market risk stands for financial system it covers an assessment of exposure to market risk. The rating system is designed to take into account and reflect all significant financial and operational factors examiners assess in their evaluation of an institutions performance. Institutions are rated using a combination of specific financial ratios and examiner qualitative

judgments the possibility of an investor to experience losses due to factors that affect the overall financial market (Brockett, Cooper, Golden, Rousseau & Wang, 1997).

ABSTRACT

The deposit taking saving and credit societies remains a significant player in the provision of financial services to the Kenya household and small business segment. DT-SACCOs are financial institutions which offer similar products like banks and most of them were formed long time ago but their performance is wanting compared to commercial banks and other financial institutions. Their performance and growth in those terms also varies among different DT-SACCOs. Further, there are less previous studies investigating the effect of internal factors on financial performance of deposit taking savings and credit societies in Kenya. The purpose of this study was to establish the effect of internal factors on financial performance of savings and credit societies in Kenya. Specifically, the study sought to; establish the effect of capital adequacy on the financial performance of savings and credit societies in Kenya; determine the effect of asset quality on the financial performance of savings and credit societies in Kenya; evaluate the effect of management efficiency on financial performance of deposit taking savings and credit societies in Kenya; establish the effect of earnings ability on financial performance of deposit taking savings and credit societies in Kenya; determine the effect of liquidity on financial performance of deposit taking savings and credit societies in Kenya; and establish the moderating effect of sensitivity to market risk on the relationship between internal factors and financial performance of deposit taking savings and credit societies in Kenya. The study employed a quasi-experimental design. The target population was 83 registered deposit taking SACCOs in Kenya that had been in operation for the last five years and with audited financial statement. The sample size for the study was all 83 SACCOs that have remained in existence between 2012-2016. Census methodology was used in this study. Both primary and secondary sources of data were employed. Multiple linear regression models were used to analyze the data using statistical package for the social sciences (SPSS) and STATA. A pilot study was conducted to measure the research instruments reliability and validity. Descriptive and inferential analyses were used to analyze the data. The data was presented using tables, figures and graphs. The study found out that capital adequacy and financial performance of SACCOs are positively and significantly related (r^2=0.423, p=0.000), asset quality and financial performance of SACCOs are positively and significantly related (r^2=0.400, p=0.004), earnings ability and financial performance of SACCOs are positively and significantly related (r^2=0.359, p=0.000), liquidity and financial performance of SACCOs are positively and significantly related (r^2=0.0012, p=0.000). However, the relationship between management efficiency and financial performance of SACCOs was found to be insignificant (p=0.994). Based on the study findings, the study concluded that all the internal factors except management efficiency had positive significant relationship with the financial performance of deposit taking SACCOs in Kenya. Further, the study concluded that sensitivity to market risk had a significant moderating effect on the interaction between the internal factors (except management efficiency) and financial performance of SACCOs in Kenya. The study recommended that deposit taking SACCOs should adopt efficient systems to improve their capital adequacy, asset quality, management efficiency, earnings ability and liquidity.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

In the world co-operative movement was initiated in the year 1844 in Rochdale village, Manchester in England, since then it has spread globally as a socioeconomic movement with its unique identity, history and objective (Tache, 2006). In 1864 the first credit union was established by Raiffeisen in German to facilitate the needs of the rural people which were deemed nonbankable owing to very few, fluctuating cash and shortages of human capital (WOCCU, 2008). Since that period there has been a rapid growth in the cooperative movement worldwide. Tache (2006), reveals that the cooperative movement spread all over Europe, Northern America, Latin America and Asia from 1900 to 1930 and thereafter to Africa through Ghana by a catholic Bishop.

Savings and credit cooperative societies are autonomous association of persons united voluntarily to meet their common economic and social needs through jointly owned and democratically controlled enterprises, which operate under the principles of cooperative movement (ICA, 2009). They are guided by the values of self-help, honesty, openness, self-responsibility, social-responsibility, democracy, quality, equity, solidarity, mutual caring, efficiency, transparency and accountability (ICA, 2009). The financial health of the financial system has important role in the country economy its failure can disrupt economic development of the country (Das & Ghosh, 2007).

Globally the cooperative origin is dated back to 1852 when Herman Frank consolidated two pilot projects in Germany into credit unions. In 1864, Raiffeisen founded the first rural credit union in rural Germany to cater for the needs of the rural poor. The rural communities were considered to be very small, with seasonal flows of cash and limited human resources hence not bankable (WOCCU, 2008). Since then, there has been a rapid growth in the cooperative movement worldwide based on the organizational methods of Raiffeisen.

Savings and credit cooperative in developed countries tends to access supply of funding that is more stable and less responsive to monetary policy and market risk,

they also tends to offer comparatively lower fees than other types of commercial banks, which not only helps to increase access of credit to the poor, but reduces the cost of remittance transfers (Schenk, 2007, WOCCU, 2009).

The first ever SACCO was established in 1844 by Robert Owen (John, 2002). SACCOs belong to a group of cooperatives that are commonly called Raiffeisen cooperatives due to the German originator of this movement in the 1800's (Tache, 2006). SACCOs are guided by seven principles as stipulated by the International Cooperative Alliance (ICA). This includes; Open and voluntary membership, member economic participation, independence and autonomy, democratic member control, education, training and information, Concern for Community and Cooperation among Cooperatives.

IMF indicates that savings and credit co-operative movement in developed countries tend to be more stable than commercial banks, mainly during financial crisis, as their investment patterns tend to be less speculative and returns are therefore less volatile (Hesse & Cihak, 2007). During economic crisis, research indicate that cooperative finance fare better than investor-owned savings and loans institutions, as they pursue more conservative investment policies (Chaddad & Cook, 2004).

SACCOs are expected to give better and cheaper services to its members as compared to the main stream banks because SACCOs understands the needs of the members given that they are the owners (Wanyama, Develtere & Pollet, 2008). Services offered by SACCOs include normal loans, emergency loans, school fees loans and front office services for example; payment of salaries, salary advances, bank cheques, safe keeping of documents, and ATMs (Ngaira, 2011).

According to ICA (2009), Rochdale pioneers were the founder of the contemporary co-operative movement in Lancashire England, to deliver cheap alternative to poor-quality and adulterated and provisions of food by use of surplus so as to benefit the community. Subsequently, the co-operative movement has succeeded spreading throughout the world and incorporating all parts of the economy. The principles that supported cooperatives ways of doing trade is still recognized today as the basis upon

which all co-operatives operate, however, the principles has been looked over and updated.

In the United States, Benjamin Franklin started the first cooperative business, a mutual insurance company, in 1752. Agricultural cooperatives played an important role in the development of cooperatives in the U.S. with the first cooperative beginning operations in 1810 in dairy and cheese making. From 1810 until 1887, cooperatives were founded in many sectors of agriculture, including marketing, irrigation, fruit marketing, and cotton ginning, among others. The Grange, one of the first farm organizations in the U.S., organized cooperative development efforts while other farm groups like the American Farm Bureau and National Farmers Union were also instrumental to developing agricultural cooperatives. In fact, Farm Bureau helped to establish Growmark and Nationwide Insurance while National Farmers Union helped to establish the largest agricultural cooperative in the U.S. (ICA, 2009),

Globally, the sector has 1 billion membership, it is estimated that co-operatives has employed 250 million people all over the world, with 2.2 trillion US Dollars profits, while providing infrastructure and services that the society needs to flourish. 2015 Global statistical report recorded a total of 57,000 savings and credit unions (SACCOs), spread across 105 countries and 6 continents. The world savings and credit union system combine savings of 1.5 trillion US$, asset base of 1.8 trillion US$ out of which 1.2 trillion US$ constitutes the loan portfolio. The average worldwide penetration rate of the Credit Union system stood at 8.2 percent (World Co-operative Monitor, 2014).

Globally, efficiency of community banks were analyzed in the United States (US) using data from year-end 2006-2008, multivariate discriminant model was used based on the CAMEL(S) model to differentiate between low and high efficiency community banks by using the efficiency ratio as the independent variable. The results on the significance of the individual CAMEL components provided mixed results for different periods apart from the sensitivity to market risk which was found to be statistically insignificant (Hays, Stephen & Arthur, 2009).

In India, performance of Indian Banking sector through its effect on the asset value was analyzed. The study recognized the key factors such as the risk management, Non-Performing Assets (NPA) levels, effective cost management and financial inclusion. Moreover, Indian performance of different private and public sectors banks over the period 2000-2011 were analyzed using the CAMEL approach and it was established that the private sector banks were at the top with their performance being the best in terms of soundness (Chaudhry & Singh, 2012).

In Africa research indicates that approximately seven per cent of the Africa population is affiliated to cooperatives sector also specific social protection mechanisms associated with cooperatives in Africa are very limited (Pollet, 2009). Growth of SACCOs was experienced to the extent that in 1965, Africa Federation of Cooperative Societies Savings and Credit Association (ACCOSSCA) was formed with the principle objective of offering SACCO insurance, education to members and promoting SACCO principles (Ng'ombe & Mikwamba, 2004). There are 28 countries in the continent of Africa with established SACCOs with membership of 16 million which is 8% of the whole world membership, with savings of 62% and loans of 65% being 3rd after Asia and North America which has 36 million and 102 million respectively. Africa mobilized 0.4% of the worldwide savings of US$ 1.1 trillion and 0.4% of international loans given to members standing at US$ 912 billion (WOCCU, 2009).

In Malaysia, cooperatives movement operate under democratic system, flexible and have participatory management system which contribute to economic development of a country. They enhance community participation and identity and also social organization as well as alleviating poverty, creating employment, improving country economic growth and development. However, cooperatives in Malaysia are facing more challenges including lack of capital, poor cooperative governance, wanting financial performance, inefficient management and non-compliance with cooperative societies Act of 1993 and its related legislations (Tehrani et al 2014).

In Africa, performance of the South African banking sector was analyzed from 1994 and it was found that all bank specific variables were statistically significant at conventional level for both Return on Assets (ROA) and Return on Equity (ROE)

equations. Study shows that asset quality, management efficiency, and liquidity had positive relationship with both measures of bank performance, which is significant with priori theoretical expectations.

However, the leverage ratio, as measure of capital adequacy, shows a surprising insignificant relationship with ROA, whereas its relationship with ROE is positively significant as expected (Ifeacho & Ngalawa, 2014). In Ghana CAMEL rating system was used to test the performance of local and foreign banks results of the study indicated that not all the CAMEL variables affect banks financial performance in Ghana in terms of ROA and ROE (Ansah, 2015).

In East Africa, the East African Legislative Assembly (EALA) passed the East African Community Cooperative Societies bill, 2014 to provide a legal framework for cooperatives societies in the community and to provide for other related matters encompassing rights and duties of members' organs of cooperative society's assets and funds of societies, audits and inspections and miscellaneous provisions (EACCS Act, 2014). In Ethiopia Zerfeshewa (2010), investigated the determinants of SACCO performance the study established that the educational level of members and officials as well as the regulations posed the greatest impediment to the performance of SACCOs.

The Kenyan National Legislations (KNL) on cooperatives requires alignment with EACCS bill, 2014. The bill is based on the understanding that each state shall undertake to encourage the efficient use of resources and to promote the development of private sector organizations which are engaged in all types of economic activities, such as the national chambers of commerce and industry, confederations and associations of industry, agriculture among others economic activities. It also recognizes the responsibility of state parties to enact national legislations to govern the operations of co-operative societies within the party states.

1.1.1 Deposit Taking SACCOs in Kenya

In Kenya, the first SACCO (Lumbwa, SACCO) was established by white settlers in 1908, with its main aim of enhancing agricultural activities in order to take advantage of economies of scale (KUSCCO, 2006). The SACCO was formed to enable the

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members bargain for better fertilizer and seeds prizes (Chebor, 2008). At the beginning of 2011 there were 83 deposits taking SACCOs that had complied and registered with SASRA, by 2016 there were a total of 245 SACCOs out of which a total of 164 DTSS were licensed for deposit-taking business, the remaining 81 DTSS were required by the law to have achieved the minimum licensing threshold and 83 SACCOs had audited published accounts from 2011 to 2015.

The strict adherence to the compliance standards revealed the inability of some of the SACCOs to maintain the minimum licensing requirements, five SACCOs which were found to be noncompliant had their licenses revoked during year 2015, and they ceased to take deposits from the public, three SACCOs had their licenses revoked in 2014. In addition, five other SACCOs were allowed to continue operating on conditionally restricted licenses during the year 2015 in an effort by the authority to tune them to compliance status. The nature of SACCOs has made it an area of keen interest in developing countries more than in developed countries (SASRA, 2015).

SACCO activities contribute 43% of the Gross Domestic Product (GDP). The total assets, total deposits and gross loans of the deposit taking SACCO societies grew by 13.7%, 15.3% and 13.0% to reach Kshs 342.8 billion, Kshs 258.1 billion and Kshs 237.4 billion respectively, hence underscoring the continued role of SACCOs in the mobilization of savings and the provision of credit to Kenyans (SASRA, 2015). However, net loans at the end of 2015 amounted to Kshs 251 billion and constituted 73.2% of the total asset base of savings and credit societies. SACCOs traditionally rely on their ability to mobilize savings from its members (SASRA, 2015).

In Kenya co-operative movement was firmly under the reigns of the government as a motivation, it was given donor support for capitalization and personnel development. Private traders were not allowed to compete with co-operatives, this era come to an end as more countries adopted reform under the Structural Adjusted Programs (SAP's) aimed at enhancing growth through free market economic model. Under session paper No. 6 of 1997 there were development of commercially autonomous member based cooperative organization which were democratically and professionally managed, self-controlled and self-reliant businesses, 50% of the population derive their livelihood

from cooperative that was approximately 250,000 Kenyans are employed or gain most of the income from cooperative (ILO, 2009).

In Kenya, SACCOs were formerly controlled by the government through the co-operative ordinance act passed in 1945. In 1997, the act was amended to Co-operative Societies Act (CSA) withdrawing much of state control over the co-operative movement and empowered co-operatives to become autonomous, self-reliant, self-controlled and commercially viable institutions. The government took up the role of facilitating autonomy and general regulation, further amendments were effected in 2004 through the co-operative society's amendment Act of 2004 to re-enforce state regulation of the co-operative movement through the office of the Commissioner for Co-operatives Development (CCD). Further, the Act 2004 was amended to SACCO Societies Regulatory Authority SASRA (2008), which was inaugurated in 2009 charged with the prime responsibility to license and supervise deposit taking SACCOs which defined a paradigm shift moment to the SACCO industry in Kenya.

The Act required that SACCOs maintain Kshs. 10 million capital at all times, return on capital adequacy is to be filed with SASRA every month before the 15th day of the following month. SASRA also requires liquidity ratio of not less than 15% be maintained by all licensed SACCOs (Manyuanda, 2014). According to SASRA (2008), the core capital of SACCOs consists of fully paid up members shares, retained earnings, disclosed reserves, grants and donations all of which are not meant to be expended unless on liquidation of the SACCO society.

Capital adequacy indicates whether SACCOs maintain enough capital to absorb unexpected losses, asset quality determines the healthiness of financial institutions against loss of value in the assets as asset impairment risks the solvency of the financial institutions, management efficiency assesses the efficiency of management in generating business and in maximizing financial performance, earnings ability focuses on how financial institutions make profit, sustainability and growth of those earnings in the future, liquidity measures determines the ability of the business to meet its financial obligations as and when they fall due without disrupting any of its activities (Reddy, 2012). Sensitivity to market risk determines the degree to which changes in

interest rate, inflation, commodity pricing adversely affect SACCOs performance and it places on quantity of risk and risk management with respect to SACCOs activities.

Mvula (2013) enumerates inadequate capital, poor asset quality, poor governance, poor profitability, poor liquidity and noncompliance as the main bottlenecks to deposit taking savings and credit societies performance which target low income earners and puts them at a greater risk compared to mainstream commercial banks. Kenya is regarded as the leading country in Africa in co-operative movement and account for a significant portion of the financial sector (ACCOSCA, 2013). SACCOs have ventured into agriculture, banking, credit, agro-processing and storage sectors marketing, dairy, fishing and housing sectors (Okundi, 2011).

Olweny and Shipo (2011) studied and adopted the CAMEL model, analyzed the determinants of bank failures in Kenya, they found out that asset quality and liquidity are positive determinants of bank failures. Ongore and Kusa (2013) concluded that the financial performance of commercial banks in Kenya is driven mainly by board and management decisions, while macroeconomic factors have insignificant effect.

1.1.2. SACCO Regulatory Framework in Kenya

According to cooperative society act, (1966) state was empowered to get involved in day to day management of cooperative, people wishing to join cooperative were guided by their social economic problems, registration, constitution, regulation and other matters incidental to the operations of cooperative societies. The act was revised in 1997 with the view of ushering in the spirit of liberalization. In 1st June 1998, the cooperative society Act, 1966 presumed that cooperative had matured to a state where they could regulate themselves democratically and professionally management, thus making them autonomous, self-reliant and viable, controlled by members and ensuring that it operates within the international cooperative principle.

The sacco society regulatory authority provides an enabling legal and regulatory framework to the all sacco societies to enable them remain competitive in the financial market and build confidence in their members by offering them efficient and effective services (Ademba, 2011). Further the objective of this regulation is to protect the

interests of sacco members and promise public confidence thus ensuring sustainability of the Sacco sector as a key player in the country economy.

Kilonzi (2012) carried out a study to establish the impact of SASRA regulations on the financial performance of SACCOs in Kenya. Sample size was 30 SACCOs for the period between 2008 to 2011.Financial performance was measured between ROA and ROE. Factors used for regression against ROA and ROE were capital to total assets, liquidity and management efficiency (Earning Assets/ Total Assets). Regressions were run for 2008 to 2009, 2010 to 2011and coefficients compared for differences which may have been caused by the regulations being applicable from 2010. The findings were that ROE, capital ratio, liquidity and management efficiency improved in the second period in comparison to the first. The sample size was biased as it included SACCOs in one region.

According to cooperative society Act, (2004), introduction of reforms in cooperative sector to refine the legal framework governing the constitution, registration and regulation was done in order to enhance their operations and ensure effective management. The need to regulate SACCOs emerged when there were urgent needs to draft the bill. The SACCO sub sector comprises of both deposit taking and non-deposit taking SACCOs, deposit taking SACCOs are licensed and regulated by SASRA while non-deposit taking SACCOs are supervised by the Commissioner for co-operatives. SASRA issue license to SACCOs that have been duly registered under the Cooperative Societies Act CAP 490 (SASRA, 2012). The SACCO society Act 2008, was enacted later to provide licensing, regulation, promotion of saving and credit societies and supervision, this act lead to establishment of SASRA whose functions entail licensing, regulating and supervision of SACCOs (Wanyama, 2009).

1.1.3. SACCO Financial Performance

Financial performance is the ultimate goal of financial institution. All the strategies designed and activities performed thereof are meant to realize this grand objective. However, this does not mean that financial institutions like saccos have no other goals. Deposit taking savings and credit societies could also have additional social and economic goals. To measure the profitability of deposit taking saccos there are variety

of financial ratios used of which Return on Asset, Return on Equity and Net Interest Margin are the major (Murthy and Sree, 2003; Alexandru et al., 2008).

The financial performances of deposit taking savings and credit societies can be classified in to internal and external factors (Al-Tamimi, 2010; Aburime, 2005). These are stochastic variables that affect the financial performance. Internal factors are individual Sacco characteristics which affect the financial performance. These financial factors are affected by internal decisions of board of directors. Financial performance is a technique where long and short-term financial decisions which have the same objective of enabling an institution growth by ensuring that return on capital exceeds cost of capital, without making high financial risks (Pandey, 2010). The external factors are variables which are beyond the control of the institution and affect the financial performance of saccos.

performance of savings and credit societies affect economic growth of a country. prudence financial performance of saccos rewards its members for their investment. This, in turn, encourages more and more investment that contribute to economic growth of a country. However, poor banking performance by financial institution can lead to failure and insolvency of financial institution which have negative repercussions on country economic growth. Financial and operating ratios analysis has long been used as a tool for determining the condition and the financial performance of an institution (Ogilo, 2012). Performance is an outcome arising from the activities carried out by an organization (Habbershon, Williams and MacMillan, 2003). The financial performance of a SACCO is measured by its ability to meet the financial demands of its members taking into consideration the economic status of the members. SACCO is said to be doing well financially if it is able to finance its member's loans on timely and at appropriate rates. The CAMEL approach employed financial ratios to assess the various elements within the CAMEL framework and based on pre-determined industry benchmarks to determine the financial soundness of financial institutions like SACCOs (Dang, 2011).

According to Fried, Lovell and Schmidt (2008), it is appropriate to apply the profit maximization approach in modeling financial performance of SACCOs since it does not negate the principle of maximizing the benefit to members where dividends are

earned by members from net earnings. A sound and profitable banking sector is better able to withstand negative shocks and contribute to the stability of the financial system (Athanasoglou, Brissimis & Delis, 2005). According to Kariuki (2014) financial performance of a financial institution enables management to judge the output of business plans and its activities in monetary terms. It therefore facilitates measurement of an organization financial health over a certain period of time.

According to Zeqiraj (2013) financial performance of financial institutions are measured using a combination of financial ratios, analysis, benchmarking and measuring financial performance against budget or a mix of these methodologies. Financial ratios used include the Return on Equity (ROE) and Return on asset (ROA). ROA reflects the ability of management to generate profits from the assets of the firm; it is considered a better metric of the two because it takes into account the assets used to support business activities (Oyugi, 2014). On the hand ROE focuses on returns to shareholders and may sometimes be manipulated to falsely portray financial soundness (Penman and Penman, 2007). Studies show that financial performance of firms can also be influenced by ownership identity (Ongore, 2011).

Internal factors are individual SACCO characteristic that influence SACCO performance, this are influenced by the board of directors and managers of SACCO's. The external factors are factors which are beyond the control of a SACCO and affect the SACCO performance. Financial performance measurement is the way of ensuring that available resources are used in the most efficient and effective way that leaves the organization with maximum returns (Terence, 1989). Financial performance of SACCO's is very crucial. According to Johnson & mark (1997) SACCO's should have financial measurement tools to produce financial statements on timely basis and to analyze the financial statements. Based on SASRA standards of measuring performance, the determinants of financial performance include; capital adequacy, asset quality, management efficiency, earning ability, liquidity and sensitivity to market risk (CAMELS) According to Athanasoglou et al., (2005) the internal factors include bank size, capital, management efficiency and risk management capacity. The same scholars contend that the major external factors that influence bank performance

are macroeconomic variables such as interest rate, inflation, economic growth and other factors like ownership.

Kiragu and Okimbo (2014) analyzed the financial factors affecting financial performance of deposit taking savings and credit cooperative societies in Kenya, the study found out that fund misappropriation influences financial performance of SACCO's. Kivuvo and Olweny (2014), studied performance of SACCO's in Kenya using the Altiman Z Score Model of Corporate Bankruptcy, bankruptcy predictor variables was studied and financial stability of SACCO's. The study found out that liquidity and leverage had statistical significant impact of SACCO financial performance. This study examined the effects of internal factors on financial performance of deposit taking savings and credit societies in Kenya. Moreover, the researcher acknowledges the effect of internal factors on financial performance of deposit taking savings and credit societies are scanty. Thus, the research study was conducted to fill this research gap.

1.2 Statement of the Problem

The Deposit Taking SACCOs remain a significant player in the provision of financial services to the Kenya household and small business segment, and play a vital role of pooling resources for investment and wealth creation (Kinyua, 2013). The DT-SACCOs have continued to play a key role in the improvement of the economic pillar of the country vision as enshrined in the Kenya Vision 2030 economic policy blue-print, this is evidenced by improved key financial performance measurement parameters of growth in the total assets, total deposits and gross loans witnessed in the year 2015 (Vision, 2030).

DT-SACCO spur economic growth through the mobilization of domestic savings though financial performance have been hindered by ratio of total deposits to gross loans that stood from 1 to 1.08, this demonstrates that a greater percentage of the loan portfolio of SACCOs are being funded from external funding particularly from commercial banks. To remain comparatively competitive, they must avoid borrowing from commercial banks which is subject to high interest rates risks (SASRA, 2016).

However, it is observable that there is gap in DT-SACCO financial performance despite the impressive liquidity level being registered in successive years over and above the prescribed minimum requirement, many DT-SACCOs are often unable to fund their short-term obligations to their members, this irony calls for a review of DT-SACCOs that will address the needs of the industry. The strict adherence to the compliance standards revealed the inability of some of the DT-SACCOs to maintain the minimum licensing requirements, 5 SACCOs which were found to be non-compliant beyond redemption had their licenses revoked in the year 2015, and they ceased to take deposits from the public, 3 SACCOs had their licenses revoked in 2014 and 5 other SACCOs were allowed to continue operating on conditionally restricted licenses during the year 2015 in an effort by the authority to mid-wife them into compliance status (SASRA, 2017).

The nature of SACCOs has made it an area of keen interest in third world countries more than in developed countries, a few studies have been undertaken in Africa Zerfeshewa (2010), investigated the determinants of SACCO performance in Ethiopia, the study established that the educational level of members and officials as well as the regulations posed the greatest impediment to the performance of SACCOs. Sonja (2010) analyzed SACCOs in Uganda to determine effect of automation on the financial growth of SACCOs and found that performance resulted in increased efficiency. In Kenya, many studies have been undertaken on SACCO performance Kamau (2010), Kosiba (2012), Miriti (2014), for instance, examined the factors that affect SACCO performance in Meru County. According to Ngui (2010), savings and credit shareholders are facing a great challenge on financial performance due to their rigid stand towards income generation which has led to mismanagement and poor investment decisions among savings and credit societies (Ndung'u, 2010) hence contributing to organization failure (Olando, 2012). research indicate that SACCOs have been trying to address internal factors affecting financial performance since they have not been able to perform well financially but instead recorded losses (Olando, 2012)

However, there have been inconsistent findings in the respective research studies, giving room for the introduction of a moderating variable. The inconsistent findings

also indicate that some important variables such as sensitivity to market risk have not been taken in to account in the previous studies. On this note, it was necessary to examine the effect of internal factors on financial performance of deposit taking savings and credit societies in Kenya. Based on these studies and the varying gaps in literature, there was need to conduct similar studies in Africa and more so in Kenya. Further, there is paucity of empirical studies on effects of internal factors, moderating variable on financial performance, therefore little research investigating effect of internal factors on financial performance of deposit taking savings and credit societies in Kenya has been done.

1.3 Research Objectives

1.3.1 General Objective

The general objective of this study was to establish the effect of internal factors on financial performance of deposit taking savings and credit societies in Kenya. In pursuing this main objective, the following specific objectives were addressed.

1.3.2 Specific Objectives

The specific objectives pursued by the study were:

1. To establish the effect of capital adequacy on the financial performance of deposit taking savings and credit societies in Kenya.
2. To determine the effect of asset quality on the financial performance of deposit taking savings and credit societies in Kenya.
3. To evaluate the effect of management efficiency on financial performance of deposit taking savings and credit societies in Kenya.
4. To establish the effect of earnings ability on financial performance of deposit taking savings and credit societies in Kenya.
5. To determine the effect of liquidity on financial performance of deposit taking savings and credit societies in Kenya.
6. To establish the moderating effect of sensitivity to market risk on the relationship between internal factors and financial performance of deposit taking savings and credit societies in Kenya.

1.4 Research Hypotheses

The study hypotheses were;

H_{o1}: Capital adequacy has no statistical significant effect on financial performance of deposit taking savings and credit societies in Kenya.

H_{o2}: Asset quality has no statistical significant effect on financial performance of deposit taking savings and credit societies in Kenya.

H_{o3}: Management efficiency has no statistical significant effect on financial performance of deposit taking savings and credit societies in Kenya.

H_{o4}: Earnings ability has no statistical significant effect on financial performance of deposit taking savings and credit societies in Kenya.

H_{o5}: Liquidity has no statistical significant effect on financial performance of deposit taking savings and credit societies in Kenya.

H_{o6}: Sensitivity to market risk has no statistical significant moderating effect on the relationship between internal factors and financial performance of deposit taking savings and credit societies in Kenya.

1.5 Significance of the Study

The study provides invaluable insights to financial management leaders and policy makers in properly targeting the pillars of effective SACCO stewardship owing to their significant contributions to the sector. SACCO Sector in general and practitioners in particular would likely be activated by the findings to invest their utmost creative abilities in developing internal factors to manage and improve SACCOs' performance in Kenya. The research also brings together information about the financial performance of the SACCO sector and how management can implement, monitor and evaluate efforts and contribution of their internal factors.

The study is beneficial to researchers and academicians by creating a platform for further research study on related topics; it will also act as a resourceful tool for other academicians who intend to study the same topic in their area of specialization.

This research study will also help to highlight other important variables that require further research study; this may be focusing on other variables that affect SACCO performance. Finally, the study will help SASRA in policy formulation aimed at controlling and regulating SACCOs in Kenya. SASRA will be better placed in policy formulation and the regulation of SACCOs as a whole which has the ripple effect on job creation, curbing of inflation and the general growth of the economy.

1.6 Scope of the Study

The study sought to establish effect of internal factors on financial performance of deposit taking savings and credit societies in Kenya. The co-operatives studied were savings and credit cooperative societies within the banking sector. This study did not cover other forms of co-operatives. The study population was all deposit taking SACCOs in Kenya that had audited financial statements for 5 consecutive years.

The study therefore focused on these 83 SACCOs that were in existence from January 2012 to December 2016 and had audited accounts. This research was conducted from August 2016 to September 2017. The SACCOs that were studied were deposit taking savings and credit cooperative societies. The scope was also limited to the stated objectives of the study which spells out the variables to be studied. The study was conducted in August, 2016 and data was gathered during this period.

1.7 Limitations of the Study

The study findings were limited to SACCOs that had audited financial statements for 5 (five) consecutive years. Further, the study was restricted in terms of content since it only considered five variables as the internal factors of the financial performance of SACCOs whereas there could be other factors. However, the exclusion of other internal factors creates an opportunity for other studies to extend a similar study, but focusing on other internal factors.

The study also considered only the financial performance of SACCOs whereas there could be non-financial indicators of performance. It is expected that other studies will extend a similar study, but focus on non-financial indicators.

The SACCO confidentiality policy restricted most of the respondents from answering some questions in the questionnaire. This would have been considered to be against the confidentiality policy to expose the organization's confidential matters. The researcher mitigated this limitation by presenting an introduction letter obtained from the university to the respective SACCO management to avoid suspicion and enable the management to disclose much of the information that was sought by the study on the effect of internal factors on financial performance of savings and credit societies in Kenya

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter was organized according to specific objectives in order to bring out the relevance of the research gap. The literature surrounding the study of SACCO performance was conducted in the context of different existing theories. This chapter specifically reviews the literature and discuss around the theories that were used to study SACCO performance. Literature on; capital adequacy, asset quality, management efficiency, earnings ability, liquidity and sensitivity to market risk were discussed. Lastly some empirical works on internal factors of financial performance was reviewed and the research gap.

2.2 Theoretical Framework

The theoretical framework is the structure that can support a theory of research study. A theory is a group of statements which explain phenomena or are supported by evidence meant to explain some phenomena. Theories provide a generalized explanation to an occurrence of phenomena. Torraco (1997) explain that theories are formulated to explain, predict, and understand phenomena and in many cases, problems and extend existing knowledge, within the limits of the critical bounding assumptions. The theoretical framework should demonstrate an understanding of relevant theories and concepts to the topic of the research study and that will relate to the broader area of knowledge in the area of study. According to Kennedy, (2007) theory selection should highly depend on its appropriateness, its ease of application, and its explanatory power. The theoretical framework connects the researcher to existing knowledge.

Researcher was conversant with those theories applicable to this area of research study (Kombo and Tromp, 2009, Smyth, 2004). According to Aguilar (2009), a theoretical framework conceptualize research in determining what variables to measure, and what statistical relationships to look for in context of the gap under study, thus, theoretical literature helped the researcher to clearly see the independent, dependent and

moderating variables under study, provides a general framework for data analysis and helps in the selection of applicable research design.

The theories reviewed were market power theory, liquidity theory, efficient structure theory, monetarist theory, portfolio selection theory, economic efficient theory and expense preference theory. These theories reviewed the source of the variables of the study, their prepositions and the interactions between the dependent and independent variables. Theoretical review was undertaken to eliminate duplication of what has been done by other researchers and to provide clear understanding of existing knowledge based on the theories.

2.2.1 Market Power Theory

Modigliani and Miller (1950) approach to capital theory advocates capital structure irrelevancy theory, he further states that the market value of a firm is affected by its future growth prospect apart from the risk involved in the investment. Its prepositions were: financial leverage is in direct proportion to the cost of equity and no taxes based on the following assumptions: there is no taxes, transaction cost for buying and selling securities as well as bankruptcy cost is nil, there is symmetry of information, the cost of borrowing is the same for investors as well as companies and debt financing does not affect companies EBIT.

The market power theory states that increased external market forces results into financial performance in terms of profits. Moreover, the hypothesis suggests that only firms with large market share and well differentiated portfolio can outstand their competitors and enjoy monopolistic profit. Market power theories entail traditional structure conduct performance and the relative-market power hypotheses. The Structure-Conduct-Performance (SCP) can be defined as the relationship between market structure, firm conduct and firm performance (Berger, 1995). The market power theory postulates that the existence of entry barriers is the major determinant of firm profits. According to this theory, high costs of entry makes it easier for existing firms to maintain monopoly profits, entry barriers can be in the form of strict regulations provided by the regulator (SASRA).

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Smirlok (1985) subscribing to the efficiency hypothesis, considers market share as a proxy for efficiency. The efficiency hypothesis prevails when a significant positive correlation between market share and profitability is signaled. This method implicitly assumes that a higher market concentration is the main source of market power. Shepherd (1986) criticizes this method by considering that the direct source of market power is the domination of participants over the individual market, independently of the ultimate sources of such a domination, hence the emergence of the Relative Market power (RMP) hypothesis. It is uniquely the banks with a large market share and diversified products that might exert their market power to determine prices and make profits. Consequently, under the RMP hypothesis, individual market shares accurately determine market power and market imperfections

In Kenya the SACCO industry is portrayed by capital adequacy requirements that prevent easy entry into the industry, new entrants will diminish the level of those profits and capital requirements often lock out new entrants resulting in monopoly tendencies. The rate of entry is relatively low in the SACCO industry in Kenya. However, this is not to say that capital requirements are main barriers of entry to the SACCO industry.

Empirical works by scholars on the effect of market structure on the performance of the banking industry has focused on the standard analysis of the relationship between profitability and concentration measures and they found a positive relationship between market structure and bank performance for instance, Kaufman, 1966 and Rhoades, 1985. Other empirical works had varied results, for instance Smirlock (1985), found an insignificant relationship between the measures of market structure and of bank performance.

Entry barriers can also be designed to increase efficiency and such barriers are referred to as structural barriers (OECD, 2007). They reflect the basic industry conditions. With regard to capital adequacy requirement, SASRA seeks to protect investors and member's interests. The market power theory is relevant to this study since the SACCO with a strong position in the market (market power share) is likely to achieve higher financial performance.

2.2.2 Monetarist Theory

Milton Friedman was the Founding Father of Monetarism theory in 1987. Monetarism is a theoretical challenge to Keynesian economics that increased in importance and popularity in the late 1960's and 1970's Monetarists argue that since money is a direct substitute for all other assets, an increase in the supply of money, given a fairly stable velocity of circulation, there will be direct effect on the demand for other assets since there will be more money to spend on those assets. If the total output of the economy is fixed, then an increase in the money supply will lead directly to high prices (Friedman, 1987). All increases in the money supply will be reflected in higher prices unless when there is a long-term growth in the economy.

Kiyotaki and Wright (1989) illustrate that a model that can now be described more easily than when it was first developed, due to advances in technique. The goal is to derive equilibrium trading patterns endogenously, to see if they resemble arrangements observed in actual economies, in a stylized sense, and especially to see if there emerge institutions like the use of some commodities as medium of exchange or some agents as intermediaries. Adding other assets allows researchers to more easily illustrate additional financial performance. These include: assets can facilitate intertemporal exchange; this may be true for fiat currency, an asset with a zero return, or even assets with negative returns; for money to be essential, necessary conditions include limited commitment and imperfect information; the value of fiat money is both tenuous and robust; and whether assets circulate as media of exchange may not be pinned down by primitives (Kiyotaki and Wright 1991,1993).

Monetarist school contended that money supply is a key determinant of the level of production in the short run and the rate of inflation in the long run. In order to minimize uncertainty monetarist advocated for the maintenance of a constant rate of growth of money supply (Friedman, 1987). The monetarist school holds to three major propositions: that growth of the money supply is the major systematic determinant of nominal GDP growth; prices and wages are relatively flexible and that private economy is stable, these propositions suggest that macroeconomic fluctuations arise primarily from erratic money-supply growth.

The monetarist theory is relevant to this study as it guides the SACCO on asset quality, given the risks and uncertainty of the future. Additionally, inflationary expectation is affected by previous period thus affecting economic growth through asset quality of SACCO that contributes to the economy of the country.

2.2.3 Efficient Structure Theory

This theory was formulated by Modigliani and millers (1950), through capital theory approach advocating capital structure irrelevancy theory; they further states that the market value of a firm is affected by its future growth prospect apart from the risk involved in the investment, efficient structure theory prepositions were; no transaction cost and individual and corporate borrow at the same rate. Efficient structure theory enhanced managerial and scale efficiency leads to higher concentration and then leading to higher profitability within the financial institution.

According to Nzongang and Atemnkeng in Olweny and Shipho (2011) balanced portfolio theory also added additional dimension into the study of bank financial performance. It states that the portfolio composition of the financial institution like saccos, its profit and the return to the members is the result of the decisions made by the management and the overall policy decisions. From the above theories, it is possible to conclude that saccos financial performance is influenced by both internal and external factors.

Demsetz (1973) formulated an alternative explanation on market structure performance relationship and proposes the Efficiency Hypothesis. Applied to financial institution like sacco sector, this hypothesis stipulates that a sacco which operates more efficiently than its competitors gain higher profits resulting from low operational costs. The same bank holds an important share of the market. Consequently, differences at the level of efficiency create an unequal distribution of positions within the market and an intense concentration. Since efficiency determines market structure and performance, the positive relationship between these two seems superficial.

According to Thoraneenitiyan (2010), bank efficiency studies can be separated into those that examine scale and scope efficiency and those that examine X-efficiency (frontier efficiency). The X-efficiency hypothesis argues that banks with better

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management and practices raise profits and control costs, moving the bank closer to the best-practice. The scale-efficiency hypothesis argues that some banks achieve better scale of operation and, thus, lower costs. Lower costs lead to growth and higher profits.

Berger (1995) divides the efficiency hypothesis into x-efficiency (XE) and scale efficiency (SE) hypotheses. According to the x-efficiency hypothesis, the costs incurred by financial institution with efficient management and technologies are lower resulting in higher profitability. The better banks x-efficiency is, the larger are market shares and the higher is concentration. Under the efficiency hypothesis, the difference in performance between two firms is not due to differences in management efficiency, but to differences at the level of scale efficiency. Banks costs lower than their competitors result in higher profitability. These banks may acquire extended market shares which increases market concentration. Previous research on market-power theories test produce suspect findings, and do not support the efficient-structure theories and findings support for only two of the four hypotheses, the relative market power and the X-efficiency hypotheses using simultaneous test of all four competing hypotheses two market-power and two efficient structure by adding measures of X-efficiency and scale efficiency to the standard tests (Berger, 1995).

Empirically tested this hypothesis (Efficient-Structure theory) using data set over 2700 banks, found that no relationship between market concentration and bank performance, while statistical significant positive correlation between bank profitability and market share was present (Smirlock, 1985). The efficiency structure theory is relevant to this study as it guides the SACCO in management efficiency.

2.2.4 Liquidity Theory

Keynes (1936) developed the liquidity preference theory in his famous book, the general theory of employment, interest, and money was developed due to the great depression with persistent unemployment for which the quantity theory of money had no answer to economic problems in the society. His theory was based on the preposition that money is financial asset in portfolio that consists of ether money or bond; he further researched on both transaction and asset theories of money demand.

Keynes distinguished three motives of holding money as; transaction motive, precautionary motive and speculative motive.

Baumol and Tobin (1958) refined the liquidity preference theory and their propositions which were based on Keynesian model economy that emphasized on investing in risky assets, instead of transaction balances. Baumol (1958) considered transaction balances to meet the working capital needs of the investors while Tobin (1958), emphasized on investment balances that premised on liquidity preference theory that seeks to explain the level of interest rate with regards to the interaction of money supply and desire of investors to hold their savings in cash or near cash.

Calomiris, Heider and Hoerova (2014) further argued that banks should hold cash to guard against liquidity risk and as a prudential regulatory measure. Borrowing from the Black-Scholes model, the theory argues that cash as opposed to capital is riskless, observable and verifiable. By holding cash, financial institutions mitigate against two risks simultaneously; default risk and liquidity risk. There are several liquidity theories; the liquid asset theory focuses on the asset side of the financial position and argues that financial institutions must hold large amount of liquid assets against possible demand or payment cushion of readily marketable short-term liquid assets against unforeseen circumstances. This approach is very expensive in a current world of dynamic money market (Ngwu, 2006).

The shift ability theory holds that bank liquidity is maintained as long as assets that could be shifted or sold to other lenders or investors for cash. The theory includes marketable securities as part of liquidity. Anticipated income theory argues that Sacco liquidity can be estimated and influenced by the maturity pattern of the loans and investment portfolios, short-term business and customer installment loans which would have more liquidity than those secured by real estate (Taye, 2014). The commercial loan theory on the other hand argues that SACCO liquidity would be assured if assets were held in short term, loan that would be liquidated in the normal course of business and by extending working capital loans, liquidity is assured as such inventory would eventually be sold for cash.

Saunders and Cornett (2011) advocate for the prudential planning of cash flows by matching assets against maturities of liabilities. For an organization to operate in a positive cash flow the maturity of asset must be earlier than the maturity of liabilities. Government of Kenya (2008), SACCO Societies Act advocates for 15% Liquidity ratio is computed as total cash and cash equivalent divided by the summation of short-term deposits and short term liabilities. The ratio encourages SACCOs to be liquid always to enable them meet daily cash requirements for the members and a similar view was shared by Ruth (2001).

Allen and Gale (2004) advocate that, in the absence of financial shocks and incompleteness of the markets for aggregate risk, there is no regulation that can improve upon the market equilibrium. In contrast to the literature Farhi et al, (2009), proposed that bringing in a liquidity requirement on the minimal or the maximal amount of liquidity holdings of the short asset for an intermediary. They identify a reason for the market failure and externality in which intermediaries do not internalize how liquidity they provide aspects other intermediaries via the possibility of trades on private markets. Importantly, this externality exists even when there are no aggregate shocks. This contrasts with the conclusions of Holmstrom and Tirole (1998) and Allen and Gale (2004) that the government has an important role in regulating liquidity only if there are aggregate shocks.

Saunders and Cornett (2011) recommended prudential planning of cash flows by matching maturities of assets and liabilities. Organization should operate in a positive cash flow and the maturity of asset must be earlier than the maturity of liabilities in order to cushion against risk. SASRA act advocates for 15% Liquidity ratio which is computed as total cash and cash equivalent divided by the summation of short-term deposits and short-term liabilities. The ratio encourages SACCOs to be liquid always to enable them meet their obligation for the members (Government of Kenya, 2008). In this study this theory is relevant as it guides SACCOs by highlighting how much they get indebted, whether the debt burden is heavy or light and finally whether their financial situation is improving or not.

2.2.5 Portfolio Selection Theory

Markowitz (1952) developed this theory through his paper, portfolio selection, formalized intuition by proposing that investors focuses on selecting portfolios based on portfolios overall risk return characteristic instead of compiling portfolios from securities that each individually have attractive risk return characteristic. He argued that only systematic risk can be diversified while unsystematic risk cannot be diversified but can be hedged and transferred only. Tobin (1958) expanded on Markowitz's theory by adding a risk-free asset to the analysis which made it possible to leverage portfolio on the efficient frontier.

The main prepositions of this theory were: that future return of the invested stocks is uncertain and therefore to calculate it with absolute certainty is not possible, different investors have different preferences of the risk associated with uncertainty thus investors choose the stocks with their desired level of risk preferences and the future return of the invested stocks are correlated to each other. Hence, while creating portfolio, independence is considered between the return values of the stocks and the risk. In this study market risk is an inherent part of a higher return thus risk averse SACCO management (investors) can construct portfolio based on a given level of sensitivity to market risk.

Utility and risk are two often competing measurements on the investment performance and indicate that efficient trade-off between these two measurements for investment portfolios happens, in general, on a convex curve in the two-dimensional space of utility and risk. This is a rather general pattern. The modern portfolio theory of Markowitz (1959) studied Portfolio Selection, and its natural generalization, the capital market pricing model, Sharpe, (1966) analyzed mutual fund performance, which are special cases of our general framework when the risk measure is taken to be the standard deviation and the utility function is the identity mapping. Using our general framework, we also get the results in (Rockafellar, Uryasev and Zabarankin, (2006) who analysed master funds in portfolio analysis with general deviation measures that extends the capital market pricing model to allow for the use of more general deviation measures. This generalized capital asset pricing model also applies to approximation of the maximum drawdown is considered as a risk measure. Furthermore, the

consideration of a general utility function allows to go beyond the additive performance measure to a multiplicative one of cumulative returns by using the log utility. As a result, the growth optimal portfolio theory. Lintner (1965) studied the valuation of risk assets and the selection of risky investments in stock portfolios and capital budgets, and the leverage space portfolio theory. Vince (2009) also did the Leverage space trading model which can also be understood under our general framework. Thus, this general framework allows a unification of several important existing portfolio theories and goes much beyond. Nzongang and Atemnkeng (2006) added to balanced portfolio theory a different dimension into the study of bank financial performance. The theory suggests that the portfolio composition of a commercial bank, its performance and the return to shareholders is the solution of the decisions made by the management and the overall bank policy decisions.

According to Omisore, Munirat & Nwufo (2012), asset diversification to hedge against market risk as well as risk that is unique to a specific organization uses this theory. Portfolio theory is quantification of the relationship between risk and return tradeoff and the assumption that investors must be compensated for assuming risk. The portfolio selection theory is relevant to this study as it guides SACCOs and saving investors on how to construct their investment portfolios and how to mitigate against risk through portfolio diversification and hence increase return to SACCO members through dividends.

2.2.6 Expense-Preference Behavior Theory

This theory was developed by Williamson (1963), and later refined by Rees (1974), this theory posits individual preferences of managers of a firm as utility maximizing, as opposed to profit maximizing. This theory predicts that under certain circumstances such as the separation of ownership and control, costly monitoring of managerial behavior, lack of effective competition in input and output markets, or effective regulation in those same markets, managers spend more on other prerequisites than is consistent with profit maximization behavior, (Gropper and Oswald, 1996).

Edwards (1977) did the first empirical work for the expense preference theoretical framework on financial institutions using data of 44 banks in 1962, 1964, 1986 and

total wages and salaries; total employees as the dependent variables, he found out that coefficient of the three bank concentration ratios to be positive and significantly correlated with both the bank's total labour force and the bank's total wage bill thus, concluded that expense preference behavior is a significant force that detracts from profit maximization in many banks. Other works consistent with this view include the empirical works of Arnould (1985), who found evidence of the expense preference theory in the banking firms. The theory is relevant to this study as it guides on how the profitability of the SACCO is taken in measuring performance.

2.2.7 Economic Efficiency Theory

Economic efficiency theory states that companies should achieve their output at the lowest possible cost per unit produced. According to this theory, economies of scale should be exploited to achieve optimal production. The theory focuses on two kinds of efficiency; allocative and productive efficiency, allocative efficiency is achieved by ensuring that all firms in the industry charge optimal prices. In the banking sector, this will result in a reduction of lending rates.

The economic efficiency theory is relevant to this study as it guides in savings mobilization, which will enable SACCOs to create credit out of excess deposits (credit creation) hence SACCO will earn interest. Allocative efficiency in the determination of lending rates among SACCOs will ensure unhealthy competition does not ensue between them. High competition in banking is associated with instability (De Nicoló, Jalal and Boyd, 2006). Productive efficiency is achieved when SACCOs employ all their resources efficiently, producing the most output from the least input (Said, 2011). This theory is relevant to this study as Productive efficiency guides both the lending and investment decisions of SACCO hence improving financial performance and guide in investing in low risk assets such as government bonds.

2.3 Conceptual Framework

A conceptual framework is principles taken from relevant fields of enquiry and used to structure a subsequent presentation (Kombo and Tromp, 2009). A conceptual framework is a research tool intended to assist a researcher to understand the situation under scrutiny and to communicate it.

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According to Mugenda (2008), a conceptual framework is a hypothesized model portraying the relationship between dependent and independent variables graphically or diagrammatically. Conceptual framework helps in quickly conceptualizing the proposed relationship and is put to test in order to establish the significance of the proposed relationship. The conceptual framework illustrates the dependent and independent variables.

The CAMEL is a Uniform Financial Institutions Rating System (UFIRS) that was adopted by the Federal Financial Institution Examination Council (FFIEC) to evaluate the soundness of financial firms (Dang, 2011). The system became internationally known with the abbreviation CAMEL, reflecting five assessment areas; capital adequacy, asset quality, management efficiency, earnings ability and liquidity. The CAMELS approach system focuses on the financial statement, funding sources, macroeconomic data, budget and cash flow thus observing the institution's dynamic aspect (Deyoung *et al.,* 2001). A similar approach was applied by Gupta (2014), in analyzing the performance of public banks in India. A conceptual framework in this study shows the effect of internal factors on financial performance of SACCOs in Kenya and has been depicted in Figure 2.1.

Independent variables   **Moderating Variable**

```
┌─────────────────────────────┐
│ Capital adequacy            │
│ -Core capital to total asset│
│ requirement                 │
│ -Institutional capital to   │
│  total asset                │
│  Requirement                │──────────────┐
│ -Minimum core capital       │              │
│ requirement                 │              │
│ -Capital to total deposits  │              │
└─────────────────────────────┘              │
                                             ▼
┌─────────────────────────────┐
│ Asset quality               │
│ -Credit policy in place     │
│ -General state of the       │
│  economy                    │──────────────►
│ -Trend of creditors         │
│ -Overhead cost              │
│ - Gross NPA to Total        │
│   Advances                  │
└─────────────────────────────┘
                                             ┌──────────────────┐
┌─────────────────────────────┐              │ Financial        │
│ Management efficiency       │──────────────│ Performance      │
│ -Improved business plan     │              │ of               │
│ -Enhanced independent       │              │                  │
│ internal and external audit │──────────────► • ROA            │
│ implementation              │              │                  │
│ -Enhanced capability of     │              └──────────────────┘
│ board of directors and      │                        ▲
│ senior management           │                        │
│ -Ratio Business per Employee│                        │
└─────────────────────────────┘                        │

┌─────────────────────────────┐
│ Earning ability             │
│ -Earning ability determines │
│ the financial performance   │
│ -Earning ability guards the │
│ Sacco against erosion of    │
│ capital                     │        k
│ -Rating manifest adequacy of│
│ the current and future      │
│ earnings                    │
│ -Earning per shares         │
└─────────────────────────────┘

┌─────────────────────────────┐
│ Liquidity                   │
│ - Capping external debt at  │
│   25%                       │──────────────►
│ - Minimum statutory ratio   │
│   of 15%                    │
│ - Liquid assets to deposits │
└─────────────────────────────┘
                                 ┌──────────────────────────┐
                                 │ Sensitivity to Market    │
                                 │ Risk                     │
                                 │ -Standard deviation of   │
                                 │ Returns                  │
                                 └──────────────────────────┘
```

Capital is the money already invested in business or investable (Geoffrey, 2014). Capital is adequate either when it decreases risk of collapse in the future to some level that is predetermined or when a bank pays enough premiums to an insurer per the expected losses (Maisel, 1979). Moulton (1918) in his theory of shiftability reveals that firms should have assets that can easily be shifted to other firms. This helps to counter the problem of capital adequacy. In this study, capital adequacy was measured using core capital to total asset requirement, institutional capital to total asset requirement and minimum core capital requirement. The dimension of capital adequacy is an important factor to help the bank in understanding the shock attractive capability during risk. In this study, capital adequacy is measured by using the equity to total assets ratio (Vong & Chan, 2009). That means, capital adequacy enables a bank to meet any financial unexpected condition due to Financial risk, credit risk, market risk, interest rate risk. Capital adequacy protects the interest of members of a sacco.

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.

2.3.2 Asset Quality

Asset quality is a factor that determines the state of an organization. Examples of asset qualities of a micro finance institute are; loans, securities, off balance sheet items, cash, due from accounts, premises and so forth (Schaeck, 2008). Asset quality is evaluated through rating, what is known as asset quality rating. This rating reflects on the existing and possible credit risk associated with the asset qualities. In this study, asset quality was measured using credit policy in place, general state of the economy and trend of creditors. The dimension of asset quality is an important factor that help the financial institution in conceptualizing the risk on the exposure of the organization debtors.

According to merchant (2012), this variable is measured by the provision for loan loss reserve to total asset ratio. This ratio assures to cover the bad and doubtful loans of the

Sacco. This variable will benefit the Sacco in getting right the amount of funds that have been reserved by the Sacco in the event of bad investments.

2.3.3 Management efficiency

Management efficiency is an internal factor that refers to how best the management is able to allocate and use resource to increase performance. Management efficiency can be computed by different ratios such as total asset growth, earning growth rate and loan growth rate (Kusa & Ongore, 2013). The study also noted that ratio of operating profit to income is also a good measure of management efficiency. Management efficiency refers to a monetary recommendation that could result in funds being used more efficiently. The recommendation may include; savings from such items as reprogramming or recapture of unliquidated obligations; more efficient contract negotiations; and reduction or elimination of payments, costs, or expenses that would be incurred by the Agency (Grier, 2007).

Management efficiency evaluate Governance of SACCOs, how prudent the SACCOs board of directors operate, including the board diversity of technical expertise of an organization, independence of management and its ability to make decisions effectively, it also evaluates whether human resources provides clear guidance and support to operations staff, Processes, controls and audit (SASRA, 2013). In this study, management efficiency was measured using improved strategic plan, improved business plan, enhanced independent internal and external audit implementation and enhanced capability of board of directors and senior management. Management efficiency reflects the management soundness of a financial institution. The management acts as a safeguard to operate the sacco in a smooth and prudent manner and is called excellence management or skillful management, whenever it controls its cost and increases performance, ultimately achieving higher profits.

2.3.4 Earning ability

Earnings ability refers to the firm capability to maintain and increase its net worth through earnings from operations (Kongiri, 2012). In this study, earnings ability was measured using earning ability determines the financial performance, earning ability guards the Sacco against erosion of capital and rating manifest adequacy of the current

and future earnings. Earning ability is an important parameter to measure the financial performance of an organization like savings and credit societies. Earning ability measures the profitability and productivity of a financial institution, explains the financial growth and sustainability of future earnings capacity of an organization. In the same way, saccos depends on its earning ability to perform the routine activities like funding dividends, maintaining adequate capital levels, providing for opportunities for investment for saccos to grow financially, strategies for engaging in new emerging activities and maintaining the competitive outlook in the market.

2.3.5 Liquidity

Liquidity is the availability of money that can be used to finance a project or institution's ability to finance an increase in assets and to repay liabilities in time (Adrian and Shin, 2010). It is also the ability to settle obligations within the stipulated time. It can be measured using the following concepts; money overhang, the price gap, nominal money gap and the real money gap (Polleit and Gerdesmeier, 2005). According to Uzhegova (2010) banks with high liquidity ratio have low profits and high risk. In this case the bank management is always in a cross road regarding performance and liquidity hence the management should be very keen in decision making. In this study, liquidity was measured using capping external debt at 25%, minimum statutory ratio of 15%, liquid assets to deposits and short-term liabilities.

Liquidity ratio, in a measure the ability to meet its current obligations as they come (Hazzi and Kilani, 2013). To have a sound financial institution operation there is needs to comply or meet the liquidity solvency ratio threshold as required by sasra. If any Sacco faces liquidity crisis, Sacco it cannot meet up its short-term obligations as required. Liquidity crisis seems to be a curse to the image of financial institution like saccos thus is a prime concern to saccos. Loans, Cash and investments are the most liquid assets of a Sacco. An adequate liquidity position means a situation, where institution can obtain sufficient funds, either by rising liabilities or by converting its assets quickly at a reasonable cost. Here liquidity performance is measured by net investment to total asset ratio. This ratio can be defined as the amounts of assets been engaged in investment.

2.3.6 Sensitivity to Market Risk

Sensitivity to market risk is described as the degree to which changes in interest rates and inflation can adversely affect financial performance. Sensitivity to market risk stands for financial system it covers an assessment of exposure to market risk. The rating system is designed to take into account and reflect all significant financial and operational factors examiners assess in their evaluation of an institutions performance. Institutions are rated using a combination of specific financial ratios and examiner qualitative judgments the possibility of an investor to experience losses due to factors that affect the overall financial market (Brockett, Cooper, Golden, Rousseau & Wang, 1997).

Sensitivity to Market risk is mainly associated with the interest rate risks, exchange rate risks, and commodity as well as equity price risks. Deposit savings and credit associations are also exposed to these risks. The sensitivity to market risk is assessed by the percentage to which changes in market prices, interest rates, exchange rates, commodity prices, and equity prices adversely affect a bank earnings and capital. The sensitivity of the financial institution earnings or the economic value of its capital base or net equity value due to adverse effect in the interest rates of the market. The amount of market risk arising from trading and foreign operations. As regards the sensitivity to market risk, Basel Committee on Banking Supervision highlights the aspects like; sensitivity of the financial institution's net earnings or the economic value of its capital to changes in interest rates under various scenarios and stress environments, volume composition and volatility of any foreign exchange or other trading positions taken by the financial institution, actual or potential volatility of earnings or capital because of any changes in market valuation of trading portfolios or financial instruments, ability of management to identify, measure, monitor and control interest rate risk as well as price and foreign exchange risk where applicable and material to an institution (Sahajwala and Bergh, 2000).

2.4 Empirical Literature Review

This section reviews studies previously done on effects of internal factors on financial performance. 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 (Zikmund et al, 2010). Miller and Yang (2008) found out that through the use of a systematic approach to previous scholarly work, literature review allows researchers to place the research work into an intellectual property and enables researcher declare why research matters.

2.4.1 Capital Adequacy and Financial Performance of Savings and Credit Societies in Kenya

Naceur and Kandil (2006) examined the effect 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 financial performance; the study concluded that capital requirement regulation improved financial performance.

Onaolapo and Olufemi (2012) examined the effect of capital adequacy on the profitability of the Nigerian banking sector for 10 years period, 1999-2008, using Augmented Dickey Fuller (ADF) to test for stationary of the data. The study further conducted a pair wise grange r causality test to determine the co-integration between the study variables. Findings reveal that the bank performance variables tested, Return on Capital Employed (ROCE), Return on Assets (ROA), Efficiency Ratio (ER) does not have significant effect on capital adequacy of the banking sector. They recommend pragmatic governance and stable economic and financial environment for better financial performance of commercial banks in Nigeria.

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. They study further argued that capital enhances the performance of medium and large banks primarily during banking crises

Odunga, Nyangweso, Carter, and Mwarumba, (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 statistical significant impact on bank performance. The study recommended that banks shifted their concentration from increasing capital levels to credit risk management.

Goddard et al. (2004) investigated performance of European banks using cross sectional data during the year 1990s. The findings indicated that the relationship between the capital to asset ratio and profitability was statistical significant. Athanas oglou et al. (2013) studied the effect of bank specific, industry specific and macroeconomic determinants of bank profitability in Greece and found out that coefficient of capital variable was significant and highly significant reflecting the sound financial condition of Greek banks. Kosmidou et al. (2005) researched on the impact of banks characteristics, macroeconomic conditions and financial market structure on banks net interest margin and return on average assets (ROAA) in the UK commercial banking industry over the period 1995 to 2002. The findings indicated that capital strength is one of the main determinants of UK banks financial performance hence capitalized banks face lower cost of going bankrupt, which reduces their cost of funding or lowers the needs for external funding which results in higher profitability.

Ngo (2006) researched on the relationship between capital adequacy and profitability and his findings indicated no statistical significant relationship existed between capital and profitability. Olalekan and Adeyinka (2013) studied the effect of capital adequacy and profitability of deposit taking banks in Nigeria using primary data collected through questionnaires distributed to banking employee, involving a sample of 518 respondents with a response rate of 76% and also the use of secondary data form published financial statements of banks for the period 2006 to 2010. The findings from

this research for the primary data analysis revealed statistical insignificant relationship but the secondary data analysis showed a positive and statistical significant relationship between capital adequacy and bank profitability. This implies that for deposit taking financial institutions, capital adequacy plays a key role in the determination of bank profitability.

Kivuvo and Olweny (2014) studied the financial performance of SACCOs in Kenya using the Altiman Z score model of corporate bankruptcy, the research study focused on predictor variables of bankruptcy and the financial stability of SACCOs. The study found out that liquidity and leverage was significant to SACCO financial performance. According to the study, financial stability is also significant to economic performance. The study concluded that SASRA should advocate for additional capital base for SACCOs. They recommended that SACCOs should improve their liquidity, profitability, operating efficiency and total assets turnover if they must remain in business and meet the capitalization threshold.

Kahuthu (2016) studied the impact of prudential regulation on financial performance of deposit taking savings and credit co-operative Societies in Kenya and 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 relationship on the SACCOs financial performance. Barus, Muturi, Kibati, and Koima (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.

Odhiambo (2011) did a study on relationship between working capital management and financial performance by deposit taking Saccos in Nairobi County and found out 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 practices 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 SACCOs. 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.

According to Beckmann (2007), high capital ratio lead to low profits since banks with a high capital ratio are risk averse, they ignore risky investment opportunities and as a result, investors demand a lower return on their capital in exchange for lower risk. The regulation that exists in most countries is capital requirement. Capital adequacy requirements can take a variety of forms. Most countries know their minimum threshold level of capital required. Therefore, many countries require the maintenance of some capital adequacy solvency ratio; that is a minimum ratio between capital and an overall balance sheet magnitude, such as total assets or liability, or some weighted measure of risk assets. The Basel Accord was modified in 2004 introducing more sophisticated ways of computing capital requirements and increasing the focus on risk-management policies and systems in banks. In particular the new regulation, which will start to be implementation from the end of 2006, encourages banks to develop, with supervisory oversight, their own systems to compute minimum capital requirements (Biggar and Heimler, 2005).

2.4.2 Asset Quality and Financial Performance of Savings and Credit Societies in Kenya

Luqman (2014) undertook a study on the effect of credit risk on performance of banks in Nigeria; the study found that there is a significant relationship between bank financial performance (in terms of profitability) and credit risk management (in terms of loan performance). The study mentioned that loans and advances and nonperforming loans are major variables in determining asset quality of a bank. Findings indicated that improper credit risk management reduces bank profitability, affects the quality of its assets and increases loan losses and non-performing loan

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which may eventually lead to financial distress. The study recommended that management need to be cautious in setting up a credit policy that will not negatively affects profitability and also, they need to know how credit policy affects the operation of their banks to ensure judicious utilization of deposits and maximization of profit.

Non-Performing Assets (NPAs) has increasingly been gaining interest in recent past years. Banks performance is significant to raising NPAs in the entire banking system. Some studies found out that insolvency of financial institution can be predicted by asset quality which is said to be one of the causes of failure of many financial institutions since most of the banking institutions which have failed were linked to increase in the level of their non-performing loans (NPLs) (Swamy, 2013). Failure of many financial institutions in a country is associated with poor loan quality and bad debts leading to receivership of some banks in the recent past. According to Waweru and Kalani (2009) NPLs greatly contributed to the failure of some of the financial institutions in 1986. The study also concluded that many commercial banks results to failure due to the extensive insider lending. Hence asset quality is very vital in understanding the performance of financial institution in the banking industry. Non-performing loans lead to wastage of resources and result to indirect cost to the bank caused by low asset quality, leading to low interests earned on loans and in long run it negatively affects the performance of the bank (Cheruiyot, 2016).

Kinyua (2013) investigated the relationship between the SACCO size and financial performance in Kenya, the study used total assets deposits and turnover as proxies for SACCO size. The study found that SACCO size significantly influence performance. Kioko (2014) investigated the influence of credit information sharing on SACCO performance. The study established that credit information sharing plays a significant role in determining performance of deposit taking SACCOs. Christopoulos et al. (2011) found out that asset quality ratio tended to increase over the years. It implies a low ability to detect, measure, monitor and regulate credit risks of an institution, while at the same time considering its bad and doubtful debt for the Lehman Brothers. The policy adopted in issuing loans was proven to be the worst policy by issuing loans to insolvent, high-risk customers, which led to increase in its non-performing loans each year.

Manyuanda (2013) examined the effect of nonperforming loans on the performance of SACCOs in Nairobi, Kenya. The study concluded that a significant negative relationship existed between non-performing loans and performance of SACCOs. The study recommended that SACCOs opt for equity financing instead of debt financing to improve on its leverage. SACCOs should also avoid excessive lending, maintain high credit standards and limit lending to un-hedged borrowers.

Gitonga (2014) studied the effect of loan provision on the profitability of SACCOs in Nairobi County. The study gathered information on loan provision from the year 2010 to 2013. The study revealed that a negative relationship existed between loan loss provision and profitability of deposit taking SACCOs. A positive relationship was also found between the size of the SACCO and performance. The study also mentioned that management quality positively impacted on performance. They study also looked at the role of loan intensity in SACCO performance. Findings indicated that a unit increase in loan intensity led to a unit increase in profit of deposit taking SACCOs.

2.4.3 Management Efficiency and Financial Performance of Savings and Credit Societies in Kenya

Bataineh (2014) examined the impact of employee training on the performance of commercial banks in Jordan. The study found that training employees increased their productivity. Increased knowledge and skills lead to efficiency. According to the study, training also increases motivation levels among employees. Productivity of employees is directly tied to performance of banks. A similar study by Tahir and Sajjad (2013), on commercial banks in Lahore indicated that training significantly influenced bank performance.

Okwee (2011) carried out research on corporate governance and financial performance of SACCOs in lango sub region of Northern Uganda. The research sought to establish the level of compliance with corporate governance guidelines, determine the relationship between corporate governance and risks, to examined the relationships between corporate governance and financial performance. A sample of 63 SACCOs were drawn from a population of 75 SACCOs and a questionnaire distributed to each of the SACCOs. The questionnaires were then collected, vetted and analyzed. The

findings revealed that majority of SACCOs were found to comply less with corporate governance guidelines, risk was found to be weakly and negatively correlated with corporate governance and financial performance.

Grier (2007) suggests that management is considered to be the single most important element because it plays a substantial role in a bank's success; however, it is subject to measure as the asset quality examination. The management has clear strategies and goals in directing the bank's domestic and international business, and monitors the collection of financial ratios consistent with management strategies. The top management with good quality and experience has preferably excellent reputation in the local communication.

Management relates to the competency of the bank's managers, using their expertise's to make subjective judgments, create a strategic vision, and other relevant qualities. Management is the key variable which determines a banks' success. The evaluation of the management is the hardest one to be measured and it is the most unpredictable (Golin, 2001). Research indicate highest rating in the management quality displays a strong performance of financial institutions as well as high competency of its human capital, which would help the bank grow in the future (Majithiya & Pattani, 2010). On the contrary, Christopoulos et al. (2011) show a continuous decreasing trend in the management ratio over the years. It infers that many of the loans were bad, approved as a result of the poor borrower analysis, a task that falls within the responsibilities of the management of the institution

Olweny (2011) adopted the ratio of operating costs to net operating income to compute the operating efficiency for the commercial banks in Kenya, and findings indicate that operational costs inefficiency leads to poor profitability. The operating expenses to assets ratio indicate expenses in relation to the size of a bank. It was similar with cost to income ratio but it was not affected by the changes in interest. Atikogullari (2009) observed the management quality situation of the Northern Cyprus banking sector for the period of 2001 to 2007 by using operating expenses to assets ratio.

Maseki (2012) studied the impact of knowledge management on performance of commercial banks in Kenya. The study found that knowledge management greatly

affected performance of the commercial banks. According to the study knowledge management enhances product and service quality; increases productivity and innovative ability. The study mentioned that knowledge management improves performance of employees in their duties in the bank and enhances employee competence. Knowledge management enhances the ability of the bank to develop new innovative financial products for its customers, turnaround time of employees, communication process in the bank and profitability of the bank.

Kimari (2013) undertook a study on the credit risk management and SACCO financial performance in Kenya. The study used capital adequacy, asset quality, management efficiency, earnings and liquidity as the independent variables and ROE as the dependent variable. The study found that the model significantly explained SACCO financial performance. A positive relationship was found to exist between all the CAMEL components and financial performance. The study recommended that with regard credit risk management, the management should undertake measures to improve Capital adequacy, Asset quality, Management efficiency, Earnings ability and Liquidity.

2.4.4 Earnings Ability and Financial Performance of Savings and Credit Societies in Kenya

Ausina-Tortosa (2012) examined earnings quality and bank performance in Spain. The study found that contrary to expectations, earnings management did not significantly influence profitability. Kongiri (2012) investigated the effect CAMEL variables on the efficiency of commercial banks. The study found that capital adequacy, earnings and liquidity ratio have a negative relationship to efficiency ratio while Management quality and asset quality have a positive relationship. The study mentioned that the earnings ability reflects the bank's ability to absorb losses, expand its financing, as well as, its ability to pay dividends to its shareholders, and helps develop an adequate amount of own capital (Kongiri, 2012).

Olando, Mbewa and Jagongo (2012) studied financial practice as determinant of growth in SACCOs in Kenya. The study found that growth of SACCOs wealth depended on financial stewardship, capital structure and funds allocation strategy.

According to the study, most SACCOs inadequately complied with their by-laws. Their incomes from investments did not adequately cover their costs.

The study recommended a continuous review of credit policies, establishment of irrecoverable loan provision policies, development of sound staff recruitment policies and the use of appropriate financing mix. Further, he recommended that the Government should review legal framework to ensure that institutional capital is used to grow SACCOs' wealth.

2.4.5 Liquidity and Financial Performance of Savings and Credit Societies in Kenya

Marozva (2015) examined the relationship between liquidity and performance of commercial banks. The study used net interest margin as the proxy for performance. The study found a negative significant deterministic relationship between net interest margin and funding liquidity risk. However, an insignificant co-integrating relationship was found between net interest margin and measures of liquidity.

Abang-anoh (2012) undertook a study on the effect of liquidity on performance of commercial banks. The study found a positive relationship between liquidity and the existence of any banks. According to the study adequate liquidity enable banks to mandate it risk and thereby helping to sustain public confidence in the operation of the banking institution which in turn leads to more patronage and consequently more profit.

Halling and Hayden (2006) found out that a bank should define and identify the liquidity risk to which it is exposed for all legal entities, branches and subsidiaries in the jurisdictions in which it is active. A bank liquidity needs and the sources of liquidity available to meet those needs depend significantly on the bank business and product mix, balance sheet structure and cash flow profiles of its on and off-balance sheet obligations. As a result, a bank should analyze on and off-balance sheet position, including the effect of embedded options and other contingent exposures that may affect the bank sources and uses of funds, and determine how it can affect liquidity risk. A bank should consider the interactions between exposures to funding liquidity risk and market liquidity risk (Jeanne and Svensson, 2007). Elsiefy (2013) justify that

banks with sufficient investment in liquid assets have the ability to withstand liquidity crisis. The challenge is to identify the optimum amount of liquidity given by the risk return tradeoff. The researcher further argued that higher liquidity in an institution compared to the average for the sector also reflect inefficiency of the banking institution. The higher the liquidity the lower the profitability, this imply that there is a negative relationship between profitability and liquidity.

Konadu (2009) studied factors determining the liquidity trends of selected banks so as to ascertain the profitability trend of the selected banks with the aim of analyzing and establishing the relationship between bank liquidity and performance levels in Ghana. Data was collected between 2006 and 2009 from commercial banks listed at the Ghanaian Stock Exchange which included Standard Charted Bank Ghana Ltd, SG-SSB Ltd and Cal Bank Ltd. The liquidity ratios used for the study were cash ratio, current ratio, quick ratio and net operating cash flow ratio whereas the profitability ratios consisted of net profit margin, return on assets, return on equity and net asset turnover. Trend analysis was adopted so as to achieve the set objective. The research findings established that there was no positive relationship between liquidity trend and profitability whereas a negative relationship existed between liquidity and bank profit in Ghana.

Omino (2014) analyzed the liquidity mitigation measures and performance of SACCOs in Kisumu County. The study found that liquidity risk mitigation approaches adopted by different SACCOs had a significant effect on their financial performances. The study revealed that SACCOs adopted a more cautious position in their current liabilities to ensure that operating cash flows were sufficient to cover the short terms obligations entered by the firms. Further, the study revealed that debtor collection periods were longer to encourage voluntary membership and consequently the SACCOs were either unjustifiably constraining their creditor payment periods or were conditioned to do so. The study recommended the deployment of efficient systems to strengthen liquidity risk control fundamentals. SACCOs should also consider seeking professional guidance towards adopting policies on asset and liability management.

Kabamba (2012) analyzed liquidity management and growth of microfinance institutions in Uganda a case study of Kibuku, the study revealed that if liquidity is

well managed, the costs associated with it such as loss of public confidence, high administrative costs and close of business was dealt with. The need for sound liquidity management strategies is particularly critical since measures should be properly implemented. Conclusions drawn from the study showed that there was a positive relationship between liquidity and growth of the institution. If liquidity is properly managed, the costs associated with it will be minimized and this will drastically increase the growth of the micro finance institutions.

2.4.6 Internal factors of Financial Performance on Financial Performance of Savings and Credit Societies in Kenya

Internal factors of financial performance are critical to all the shareholders. The value of shareholders is dependent on several factors including: the current profitability of the company, its risks, and its economic growth essential for future company earnings. All of these are major factors influencing the market value of a company (Chijoriga, 2007). Tomuleasa (2014) studied the determinants of European bank performance. The study focused on bank specific factors and macroeconomic variables. The study mentioned that inflation effect on profitability is tethered to the capacity of bank's management to forecast inflation. The study established mixed findings; banks were able to correctly anticipate inflation had the opportunity to adjust their interest rates accordingly and consequently to earned higher profits. The performance of those that could not predict inflation was adversely affected.

Menicucci and Paolucci (2016) analysed bank specific factors and profitability in European banking sector in order to determine the impact of internal factors on achieving high profitability employing regression analysis done on unbalanced panel dataset related to 28 European banks over the period 2006 to 2015. The largest bank of any single country of the European Union was selected and regression results indicated that capital adequacy ratio and bank size have positive and significant impact on bank performance in Europe, while higher asset quality results in lower profitability levels. Findings also suggest that banks with higher deposit ratio tend to be more profitable. The findings also provided interesting insights into the characteristics and practices of profitable banks in Europe. First, the results offer new comprehensive insights into the factors determining the profitability of commercial banks in Europe.

Single bank's characteristics explain a portion of within country variation in European bank profitability, suggesting that much more attention should be dedicated on bank specific factors in order to increase the profitability. next, the study could be a support for investors in their decision-making process and particularly could be useful for the global institutional investors looking for profitable investment opportunities in European banking institutions.

Sufian and Chong (2008) studied the determinants of financial performance under profitability during the period 1990 to 2005 in Philippines banks. Results of the study indicate a direct relationship between financial performance and bank specific factors. Similarly, the empirical results suggested that the bank specific factors such as capital adequacy, asset quality and management efficiency affect profitability and by extension the financial performance of the banks. According to Sufian and Chong (2008) poor expenses management is a main contributor to poor performance. Operational expense efficiency is one way of assessing managerial efficiency in banks. strategies are likely to be more profitable. The specific items highlighted in the study are an expression of efficiency in management.

Njoroge (2008) assessed the relationship between financial performance and selected determinants for SACCOs in Nairobi, Kenya using sample size considered comprised of 30 SACCOs for the period between 2002 to 2007. Financial performance was measured using return on assets (ROA) and return on Equity (ROE). Factors used for regression against ROA were size of the SACCO, loans to total Assets, liquidity to total loans, operating expenses to total assets and growth rate of loans. Asset Size, loans to total assets, liquidity to total assets and growth rate of loans were positively correlated to financial performance. Operating expense ratio was negatively related to performance. Capital ratio was also positively correlated to ROA

Ozgur and Gorus (2016) analysed the impact of bank specific and macroeconomic factors on deposit bank profitability in Turkey using OLS methodology to construct multiple regression analysis. The study employed the monthly data for the period over 2006:1 to 2016:2. Empirical results indicated that equity over total assets, non-performing loans to total cash loans, net interest revenues to average total assets, and central bank policy interest rate have a positive and significant impact over return on

assets (ROA) while noninterest income over total assets, market share of deposit banks in banking sector, operational expenses to average total assets, and exchange rate are statistically insignificant. This indicated that recent global financial crisis on bank performance is significantly negative. Indeed, result of this study provide supportive evidence that financial crisis adversely affected banking industry performance in Turkey.

2.4.7 Sensitivity to Market Risk on Internal Factors of Financial Performance of Savings and Credit Societies in Kenya

The inclusion of moderating variable in this study may potentially increase the predictive validity of the model under investigation and explain the inconsistent findings in various disciplines (judge et al, 2001). In research moderating variable have enjoyed popularity in literature in recent years of which scholars have appreciated its importance in predicting sensitivity to market risk for instance (Kenny, 1986 and Sharma et al, 1981).

Sensitivity to market risk is the degree to which changes in interest rates, foreign exchange rates, commodity prices, or equity prices can adversely affect capital. Boyd and Smith (2000) conducted a study on the effect of inflation on the performance of commercial banks. The study found that significant negative relationship existed between inflation and the performance of the banking sector. According to the study, a rise in inflation reduces lending activities and equity development. This is because an increase in inflation diminishes the real return on and According to Jorian, (1997), extreme value theory (EVT) is used as a typical implement along with financial institution to describe the risk of a market portfolio. It will measure the utmost loss of the portfolio worth that will take place over a given time at some explicit confidence level due to uncertain market factors.

Milanova (2010) examined sensitivity to market risk management in banks. The study focused on interest rate risk management using the Value at Risk (VAR) model. The study found that market interest rates, currency exchange rates, prices of shares and exchange tradable commodities have an adverse impact on bank incomes and capital

position. The study recommended rigorous risk management to mitigate against the risk.

Determinants of European bank performance was studied and it focused on bank specific factors and macroeconomic variables. The study mentioned that inflation affect profitability and is tethered to the capacity of bank's management to forecast inflation. The study established mixed findings that banks were able to correctly anticipate inflation and had the opportunity to adjust their interest rates accordingly and consequently to earned higher profits. The performance of those that could not predict inflation was adversely affected (Tomuleasa, 2014).

In this study sensitivity to market risk is expected to moderate internal factors on financial performance of Savings and Credit Societies in Kenya. Sensitivity to market risk stands for financial system; it covers an assessment of exposure to market risk. The rating system is designed to take into account and reflect all significant financial and operational factors assessed in their evaluation of an institutions performance. Institutions are rated using a combination of specific financial ratios and examiner qualitative judgments and the possibility of an investor to experience losses due to factors that affect the overall financial market (Brockett, Cooper, Golden, Rousseau & Wang, 1997).

Ngalawa and Ngare (2013) showed that bank's exposure to interest rate risk or income gap determines the structure of the financial position. They analyzed interest rate sensitivity gaps obtained from financial accounting reports for 10 commercial banks listed in the Nairobi securities exchange for the period 2008 to 2012. Findings indicate that there is large exposure to interest rates that can be predicted through the income gap and also sensitivity of income gaps to market interest rates as determined by the CBK through treasury instruments. Recommendation indicate that research on wider sample of banks over a longer time series period be established on comprehensive effect of interest

Gachua (2011) studied on the effect of foreign exchange exposure on a firm's financial performance of a case of 32 selected listed companies in the Kenya Nairobi Stock Exchange. The data analysed was for the period covering years 2001 to 2010. Results

indicated that listed firms use the income statement and the owners' equity account to record foreign exchange differences. The research concluded that unrealized foreign exchange gains or losses had an effect on the Net Income of listed companies as it was posted to either income statement or owners' equity. The market risks rising rate of environment exposure posed by increases in interest rates and inflation rate to unprepared financial institutions like SACCOs are very vast. A rising rate of market risk exposes institutions like SACCOs with liability-sensitive positions to declines in net interest income. Effect of sensitivity to market risk on internal factors of performance was tested following adopted model is similar to that used by many of the studies done in the area of moderating effect Muiruri, Memba and Njeru (2015) and Ongore and Kusa (2013).

2.5 Critique of Reviewed Literature

More research on has been done in the banking sector and very few on SACCOs. Naceur and Kandil (2006) examined the impact of capital requirement on the profitability of commercial banks in Egypt. The study differs in scope from the current study as it was not carried out in Kenya and focused on commercial banks and not on SACCOs. (Saona, 2010) investigated the relationship between the capital structure of commercial banks in the United States and performance. This study differs from the current study as it was carried out in USA and its scope was limited to commercial banks also moderating effect was not studied. Banks and SACCOs are unique in terms of operations and therefore findings may not be generally generalizable.

Luqman (2014) undertook a study on the effect of credit risk on performance of banks in Nigeria. This study differs from the current one as it only focused on credit risk as a determinant of performance but did not address the other determinants identified in this study. Kinyua (2013) investigated the relationship between the SACCO size and financial performance in Kenya. Manyuanda (2013) examined the effect of nonperforming loans on the performance of SACCOs in Nairobi, Kenya. The study's objective differs from the current one.

Olando (2013) carried a study on the assessment of financial practice as a determinant of growth for SACCOs wealth in Meru county, Kenya. The Study was a case study for

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SACCOs in Meru county and hence bias of results applicable in only one county. Moreover, the study obtained information from 44 SACCOs and did not distinguish which were deposit taking SACCOs and which ones applied to non-deposit taking SACCOs.

Reviewed literature has looked at determinants on performance without considering the moderating effect of sensitivity to market risk on the effect of internal factors on financial performance of savings and credit societies in Kenya. The current study aims to fill this gap. Reviewed studies done in Kenya tend to confine themselves to specific counties, further these studies fail to employ the moderating variable of sensitivity to market approach in examining SACCO performance.

2.6 Research Gaps

The literature review reveals the existence of many knowledge gaps with respect of effect of internal factors on financial performance of deposit taking saccos especially in the context of Kenya. This is because most of the reviewed literature are empirical researches done on determinants of profitability and financial performance of on African and specifically non-Kenyan banks. In addition, the literature review shows the existence of non-conclusive studies with varying results.

A review of literature available was mostly focused on developed and developing countries on effects of internal factors on financial performance of banks and very few on SACCOs and hence limited knowledge. This study appreciates the role played by the important corporative sector which contributes 31% of national savings and the greater contribution it can achieve if financial performance is improved in the sector. For instance, Naceur and Kandil (2006), examined the impact of capital requirement on the profitability of commercial banks in Egypt, the study was also confined to Egypt.

Studies in Kenya also focused on performance of commercial banks, for instance Odunga *et al,* (2013), who studied the effect of credit risk and capital adequacy on the performance of commercial banks in Kenya. Those that concentrated on SACCOs did not measure the moderating effect of sensitivity of market risk on internal factors of savings and credit association. Kongiri (2012) used CAMEL variables to investigate

the efficiency of commercial banks in Kenya. Nyambere (2013) undertook a similar study but focused on the role credit risk management on performance of SACCOs. Hence, the studies failed to identify the moderating variable.

Thus, the study contributes to the existing knowledge by offering solution to the performance of savings and credit societies whose going concerns are threatened on daily basis, the SACCOs financial performance continuously weakens. The study also offers special insight on importance of capital adequacy, asset quality, management efficiency and liquidity on financial performance and its moderating effect of sensitivity to market risk. This research therefore will add to the existing body of knowledge on effect of internal factors on financial performance of savings and credit societies in Kenya also will add value to existing literature and can be used as a guide to SACCO policy development for the general good of the country economy and members.

2.7 Summary

The chapter reviewed several theories including market power theory, liquidity theory, efficient structure theory, monetarist theory, portfolio selection theory, economic efficient theory and expense preference theory. These theories were found applicable to the research as they provided a background on the variables supporting financial performance in deposit taking SACCOs. In addition, these theories supported the conceptual framework which is the core basis and fundamental base for this research. Thus, the study contributed to the theories of finance on the importance of the hypothesis postulated and tested on capital adequacy, asset quality, management efficiency liquidity and sensitivity to market risk, on financial performance.

Empirical review also was conducted where past studies both global and local were reviewed in line with the following criteria, title, scope, methodology resulting into a critique; it is from these critiques that the research gap was identified. The chapter also outlined the conceptual framework of the study, which reflected the various variables under study

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter discusses the methodology, which was used in the research. It outlines the research philosophy, research design, study population, sampling frame, sample size determination and sampling technique, data collection instruments, data collection procedure and pilot testing. The section also describes the data analysis and presentation methods. The statistical measurement model used in the analysis and tests for hypotheses are also captured in this chapter.

3.2 Research Philosophy

Research philosophy relates to the development of knowledge and the nature of that knowledge (Saunders, Lewis & Thornhill, 2009). The question of what is, or should be regarded as acceptable knowledge in a discipline was the main focus of epistemology, or the study of how knowledge develops. Epistemology is categorized as descriptive where one can describe the philosophical position than can be discerned in research. According to Goldkuhl (2012), there are three epistemological positions including realism, interpretivism and positivism.

This study adopted a positivist research paradigm which is an epistemological position. Positivism is sometimes referred to as 'scientific method' or 'science research', and is based on the rationalistic, empiricist philosophy that originated with Aristotle, Francis Bacon, John Locke, August Comte, and Emmanuel Kant (Denzin & Giardina, 2016). Positivism is an epistemology that advocates for the application of methods of natural sciences to the study of social reality and beyond. It is characterized by a belief in theory before research and statistical justification of conclusions from empirically testable hypothesis, the core of tenets of social science (Denzin & Giardina, 2016). The current study is founded on several theories and testable hypotheses and hence positivist philosophy was appropriate.

3.3 Research Design

A research design is a general plan or strategy for conducting a research study to examine specific testable research questions of interest (Lavrakas, 2008). According to Chandran (2004), a research design outlines what techniques was used to gather data, what kind of sampling strategies and tools was used and how was time and cost constraints be dealt with. The study employed a Quasi-Experimental Design. The design is suitable for those studies that seek to establish a cause and effect relationship between two or more variables.

The quasi-experimental design was most appropriate design for this study since it helped in understanding the cause and effect relationship between internal factors and financial performance of deposit Savings and Credit Societies in Kenya. Through the design, the researcher was able to establish the cause and effect relationship between internal factors (capital adequacy, asset quality, management efficiency, earnings ability and liquidity) and financial performance of Savings and Credit Societies in Kenya.

3.4 Target Population

A population is a well-defined set of people, services, elements and events, group of things or household that are being investigated (Ngechu, 2004). Hyndman (2008) describes a population as the entire collection of things in which we are interested. Polit and Beck (2003) define population as the aggregate or totality of those conforming to a set of specifications. By population the researcher means the complete census of the sampling frame.

The target population refers to the entire set of units for which the survey data was used to make inferences. The target population of this study was 83 DT-SACCOs in Kenya (see appendix II). The accessible population was all the 83 registered deposits taking SACCOs licensed by SASRA as at 1st January 2012 to December 2016, with audited accounts and have been in operation for the last five years.

Therefore, the study used the inclusion criteria to select a total of 83 SACCOs registered by SASRA as at 1st January 2012. The choice of the SACCOs licensed as at 1st January 2012 to December 2016 was justified since they had audited financial

statements and, therefore, secondary data collected from these financial accounts was credible and generally acceptable.

3.5 Sampling Frame

Mugenda and Mugenda (2003) and Kothari (2004) define the term sampling frame as a list that contains the names of all the elements in a universe. Polit and Beck (2003) define sampling frame as the technical name for the list of the elements from which the sample is selected from. The sampling frame describes the list of all population unit from which the sample will be selected, (coopers & Schindler, 2003). The sampling frame for the study consisted of all 83 licensed DT-SACCOs in Kenya, which were in operation as at 1st January, 2012 and still in operation as at 31st December 2016 and with audited accounts as they appear in the SASRA database (SASRA, 2016).

3.6 Sample Size and Sampling Technique

A sample is a way of selecting a portion of the population which adequately represents the entire population (Chandran, 2004). Gerstman (2003) mentioned that a sample is needed because a study that is insufficiently precise lacks the power to reject a false null hypothesis and is a waste of time and money. Therefore, the researcher determined the sample size requirements of a study before collecting data. Census methodology was used in the study since the population was small.

The number of respondents was 83 finance managers, one from each of the SACCOS. The choice of the finance managers as the unit of observation was justified since they have adequate information regarding internal factors that affect financial performance of their organizations.

This study used purposive sampling procedure to identify the sample units. Purposive sampling involves deliberate selection of particular units of the universe for constituting a sample which represents the universe (Miller & Yang 2008; Kothari 2004). Burns and Grove (2003) emphasized that purposive sampling enables the researcher to select specific subjects that provide the most extensive information about the problem being studied. Secondary data and primary data were used. The study covered a period of 5 years (2012-2016) and the data were obtained from the audited financial statements of selected savings and credit societies in Kenya.

The sample was selected on the basis of the availability of audited accounts of SACCO for a continuous period of 5 years from 2012 to 2016 and the financial statements obtained from SASRA for SACCOs operating and with audited accounts in Kenya. Only 83 SACCOs had audited financial statements for 5 consecutive years. The study therefore focused on these 83 societies with audited financial statements. A census of all the 83 SACCOs that had audited accounts and remained in existence since 2012-2016 was done.

3.7 Data Collection Instruments

A questionnaire is a data collection tool that is used to record the data and it contains a list of questions directed to particular respondents and a definite purpose which is to meet a set objective as per the study or research. The questionnaire in this study was divided into three parts. The first part asked questions in regard to the demographic structure of the SACCO (there name of the SACCO, ownership category and duration of operations). The second part focused on the independent variables and the third part focused on dependent variable (See appendix I). The choice of questionnaires in the collection of primary data was justified since they give respondents freedom to express their views or opinions more objectively.

3.8 Data Collection Procedure

Kothari (2004) describe primary data as that which is raw and is collected for the first time, and thus happen to be original. Louis, Lawrence and Morrison (2007) describes primary data as those items that are original to the problem under study while Ember and Ember (2009), describe primary data as data collected by the investigator in various field sites explicitly for a comparative study.

The researcher received introductory letter from the University to facilitate the study. The entry point to the SACCOs was through the finance departments. The questionnaires were administered through drop and pick method to all Finance Managers of deposit taking SACCOs. The researcher used research assistant to distribute the questionnaires which were completed by the respondent. Before commencing data collection, the research assistant was adequately trained to understand the questionnaires in order to effectively collect data, thereafter the

researcher first booked appointment with all Financial Managers (respondents). Upon completion, the questionnaires were collected by research assistant to ensure high completion rate and return of the questionnaires.

A secondary data template was used to collect secondary data from published audited accounts of the firms. Secondary data on capital adequacy, asset quality, management efficiency, earnings ability and liquidity management and financial performance of SACCOs was gathered (See appendix III). Coopers and Schindler (2008) postulates that secondary data is a useful quantitative technique for evaluating historical or contemporary, confidential or public records, reports, government documents and opinions.

3.9 Pilot Testing

The study carried out a pilot test to test the validity and reliability of the questionnaires in gathering the data required for the purposes of this research study. According to Nieswiadomy (2008), approximately 10% of the population is recommended for pilot study. The rule of the thumb suggests that 5 % to 10 % of the target sample should constitute the pilot test (Cooper & Schindler, 2011; Creswell, 2003; Gall & Borg, 2007).

Therefore, the researcher used 10% of total population which was 8 deposits taking SACCOs for the purpose of carrying out a pilot study. The pilot study was carried out in 8 deposit taking SACCOs in Nakuru County before actual research so as to get an indication of the expected responses with a view of identifying ambiguous and unclear questions as well as detect possible weaknesses in the design and instrumentation as suggested by Coopers and Schindler (2008).

According to Mugenda (2003), research instruments need to be valid and reliable in order to produce useful results. The 8 SACCOs selected for pilot study were excluded from the main study so as to avoid biasness.

3.9.1 Validity of the Research Instruments

Validity was accessed using content validity. Content validity was achieved through piloting the questionnaires among 8 selected SACCOs as to establish the relevant and

representativeness of questionnaires as noted by (Eby, 1993). Reliability was tested using the 8 questionnaires which were piloted and not included in the final study sample. This avoided response bias in case they filled the same questionnaire twice. Eight questionnaires were coded and input into Statistical Package for Social Sciences [SPSS] for running the Cronbach reliability test.

3.9.2 Reliability of the Research Instruments

The reliability of the questionnaire was tested using the Cronbach's alpha correlation coefficient with the aid of Statistical Package for Social Sciences (SPSS) software. The researcher employed Cronbach's alpha coefficient statistical procedure to assess reliability of measures as recommended by (Mugenda & Mugenda, 2003). As a rule of thumb, reliability of 0.7 and above is recommended for research purposes to denote research and instrument as reliable, (Robert et al., 2006). Cronbach's alpha coefficient is one of the most commonly used indicators of internal consistency.

3.10 Data Analysis and Presentation

Data Analysis is the processing of data to make meaningful information (Saunders, Lewis & Thornbill, 2009). According to Zikmund et al (2010), data analysis is the application of way of thinking to understand the raw data collected with the aim of determining patterns and summarizing the relevant details revealed in the research study. Data analysis is a process of inspecting, cleaning, transforming and modeling data with the goal of discovering useful information, suggesting conclusions and supporting decision making. According to Shamoo and Resnik, (2003), various analytic procedures provided ways of drawing inductive inferences from data and distinguishing the signal from the statistical fluctuations present in the data. To determine the patterns revealed in the data collected in selected variables, data analysis was guided by the objectives of the research study.

According to Hyndman (2008), data processing involves translating the answers on a questionnaire into a form that can be manipulated to produce statistics. Data processing involves data entry, coding, editing, and monitoring the whole data processing procedure. The data collected was processed using Statistical Package for Social

Sciences (SPSS) and STATA software. The software was used to produce frequencies, descriptive and inferential statistics which were used to derive generalizations and conclusions regarding the population. The descriptive statistics used included percentages, means and standard deviations while the inferential statistics included Pearson correlation coefficient and regressions analysis. The data collected from primary and secondary sources were used by the researcher to analyze effect of internal factors on financial performance of savings and credit societies in Kenya. The findings were presented using Tables and Figures.

Multiple linear regression models were used to measure the relationship between the independent variables and the dependent variable which is explained in the model below. The adopted model is similar to that used by many of the studies done in the area of internal factors affecting financial performance, Kamau (2010); Kosiba (2012) and Miriti (2014). In this research the following regression equation model was used to test the statistical significance of the study hypotheses:

$Y = \beta o + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \varepsilon$

Where:

Y= Financial performance

X_1 = Capital adequacy

X_2 = Asset quality

X_3 = Management efficiency

X_4 = Earnings ability

X_5 = Liquidity

$\beta_0, \beta_1, \beta_2, \beta_3, \beta_4, \beta_5$ = Regression coefficients of changes included in Y by each X value

ε = Error term which is normally distributed with a mean and variance of zero.

The moderating variable in this research study was sensitivity to market risk. The moderating effect of sensitivity to market risk was measured using standard deviation of variance, testing for moderating was done following adopted model similar to that used by Ongore and Kisa, 2013.

$Y = \beta_o + \beta_1 X_1.M + \beta_2 X_2.M + \beta_3 X_3.M + \beta_4 X_4.M + \beta_5 X_5.M + \epsilon$

Where:

M = Moderator (Sensitivity to Market Risk)

$X_1.M$ = Capital adequacy * Sensitivity to Market Risk

$X_2.M$ = Asset quality * Sensitivity to Market Risk

$X_3.M$ = Management efficiency * Sensitivity to Market Risk

$X_4.M$ = Earnings ability * Sensitivity to Market Risk

$X_5.M$ = Liquidity * Sensitivity to Market Risk

ε = Error term which is normally distributed with a mean and variance of zero.

The equation above shows the moderating effect of sensitivity to market risk on the internal factors on financial performance of SACCOs.

3.10.1 Diagnostic Tests

According to International Business Machines (IBM) (2010), the assumptions of linear regression must be met by the data to be analyzed by the researcher. These assumptions states that the coefficients must be linear in nature, the response errors should follow a normal distribution and the errors should have a common distribution. Normality, multicollinearity and heteroscedasticity diagnostic tests were carried out to ensure that data suits the basic assumptions of classical linear regression model.

To test normality graphical representation of residues was used. The purpose of normality test was to assess whether the sample was obtained from a normally distributed population. Condition for normality is required for one to fit a linear regression model and data that is not normally distributed consequently does not qualify for linear regression analysis (Sekaran, 2003).

For multicollinearity test, Variance Inflation Factor (VIF) was used. The rule of thumb is that a VIF for all the independent variables is less than 10 (VIF ≤ 10) indicate no Multicollinearity. On the other hand, a VIF of more than 10 (VIF ≥ 10) indicates a problem of Multicollinearity.

Heteroscedasticity was tested using Modified Wald test. The null hypothesis is that the data does not suffer from heteroskedasticity since the p-value is greater than the 5%. The null hypothesis would be rejected if the reported p value was less than 0.05, otherwise, the null hypothesis would be accepted.

3.11 Operationalization of Variables

The study's independent variables were represented by CAMEL variables. The dependent variable was represented by financial performance; the moderating variable was represented by sensitivity to market risk. Sensitivity to market risk was tested using standard deviation of variance.

Table 3.1: Operationalization of Variables

Variable	Description	Indicator	Measurement Scale	Type of Data	Tools of Analysis
Independent Variable Capital adequacy	Capital/total performing assets	-Capital adequacy ratio -Debt equity ratio -Core capital ratio	Ratio	Primary and secondary	Ratio Analysis
Asset quality	Non performing loans/total assets	-Gross NPA to total advances. -Loan loss coverage ratio -Loan loss provision ratio.	Ratio	Primary and secondary	Ratio Analysis
Management efficiency	No of active borrowers/no of management personnel – loans officer	-Expenditure to income ratio -Business per employee -Profit per employee	Ratio	Primary and secondary	Ratio Analysis
Earning ability	Financial income/average total assets	-ROA -ROE -EPS	Ratio	Primary and secondary	Ratio Analysis
Liquidity	Projected cash inflow/cash outflow	-Liquid asset to total assets -Cash deposit ratio -Credit deposit	Ratio	Primary and secondary	Ratio Analysis
Dependent variable Financial performance	Profitability Return to members Institutional capital	- Level of compliance - Profitability - Dividend paid	Ratio	Primary and secondary	Ratio Analysis
Moderating variable Sensitivity to market risk	Sensitivity to inflation Sensitivity to interest rate	Yearly average inflation Yearly average interest rate	ratio	Primary and secondary	Standard deviation of variance

CHAPTER FOUR

RESEARCH FINDINGS AND DISCUSSIONS

4.1 Introduction

This chapter represents the empirical findings and the results of the application of the variables using techniques mentioned in chapter 3. The unit of analysis was a SACCO as the study targeted all 83 licensed SACCOs as at 1st January 2012 and still in existence as at 31st December 2016 and remained in operation for the last five years. Secondary data and primary data were used. The study covered a period of 5 years (2012-2016) and the data were obtained from the audited financial statements of selected savings and credit societies in Kenya. The sample was selected on the basis of the availability of audited accounts of Sacco for a continuous period of 5 years from 2012 to 2016 financial year. Audited financial statements were obtained from SASRA, only 83 SACCOs had audited financial statements for 5 consecutive years, the study focused on these 83 savings and credit societies. Therefore, the study used the inclusion criteria to select a total of 83 SACCOs registered by SASRA as at 1st January 2012. Specifically, the data analysis was in line with specific objectives, hypothesis formulated and inferences made on the results obtained.

4.2 Response Rate

Table 4.1 shows the response rate.

Table 4.1: Response Rate

Response	Frequency	Percent
Returned	71	86
Unreturned	12	14
Total	**83**	**100**

Out of the 83 questionnaires administered, 71 questionnaires were properly filled and returned while 12 questionnaires were not returned. The returned questionnaires represented a response rate of 86% as shown in Table 4.1. According to Babbie (2004),

return rates of 50% are acceptable to analyze and publish, 60% is good and 70% is very good. Based on Babbie's assertion, 86% response rate was adequate for the study.

A similar argument is also supported by Hardigan, Popovici and Carvajal (2016). The high response rate was as a result of the researcher contacting the respondents through email and telephone calls before the exercise of data collection and requesting them to complete the questionnaires.

4.3 Demographic Characteristics

This section analyzes the demographic characteristics of the respondents and presents the descriptions of the respondents in terms of type of membership and period of existence.

4.3.1 Type of Membership

Table 4.2 shows the respondents type of membership.

Table 4.2: Type of Membership

Response	Frequency	Percent
Government employees	8	11.3
General public	30	42.3
Business Men and Women	33	46.5
Total	**71**	**100**

The study sought to find out the membership of the respondents. Results presented in Table 4.2 indicate that 47 % of the respondents were business men and women, 42 % of the respondents were the general public while 11% of the respondents were government employees. This implies that majority of the SACCOs members and customers were business people and the general public and that most business people relied on SACCOs for finances. This is likely to have a positive influence on SACCOs financial performance.

4.3.2 Period of Existence

The respondents were asked to indicate the number of years their organizations have been in existence. Results in table 4.3 reveal that majority (68%) of the respondents indicated more than 20 years, 16% indicated 5-10 years, 10% indicated 16-20 years while 7% of the respondents indicated 11-15 years. This implies that majority of the SACCOs have been in the market long enough to gain the prerequisite experience and relevance. This means that the SACCOs have the potential to be competitive and thus performs well.

Table 4.3: Period of Existence

Response	Frequency	Percentage
5-10 years	11	15.5%
11-15 years	5	7%
16-20 years	7	9.9%
More than 20 years	48	67.6%
Total	**71**	**100%**

4.4 Diagnostic Tests

As mentioned in chapter three, the data was tested for conformity to the assumptions of the classical linear regression model by performing a reliability test, normality test, multi-collinearity test and a heteroscedasticity test using both SPSS 22 and STATA 14.

4.4.1 Reliability Analysis

The reliability of an instrument refers to its ability to produce consistent and stable measurements. Castillio (2009) explains that reliability can be seen from two sides: reliability (the extent of accuracy) and unreliability (the extent of inaccuracy). The most common reliability coefficient is cronbach's alpha which estimates internal consistency by determining how all items on a test relate to all other items and to the

total test- internal coherence of data. The reliability is expressed as a coefficient between 0 and 1.00. The higher the coefficient, the more reliable is the test.

Table 4.4: Reliability Coefficient

Variable	No of Items	Respondents	α=Alpha	Comment
Performance of SACCOs	10	8	0.847	Accepted
Capital Adequacy	4	8	0.839	Accepted
Asset Quality	4	8	0.706	Accepted
Management Efficiency	5	8	0.711	Accepted
Earnings Ability	9	8	0.828	Accepted
Liquidity	6	8	0.865	Accepted
Sensitivity to Market Risks	8	8	0.743	Accepted

Reliability of this instrument was evaluated through cronbach alpha which measures the internal consistency. Cronbach Alpha value is widely used to verify the reliability of the construct. The findings indicated that capital adequacy had a coefficient of 0.839, asset quality had a coefficient of 0.706, management efficiency had a coefficient of 0.711, earnings ability had a coefficient of 0.828, liquidity had a coefficient of 0.865, sensitivity to market risks had a coefficient of 0.743 and financial performance of SACCOs had a coefficient of 0.847. All variables depicted that the value of cronbach's alpha are above value of 0.7 thus the study was reliable (Castillio, 2009). This represented high level of reliability and on this basis it was supposed that scale used in this study is reliable to capture the variables.

4.4.2 Test for Normality of Residuals
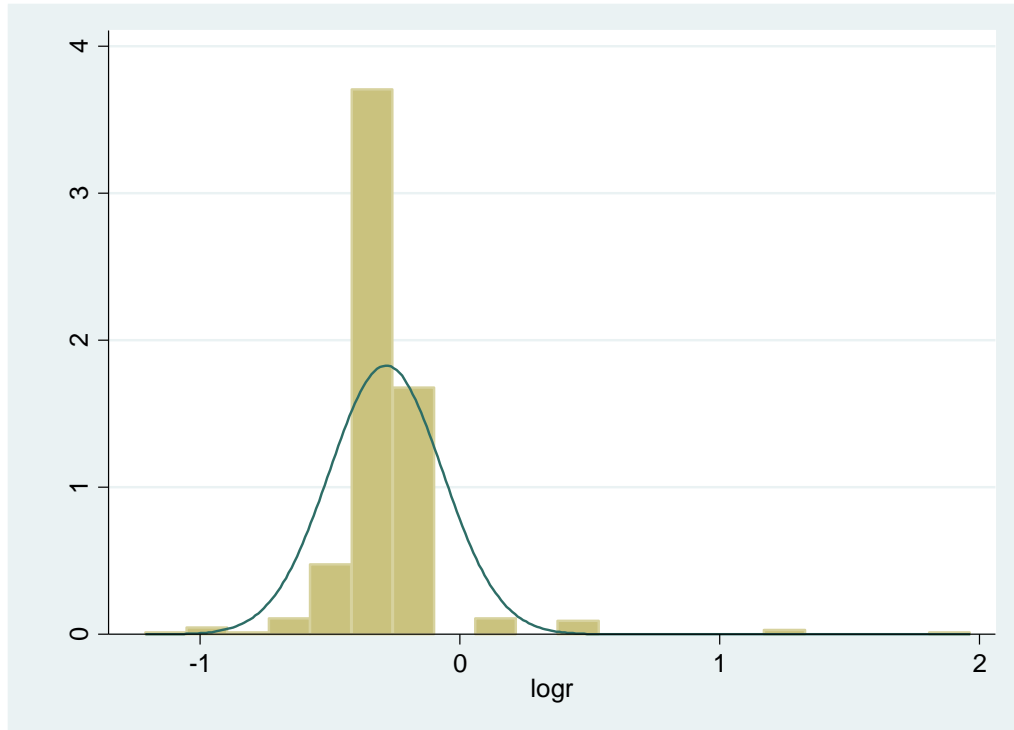
Figure 4.1: Graphical representation Normality of Residuals

Brooks (2008) indicated that normal distribution is not skewed and formalizes these ideas by testing whether the coefficient of skewness and noted that if the residuals are normally distributed, the histogram should be bell shaped. The researcher sought to assess the normality of data of the sample taken in respect of the various variables in the study. The purpose of normality test was to assess whether the sample was obtained from a normally distributed population. Condition for normality is required for one to fit a linear regression model and data that is not normally distributed consequently does not qualify for linear regression analysis (Sekaran, 2003). The graphical representation was used to test the normality of the residuals. Figure 4.1 above shows that the data was normally distributed.

4.4.3 Multicollinearity Test

Druly (2000) defined multicollinearity as a situation where independent variables are highly correlated with one another making it very difficult and sometimes impossible to separate the effects of each of these variables on the dependent variable. According

to William *et al.* (2013), multicollinearity refers to the presence of correlations between the predictor variables. Practically, this occurs when there is a simultaneous movement of two or more independent variables in the same direction and in the same rate. In severe cases of perfect correlations between predictor variables, multicollinearity can imply that a unique least squares solution to a regression analysis cannot be computed (Field, 2009). As stated by Gujarati (2004) and Brook (2008), multicollinearity exists when there is a high degree of association between independent variables. Multicollinearity inflates the standard errors and confidence intervals leading to unstable estimates of the coefficients for individual predictors (Belsley *et al*., 1980).

Multicollinearity in this study was tested using VIF which was calculated using STATA. The rule of thumb is that a VIF for all the independent and dependent variables should be less than 3 (VIF ≤ 3) indicating no Multicollinearity while a VIF of more than 10 (VIF ≥ 10) indicates a problem of Multicollinearity (Myers, 1990).

Table 4.5: Multicollinearity Test using Variance Inflation Factor

Variables	VIF
Capital adequacy	1.06
Asset Quality	1.02
Management Efficiency	1.00
Earnings Ability	1.00
Liquidity	1.00
Sensitivity to market Risks	1.08

Preliminary results indicate that there was no multicollinearity between the independent and the dependent variable. This was supported by the fact that VIF for all the variables was less than 3 (VIF ≤ 3). The VIF for capital adequacy, asset quality, management efficiency, earnings ability, liquidity and sensitivity to market risks was 1.06, 1.02, 1.00, 1.00, 1.00 and 1.08 respectively all the values were less than 3 as shown in table 4.5.

4.4.4 Heteroscedasticity Test

As stated by Gujarati (2004) and Brook (2008), heteroscedasticity is the violation of homoscedasticity. Homoscedasticity is an assumption stating that the error terms have constant variance and hence they cannot influence each other.

Table 4.6: Test for Heteroskedasticity

Modified Wald Test for Heteroskedasticity	
P = 0.0674	F = 4.0e+11

In this study heteroscedasticity was tested using modified wald test in order to test whether the error terms are correlated across observation in the panel data. The null hypothesis is that the data does not suffer from heteroskedasticity since the p-value is greater than the 5%. The null hypothesis was not rejected at a critical p value of 0.05 since the reported value was 0.0674. Thus, the data did not suffer from heteroscedasticity.

4.5 Trend Analysis

This section presents the trend of the internal factors and financial performance of SACCOs in Kenya from 2012 to 2016.

4.5.1 Capital Adequacy

68
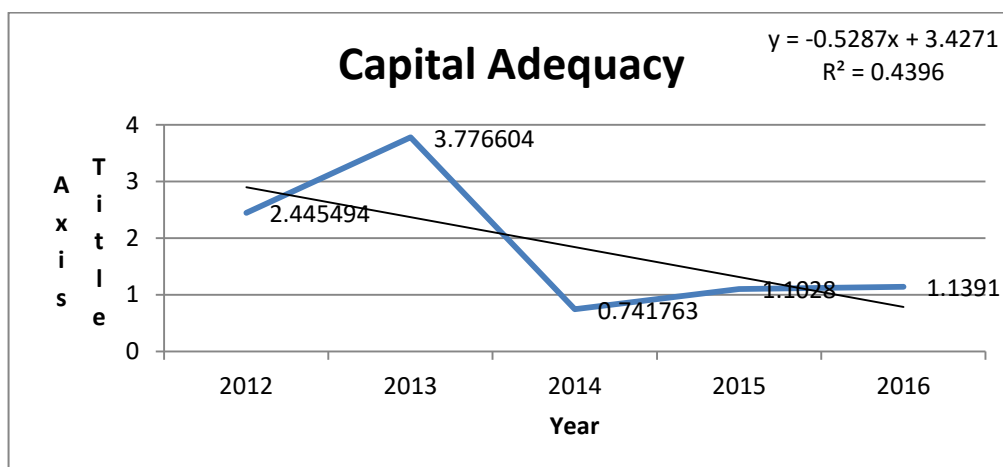
Figure 4.2: Capital Adequacy Trend

Figure 4.2 indicates the trend of capital adequacy for 83 SACCOs for the period 2012-2016. For the period 2012-2013, the capital adequacy ratio for the 83 SACCOS indicates an increase; however, for the period 2013-2014 the trend shows a drop in the capital adequacy ratio. For the period 2014-2016, the trend indicates a slight improvement in the capital adequacy ratio for the 83 SACCOs.

4.5.2 Asset Quality
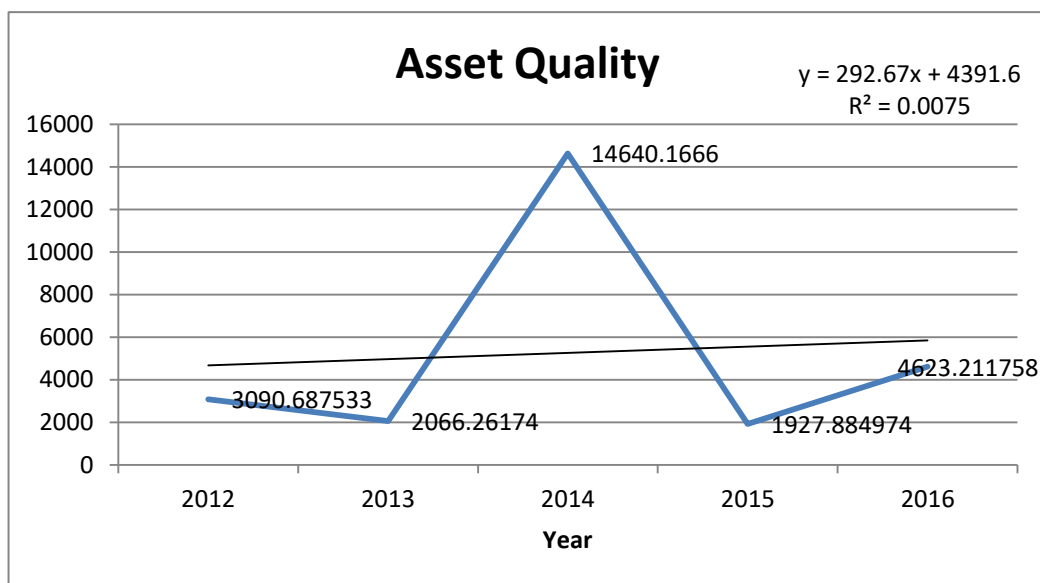
Figure 4.3: Asset Quality Trend

Figure 4.3 indicates the trend of asset quality for 83 SACCOs for the period 2012-2016. For the period 2012-2013, the asset quality ratio for the 83 SACCOs indicates a slight decline and between 2013-2014 the trend shows a rise in asset quality ratio, however, for the period 2014-2015, the trend shows a drop in the asset quality ratio. For the period 2015-2016, the trend indicates a slight improvement in the asset quality ratio for the 83 SACCOs.

4.5.3 Management Efficiency
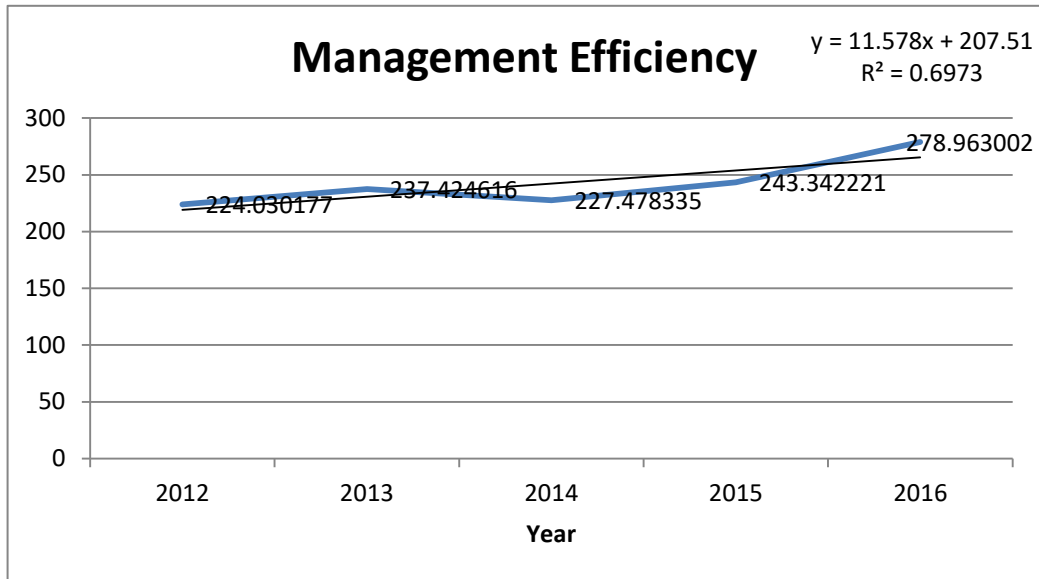
Figure 4.4: Management Efficiency Trend

Figure 4.4 indicates the trend of management efficiency for 83 SACCOs for the period 2012-2016. The trend shows a slight improvement in the management efficiency ratio throughout the measurement period. This implies that SACCOs have been making efforts to improve their management efficiency.

4.5.4 Earnings Ability
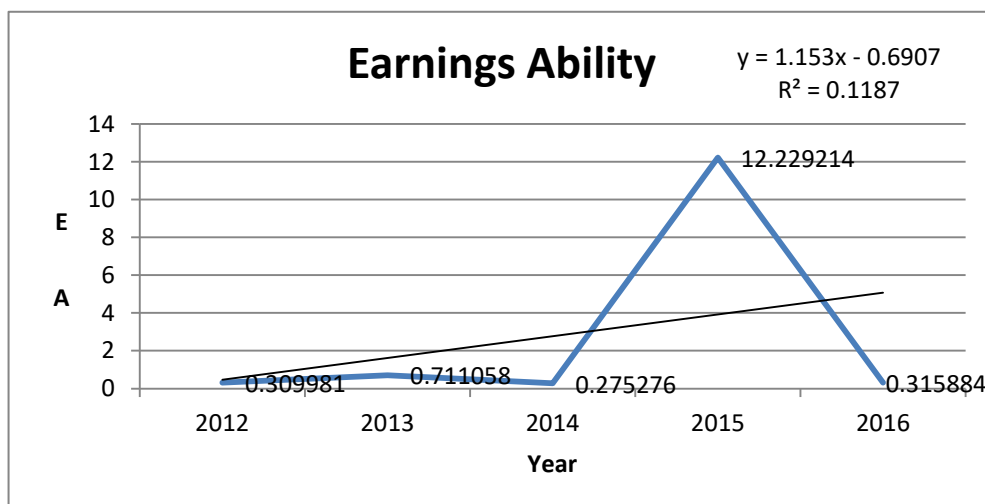
Figure 4.5: Earnings Ability Trend

Figure 4.5 indicates the trend of earnings ability for 83 SACCOs for the period 2012-2016. The figure shows a constant trend of earnings ability ratio for the period 2012-2014. However, the earnings ability ratio fluctuates for the period 2014-2016.

4.5.5 Liquidity
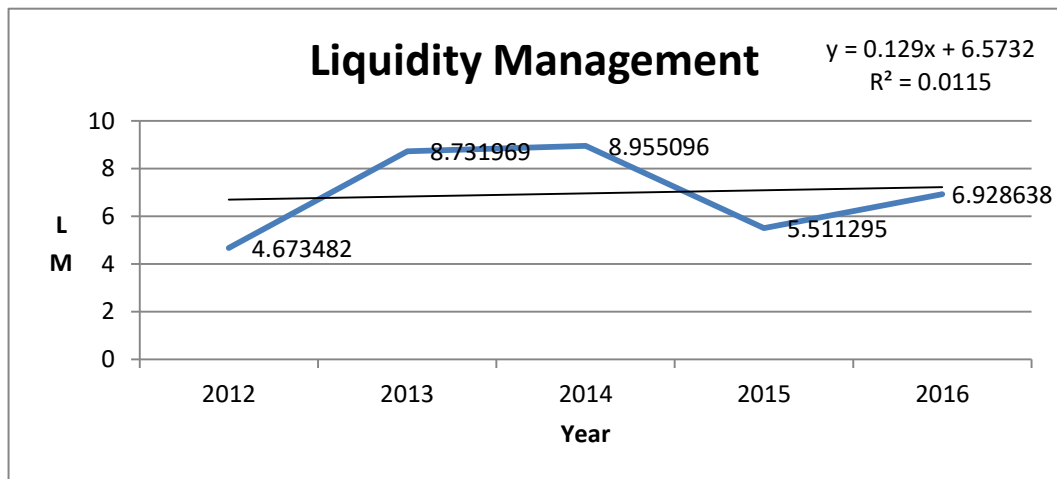
Figure 4.6: Liquidity Trend

Figure 4.6 indicates the trend of liquidity ratio for 83 SACCOs for the period 2012-2016. The figure reveals moderate fluctuations of the liquidity ratio for the period 2012-2016.

4.5.6 Sensitivity to Market Risks
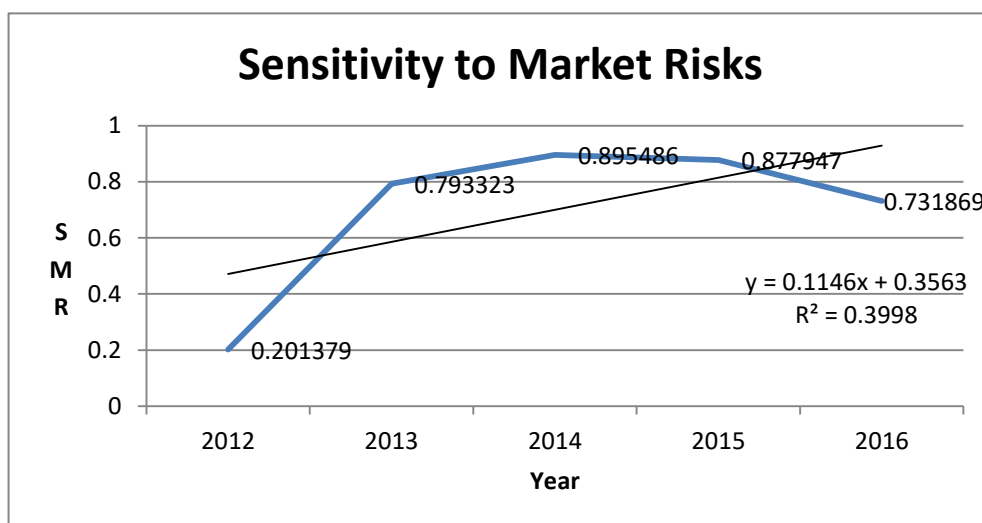
Figure 4.7: Sensitivity to Market Risks Trend

Figure 4.7 indicates the trend of sensitivity to market risk for 83 SACCOs for the period 2012-2016. The figure reveals an upward trend of the sensitivity to market risk. This could be due to fluctuations of inflation and interest rates.

4.5.7 Financial Performance Trend
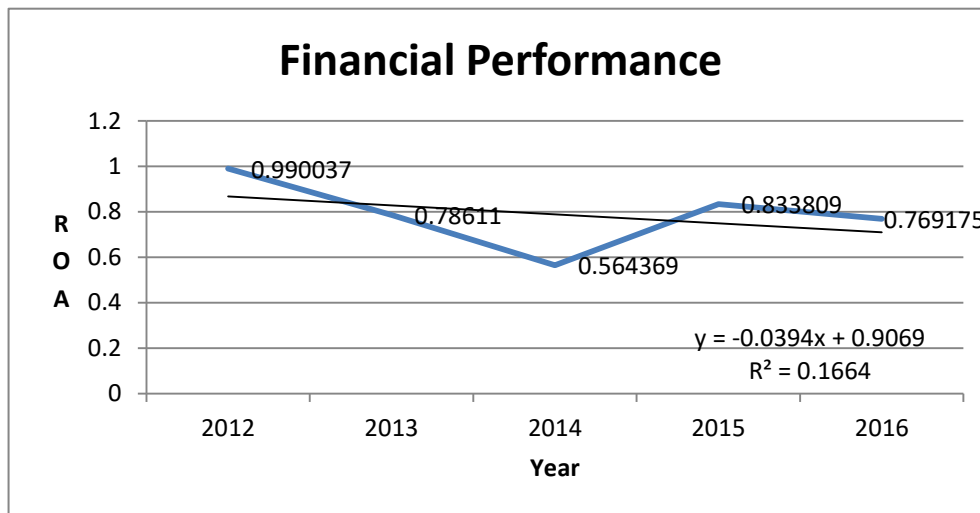
Figure 4.8: Financial Performance Trend

Figure 4.8 indicates the trend of financial performance for 83 SACCOs for the period 2012-2016. The figure shows a downward trend of the financial performance for the period 2012-2014. This could be due to fluctuations of the financial internal factors. However, the figure shows an improvement in financial performance for the period 2014-2016.

4.6 Effect of Capital Adequacy on Financial Performance of SACCOs

This section includes descriptive statistics, cross tabulation and regression analysis relating to capital adequacy and financial performance of SACCOs.

4.6.1 Descriptive Statistics

Table 4.7: Capital Adequacy Descriptive Statistics

Statement	1	2	3	3	5	Mean	Std. Dev
Observing the core capital to total asset requirement has improved the financial performance of the Sacco	0 0.00%	2.80%	0.00%	73.20%	23.90%	4.18	0.57
Observing the institutional capital to total asset requirement has improved the financial performance of the Sacco	0.00%	2.80%	0.00%	84.50%	12.70%	4.07	0.49
Observing the minimum core capital requirement of Kshs. 10 million has improved the financial performance of the Sacco	0.00%	2.80%	4.20%	80.30%	12.70%	4.03	0.53
Observing the core capital to total deposits requirement has improved the financial performance of the Sacco	0.00%	2.80%	5.60%	56.30%	35.20%	4.24	0.69
Average						**4.13**	**0.57**

The first objective of the study was to establish the effect of capital adequacy on financial performance of savings and credit societies in Kenya. The respondents were asked to respond to statements on capital adequacy. The responses were rated on a five likert scale as presented in Table 4.7. Majority of 97% (73.2%+23.9%) of the respondents agreed with the statement that observing the core capital to total asset requirement improved the financial performance of the Sacco (mean=4.18, SD=0.57), 98% agreed with the statement that observing the institutional capital to total asset requirement improved the financial performance of the Sacco, 93% of the respondents agreed that observing the minimum core capital requirement of Kshs. 10 million improved the financial performance of the Sacco while, 91% of the respondents agreed

that observing the core capital to total deposits requirement improved the financial performance of the Sacco.

On a five point scale, the average mean of the responses was 4.13 which means that majority of the respondents were agreeing with most of the statements; however the answers were varied as shown by a standard deviation of 0.57.

The findings agree with that of Naceur and Kandil (2006), who examined the impact of capital requirement on the profitability of commercial banks in Egypt. The study found that high capital requirement increased the cost of intermediation. On the other hand, the capital requirements increased the bank size leading to increased bank activity and therefore improved performance.

The findings are also similar to the study by Barrios & Blanco (2003) whose findings stated that although capital formed a small percentage of a bank's wealth it nevertheless played a critical role in long term finance, solvency and public credibility of the institution. The results are consistent also with Odhiambo (2011), who did a study on relationship between working capital management and financial performance of deposit taking Saccos in Nairobi County and found out 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.

4.6.2 Cross Tabulation between Capital Adequacy and Financial Performance

Table 4.8: Cross Tabulation of Core Capital to Total Asset

Observing the core capital to total asset requirement has improved the financial performance of the Sacco

		Disagree	Agree	Strongly Agree	Total	Chi Square (P value)
Financial performance	Low Performance	2	23	3	**28**	
	High Performance	0	29	14	**43**	
						6.951
Total		**2**	**52**	**17**	**71**	**(0.031)**

A cross tabulation was conducted between capital adequacy sub-construct (Observing the core capital to total asset requirement has improved the financial performance of the Sacco) and financial performance so as to check if there was statistical significant association between the variables. The results in table 4.8 revealed that the sub-construct and financial performance are significantly associated (chi=6.951, p value=0.031).

Table 4.9: Cross Tabulation of Institutional Capital to Total Asset

Observing the Institutional Capital to Total Asset Requirement has Improved the Financial Performance of the Sacco

		Disagree	Agree	Strongly Agree	Total	Chi Square (P value)
Financial Performance	Low Performance	2	26	0	**28**	
	High Performance	0	34	9	**43**	
Total		**2**	**60**	**9**	**71**	**9.951 (0.009)**

Table 4.9 shows the cross-tabulation results between capital adequacy sub-construct (Observing the institutional capital to total asset requirement has improved the financial performance of the Sacco) and financial performance so as to check if there was statistical significant association between the variables. The results revealed that the sub-construct and financial performance are significantly associated (chi=9.951, p value=0.009).

Table 4.10: Cross Tabulation of Core Capital of Kshs. 10 million

Observing the Minimum Core Capital Requirement of Kshs. 10 Million has Improved the Financial Performance of the Sacco

		Disagree	Neutral	Agree	Strongly Agree	Total	Chi Square (P value)
Financial Performance	Low Performance	2	1	25	0	**28**	
	High Performance	0	2	32	9	**43**	
Total		**2**	**3**	**57**	**9**	**71**	**9.446,(0.024)**

Table 4.10 shows the cross-tabulation results between capital adequacy sub-construct (Observing the minimum core capital requirement of Kshs. 10 million has improved the financial performance of the Sacco) and financial performance so as to check if there was statistical significant association between the variables. The results revealed that the sub-construct and financial performance are significantly associated (chi=9.446, p value=0.024).

Table 4.11: Cross Tabulation of Core Capital to Total Deposits

Observing the core capital to total deposits requirement has improved the financial performance of the Sacco

		Disagree	Neutral	Agree	Strongly Agree	Total	Chi Square (P value)
Financial Performance	Low Performance	2	0	17	9	**28**	
	High Performance	0	4	23	16	**43**	
		2	**4**	**40**	**25**	**71**	**5.957, (0.114)**

Table 4.11 shows the cross-tabulation results between capital adequacy sub-construct (Observing the core capital to total deposits requirement has improved the financial performance of the Sacco) and financial performance so as to check if there was statistical significant association between the variables. The results revealed that the sub-construct and financial performance are not significantly associated (chi = 5.957, p value = 0.114).

These findings agree with those of Berger and Bowman (2012), who indicated that capital helps small banks to increase their probability of survival and market share at all times. The study further argued that capital enhances the performance of medium and large SACCOS primarily during banking crises also Croteau (1956), Taylor (1979), Wolken and Navratil (1980) and who stated that capital adequacy ratios were important in expansion, merger and growth in deposit taking SACCOs. Mckillop and Williamson (2011) recognized the importance of capital management as an important ingredient in achieving optimal utilization of resources in an economy and also the improvement in quality of life.

4.6.3 Joint Capital Adequacy Elements and Financial Performance

The results presented in table 4.12 present the regression model used in explaining the study phenomena.

Table 4.12: Regression model

ROA	Coef.	Std.Err	z	P>|z|
Capital Adequacy	0.54032	0.02273	23.77	0.000
Cons	-0.0121	0.10918	-0.1109	0.912
R^2	0.8551			
F-statistics	565.18			
P value	0.000			

The specific model was;

Financial Performance = -0.0121+0.5403 Capital adequacy

Jointly, capital adequacy elements explained 86% of the financial performance of savings and credit societies in Kenya. This is supported by coefficient of determination also known as the R square of 86%. This means that capital adequacy elements explain 86% of the financial performance SACCOs in Kenya. Further, results indicate that the overall model was statistically significant as supported by p value of 0.000. This implies that capital adequacy is a good predictor of financial performance. This was

supported by an F statistic of 565.18 and the reported p value (0.000) which was less than the conventional probability of 0.05 significance level.

These findings agree with those of Berger and Bowman (2012), who indicated that capital helps small banks to increase their probability of survival and market share at all times. The study further argued that capital enhances the performance of medium and large SACCOS primarily during banking crises also Croteau (1956), Taylor (1979), Wolken and Navratil (1980) and who stated that capital adequacy ratios were important in expansion, merger and growth in deposit taking SACCOs. Mckillop and Williamson (2011) recognized the importance of capital management as an important ingredient in achieving optimal utilization of resources in an economy and also the improvement in quality of life.

4.6.4 Capital Adequacy Elements and Financial   Performance

The results presented in table 4.13 present the regression model used in explaining the study phenomena.

Table 4.13: Regression model

ROA	Coef.	Std.Err	t	P>|z|
Core Capital Ratio	0.305	.096	3.189	0.002
Institutional Capital Ratio	0.237	.116	2.035	0.046
Debt Equity Ratio	0.165	.084	1.960	0.012
Cons	1.117	.472	2.366	0.021
R^2	0.371			
F-statistics	13.192			
P value	0.000			

The specific model was;

Financial Performance = 1.117+0.305 Core Capital Ratio+0.237 Institutional Capital Ratio+0.165 Debt Equity Ratio

Results indicated that Capital adequacy elements explained 37% of the financial performance of savings and credit societies in Kenya. This is supported by coefficient of determination also known as the R square of 37%. This means that capital adequacy elements explain 37% of the financial performance SACCOs in Kenya. Further, results indicate that the overall model was statistically significant as supported by p value of 0.000. This implies that capital adequacy is a good predictor of financial performance. This was supported by an F statistic of 13.192 and the reported p value (0.000) which was less than the conventional probability of 0.05 significance level.

These findings agree with those of Berger and Bowman (2012), who indicated that capital helps small banks to increase their probability of survival and market share at all times. The study further argued that capital enhances the performance of medium and large SACCOS primarily during banking crises also Croteau (1956), Taylor (1979), Wolken and Navratil (1980) and who stated that capital adequacy ratios were important in expansion, merger and growth in deposit taking SACCOs.

4.6.5 Hypothesis Testing

The hypothesis was tested by using the ordinary least square regression. The acceptance/rejection criteria was that, if the p value is less than the conventional p value (0.05), the H_{01} is rejected but if it more than 0.05, the H_{01} fails to be rejected. The null hypothesis was that capital adequacy has no statistical significant effect on financial performance of savings and credit societies in Kenya. Results in Table 4.13 above show that the p value was less than the conventional p value (p=0.05). This indicated that the null hypothesis was rejected hence capital adequacy had statistical significant effect on financial performance of savings and credit societies in Kenya.

4.7 Effect of Asset Quality and Financial Performance of SACCOs

This section includes descriptive statistics, cross tabulation and regression analysis relating to asset quality and financial performance of SACCOs.

4.7.1 Descriptive Statistics

Table 4.14: Asset Quality Descriptive Statistics

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Std. Dev
Our Sacco has a credit policy in place	0.00%	2.80%	1.40%	69.00%	26.80%	4.20	0.60
Our Sacco observes the general state of the economy before establishing a loan portfolio policy	0.00%	2.80%	15.50%	71.80%	9.90%	3.89	0.60
Our Sacco observes the trend of creditors before establishing a loan portfolio policy	0.00%	5.60%	15.50%	64.80%	14.10%	3.87	0.72
Our Sacco observes the overhead cost before establishing a loan portfolio policy	0.00 %	2.80%	12.70%	76.10%	8.50%	3.90	0.57
Average						**3.97**	**0.62**

The second objective of the study was to determine the effect of asset quality on the financial performance of savings and credit societies in Kenya. The respondents were asked to respond to statements on asset quality. The responses were rated on a five likert scale as presented in Table 4.14. Majority of 96% (69.0%+26.8%) of the respondents agreed with the statement that their Sacco has a credit policy in place, 81% agreed with the statement that their Sacco observes the general state of the economy before establishing a loan portfolio policy, 79% of the respondents agreed that their

Sacco observes the trend of creditors before establishing a loan portfolio policy while 85% of the respondents agreed that their Sacco observes the overhead cost before establishing a loan portfolio policy. On a five-point scale, the average mean of the responses was 3.97 which means that majority of the respondents were agreeing with most of the statements; however, the answers were varied as shown by a standard deviation of 0.62.

These findings agree with those of Luqman (2014), who undertook a study on the effect of credit risk on performance of banks in Nigeria. The study found that there is a significant relationship between bank performance (in terms of profitability) and credit risk management (in terms of loan performance). The study mentioned that Loans and advances and non-performing loans are major variables in determining asset quality of a SACCO. Findings indicated that improper credit risk management reduces bank profitability, affects the quality of its assets and increases loan losses and non-performing loan which may eventually lead to financial distress.

4.7.2 Cross Tabulation between Asset Quality and Financial Performance

Table 4.15: Cross Tabulation of Credit Policy and Financial Performance

		Our Sacco has Credit Policy in place					Chi Square
		Disagree	Neutral	Agree	Strongly Agree	Total	(p value)
Financial Performance	Low Performance	2	1	16	9	**28**	
	High Performance	0	0	33	10	**43**	
							6.052
Total		**2**	**1**	**49**	**19**	**71**	**(0.109)**

A cross tabulation was conducted between asset quality element (Our Sacco has a credit policy in place) and financial performance so as to check if there was statistical significant association between the variables. The results in Table 4.15 revealed that the asset quality element and financial performance are not significantly associated (chi= 6.0582, p value=0.109).

Table 4.16: Cross Tabulation of State of the Economy

		Our Sacco observes the general state of the economy before establishing a loan portfolio policy					Chi Square
		Disagree	Neutral	Agree	Strongly Agree	Total	(P value)
Financial Performance	Low Performance	2	6	20	0	**28**	
	High Performance	0	5	31	7	**43**	
							8.682
Total		**2**	**11**	**51**	**7**	**71**	**(0.034)**

Table 4.16 shows the cross-tabulation results between asset quality element (Our Sacco observes the general state of the economy before establishing a loan portfolio policy) and financial performance so as to check if there was statistical significant association between the variables. The results revealed that the element and financial performance are significantly associated (chi= 8.682, p value=0.034).

Table 4.17: Cross Tabulation of Trend of Creditors

Our Sacco Observes the Trend of Creditors Before Establishing a Loan Portfolio Policy

		Disagree	Neutral	Agree	Strongly agree	Total	Chi Square (p value)
Financial Performance	Low Performance	4	6	16	2	**28**	
	High Performance	0	5	30	8	**43**	
							9.193
Total		**4**	**11**	**46**	**10**	**71**	**(0.027)**

Table 4.17 shows the cross-tabulation results between asset quality element (Our Sacco observes the trend of creditors before establishing a loan portfolio policy) and financial performance so as to check if there was statistical significant association between the variables. The results revealed that the element and financial performance are significantly associated (chi=9.193, p value=0.027).

Table 4.18: Cross Tabulation of Loan Portfolio Policy

Our Sacco Observes the Overhead Cost Before Establishing a Loan Portfolio Policy

		Disagree	Neutral	Agree	Strongly Agree	Total	Chi Square (P value)
Financial Performance	Low Performance	2	5	19	2	**28**	
	High Performance	0	4	35	4	**43**	
Total		**2**	**9**	**54**	**6**	**71**	**4.553 (0.020)**

Table 4.18 shows the cross-tabulation results between asset quality element (Our Sacco observes the overhead cost before establishing a loan portfolio policy) and financial performance so as to check if there was statistical significant association between the variables. The results revealed that the element and financial performance are significantly associated (chi=4.553, p value=0.020).

4.7.3 Joint Asset Quality Elements and Financial Performance

Table 4.19: Regression Model of Asset Quality and Financial Performance

ROA	**Coef.**	**Std.Err**	**z**	**P>|z|**	**[95%**	**Conf.Interval**
Asset quality	5.8269	0.43337	13.44	0.000	4.9769	6.6757
Cons	-1.0608	0.23176	-4.58	0.000	-1.5150	-0.6066
R^2	0.4986					
F-statistics	180.74					
P value	0.000					

The specific model was;

SACCO financial performance = -1.0608+5.8269 asset quality

The results presented in Table 4.19 present the regression model used in explaining the study phenomena; jointly asset quality elements explained 50% of financial performance of savings and credit societies in Kenya. This was supported by coefficient of determination also known as the R square of 50%. This means that asset quality explains 50% of the financial performance SACCOs in Kenya and Further, results indicate that the overall model was statistically significant as supported by a p value of 0.000. This implies that asset quality is a good predictor of financial performance which was supported by an F statistic of 180.74 and the reported p value (0.000) which was less than the conventional probability of 0.05 significance level.

These findings agree with those of Manyuanda (2013), who examined the effect of nonperforming loans on the performance of SACCOs in Nairobi, Kenya. The study concluded that a significant negative relationship existed between non-performing loans and performance of SACCOs. The study recommended that SACCOs opt for equity financing instead of debt financing to improve on its financial leverage. SACCOs should also avoid excessive lending, maintain high credit standards and should limit lending to un-hedged borrowers.

4.7.4 Asset Quality Elements and Financial Performance

Table 4.20: Regression Model of Asset Quality and Financial Performance

ROA	Coef.	Std. Err	t	P>|z|
Gross NPA to total Advances	.385	.086	4.456	0.000
Loan Loss Coverage Ratio	.216	0.081	2.677	0.000
Loan Loss Provision Ratio	.136	.071	1.926	0.001
Cons	1.701	0.424	4.011	0.000
R^2	0.322			
F-statistics	10.602			
P value	0.000			

The specific model was;

Financial Performance = 1.701+ 0.385 Gross NPA to total Advances+ 0.216 Loan Loss Coverage Ratio + 0.136 Loan Loss Provision Ratio

The results presented in table 4.20 present the regression model used in explaining the study phenomena; asset quality elements explained 32% of financial performance of savings and credit societies in Kenya. This was supported by coefficient of determination also known as the R square of 32%. This means that asset quality explain 32% of the financial performance SACCOs in Kenya and further, results indicate that the overall model was statistically significant as supported by a p value of 0.000. This implies that asset quality is a good predictor of financial performance which was supported by an F statistic of 10.602 and the reported p value (0.000) which was less than the conventional probability of 0.05 significance level.

These findings agree with those of Manyuanda (2013), who examined the effect of nonperforming loans on the performance of SACCOs in Nairobi, Kenya. The study concluded that a significant negative relationship existed between non-performing loans and performance of SACCOs. The study recommended that SACCOs opt for equity financing instead of debt financing to improve on its leverage. SACCOs should also avoid excessive lending, maintain high credit standards and limit lending to un-hedged borrowers.

4.7.5 Hypothesis Testing

The hypothesis was tested using the ordinary least square regression. The acceptance/rejection criteria was that, if the p value is less than the conventional p value (0.05), the H_{02} is rejected but if it more than 0.05, the H_{02} fails to be rejected. The null hypothesis was that asset quality has no statistical significant effect on financial performance of savings and credit societies in Kenya. Results in Table 4.20 show that the p value was less than the conventional p value (p=0.05). This indicated that the null hypothesis was rejected hence asset quality had significant statistical effect on financial performance of savings and credit societies in Kenya.

4.8 Effect of Management Efficiency and Financial Performance of SACCOs

This section includes descriptive statistics, cross tabulation and regression analysis relating to management efficiency and financial performance of SACCOs.

4.8.1 Descriptive Statistics

Table 4.21: Management Efficiency Descriptive Statistics

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Std. Dev
Observing management efficiency has led to improved strategic plan of the Sacco	0.00%	2.80%	0.00%	70.40%	26.80%	4.21	0.58
Observing management efficiency has led to improved business plan of the Sacco	0.00%	2.80%	1.40%	94.40%	1.40%	3.94	0.37
Observing management efficiency has enhanced independent internal and external audit implementation	0.00%	0.00%	29.60%	66.20%	4.20%	3.75	0.53
Observing management efficiency has enhanced the capability of board of directors and senior management	0.00%	31.00%	28.20%	39.40%	1.40%	3.11	0.87
Observing management efficiency has led to a fit and proper test	0.00%	0.00%	18.30%	76.10%	5.60%	3.87	0.48
Average						**3.78**	**0.57**

The third objective of the study was to evaluate the effect of management efficiency on financial performance of savings and credit societies in Kenya. The respondents

were asked to respond to statements on management efficiency, the responses were rated on a five Likert scale as presented in Table 4.21, majority of 97% (70.4%+26.8%) of the respondents agreed with the statement that observing management efficiency has led to improved strategic plan of the Sacco, 95% agreed with the statement that observing management efficiency has led to improved business plan of the Sacco, 70% of the respondents agreed that observing management efficiency has enhanced independent internal and external audit implementation, 40% of the respondents agreed that observing management efficiency has enhanced the capability of board of directors and senior management while 82% of the respondents agreed that observing management efficiency has led to a fit and proper test.

On a five-point scale, the average mean of the responses was 3.78 which means that majority of the respondents were agreeing with most of the statements; however, the answers were varied as shown by a standard deviation of 0.57.

The findings agree with those of Bataineh (2014), who examined the impact of employee training on the performance of commercial banks in Jordan. The study found that training employees increased their productivity and increased knowledge and skills leads to efficiency. According to the study, training also increases motivation levels among employees. Productivity of employees is directly tied to performance of banks. A similar study by Tahir and Sajjad (2013), on commercial banks in Lahore indicated that training significantly influenced bank performance.

4.8.2 Cross Tabulation of Management Efficiency Elements

Table 4.22: Cross Tabulation of Observing Management Efficiency

Observing Management Efficiency has Led to Improved Strategic Plan of the Sacco		Disagree	Agree	Strongly Agree	Total	Chi Square (p value)
Financial Performance	Low Performance	2	20	6	**28**	
	High Performance	0	30	13	**43**	
						3.569
Total		**2**	**50**	**19**	**71**	**(0.168)**

A cross tabulation was conducted between management efficiency element (Observing management efficiency has led to improved strategic plan of the Sacco) and financial performance so as to check if there was statistical significant association between the variables. The results in Table 4.22 revealed that the element and financial performance are not significantly associated (chi=3.569, p value=0.168).

Table 4.23: Cross Tabulation of Improved Business Plan

Observing Management Efficiency has Led to Improved Business Plan of the Sacco		Disagree	Neutral	Agree	Strongly Agree	Total	Chi Square (p value)
Financial Performance	Low Performance	2	1	25	0	**28**	
	High Performance	0	0	42	1	**43**	
							5.385
Total		**2**	**1**	**67**	**1**	**71**	**(0.146)**

90

Table 4.23 shows the cross-tabulation results between management efficiency element (Observing management efficiency has led to improved business plan of the Sacco) and financial performance so as to check if there was statistical significant association between the variables. The results revealed that the element and financial performance are not significantly associated (chi=5.385, p value=0.146).

Table 4.24: Cross Tabulation of Internal and External Audit implementation

Observing Management Efficiency has Enhanced Independent Internal and External Audit Implementation

		Neutral	Agre e	Strongly Agree	Total	Chi Square (p value)
Financial Performanc e	Low Performance	7	21	0	**28**	
	High Performance	14	26	3	**43**	
						2.822
Total		**21**	**47**	**3**	**71**	**(0.244)**

Table 4.24 shows the cross tabulation results between management efficiency element (Observing management efficiency has enhanced independent internal and external audit implementation) and financial performance so as to check if there was statistical significant association between the variables. The results revealed that the element and financial performance are not significantly associated (chi=2.822, p value=0.244).

Table 4.25: Cross Tabulation of Capability of Board of Directors and Senior Management

					Strongly		Chi Square
Observing Management efficiency has Enhanced the Capability of Board of Directors and Senior Management							
		Disagree	Neutral	Agree	Agree	Total	(P value)
Financial performance	Low Performance	9	10	9	0	**28**	
	High Performance	13	10	19	1	**43**	
							2.229
Total		**22**	**20**	**28**	**1**	**71**	**(0.526)**

Table 4.25 shows the cross tabulation results between management efficiency element (Observing management efficiency has enhanced the capability of board of directors and senior management) and financial performance so as to check if there was statistical significant association between the variables. The results revealed that the element and financial performance are not significantly associated (chi=2.229, p value=0.526).

Table 4.26: Cross Tabulation of Fit and Proper Test

		Observing Management Efficiency has led to Fit and Proper Test				
		Neutral	Agree	Strongly Agree	Total	Chi Square (P value)
Financial Performance	Low Performance	9	18	1	**28**	
	High Performance	4	36	3	**43**	
						6.023
Total		**13**	**54**	**4**	**71**	**(0.249)**

Table 4.26 shows the cross-tabulation results between management efficiency element (Observing management efficiency has led to a fit and proper test) and financial performance so as to check if there was statistical significant association between the variables. The results revealed that the element and financial performance are not significantly associated (chi=6.023, p value=0.249).

4.8.3 Joint management Efficiency Elements and Financial Performance

Table 4.27: Regression Model for Management Efficiency Elements

Variable	**B**	**Std. Error**	**t**	**Sig.**
(Constant)	0.395	0.289	1.36	0.173
Management Efficiency	-2.23e-11	3.09e-09	-0.01	0.994

Results in table 4.27 reveal that joint management efficiency elements do not have a significant effect on the financial performance of SACCOs, this can be explained by the fact that the p value of 0.994 which is greater than the critical p value of 0.05.

These findings contradicted with those of Maseki (2012), who studied the impact of knowledge management on performance of commercial banks in Kenya. The study found that knowledge management greatly affected performance of the commercial

banks. According to the study knowledge management enhances product and service quality; increases productivity and innovative ability.

4.8.4 Management Efficiency Elements and Financial Performance

Table 4.28: Regression Model for Management Efficiency Elements

ROA	Coef.	Std.Err	t	P>|z|
Expenditure to Income Ratio	.033	.140	.238	.813
Business per Employee	-.185	.204	-.907	.368
Profit per Employee	.231	.124	1.857	.068
Cons	3.746	0.668		0.000
R^2	0.064			
F-statistics	1.522			
P value	0.217			

Results in table 4.28 reveal that management efficiency elements do not have a significant effect on the financial performance of SACCOs, this can be explained by the fact that the p value of 0.217 which is greater than the critical p value of 0.05.

These findings contradicted with those of Maseki (2012), who studied the impact of knowledge management on performance of commercial banks in Kenya. The study found that knowledge management greatly affected performance of the commercial banks. According to the study knowledge management enhances product and service quality; increases productivity and innovative ability.

4.8.5 Hypothesis Testing

The hypothesis was tested by using the ordinary least square regression. The acceptance/rejection criteria was that, if the p value is less than the conventional p value (0.05), the H_{03} is rejected but if it more than 0.05, the H_{03} fails to be rejected. The null hypothesis was that management efficiency has no statistical significant effect on financial performance of savings and credit societies in Kenya. Results in Table

4.28 above show that the p value was greater than the conventional p value (p=0.05) and (p=0.0139) respectively. This indicated that the null hypothesis was not rejected hence management efficiency has no statistical significant effect on financial performance of savings and credit societies in Kenya.

4.9 Effects of Earnings Ability and Financial Performance of SACCOs

This section includes descriptive statistics, cross tabulation and regression analysis relating to earnings ability and financial performance of SACCOs.

4.9.1 Descriptive Statistics

Table 4.29: Earnings Ability Descriptive Statistics

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Std. Dev
The earning ability determines the financial performance of a Sacco	0.00%	14.10%	16.90%	63.40%	5.60%	3.61	0.80
The earning ability guards the Sacco against erosion of capital due to potential changes.	0.00%	11.30%	28.20%	59.20%	1.40%	3.51	0.72
The rating manifest adequacy of the current and future earnings	0.00%	7.00%	12.70%	80.30%	0.00%	3.73	0.59
Average						**3.62**	**0.70**

The fourth objective of the study was to establish the effect of earnings ability on financial performance of savings and credit societies in Kenya. The respondents were asked to respond to statements on earnings ability, the responses were rated on a five likert scale as presented in Table 4.29, majority of 69% (63.4%+5.6%) of the respondents agreed with the statement that the earning ability determines the financial performance of a Sacco, 60% agreed with the statement that the earning ability guards the Sacco against erosion of capital due to potential changes while 80% of the respondents agreed that the rating manifest adequacy of the current and future earnings.

On a five point scale, the average mean of the responses was 3.62 which means that majority of the respondents were agreeing with most of the statements; however the answers were varied as shown by a standard deviation of 0.70.

These findings disagree with those of Ausina-Tortosa (2012), who examined the relationship, between earnings quality and bank performance in Spain. The study found that contrary to expectations, earnings management did not significantly influence profitability.

Table 4.30: Earnings Ability Rating and Financial Performance

Year	By 0 to 20%	By 21% to 50%	By 51% to 75%	By 76% to 100%	By over 100%	Mean	Std. Dev
2015	0.00%	0.00%	2.80%	38.00%	59.20%	4.56	0.55
2014	0.00%	0.00%	9.90%	36.60%	53.50%	4.44	0.67
2013	0.00%	0.00%	15.50%	56.30%	28.20%	4.13	0.65
2012	0.00%	7.00%	15.50%	46.50%	31.00%	4.01	0.87
2011	0.00%	9.90%	19.70%	47.90%	22.50%	3.83	0.89
Average						**4.19**	**0.73**

The respondents were asked to rate the quality of their organizations earnings relative to industry ratings for the past 5 years. Results in table 4.30 reveal that in 2015,

majority of 59% of the respondents rated the quality of their organizations' earnings by over 100%, 38% rated the quality of their organizations' earnings by 76-100% while 3% of the respondents rated the quality of their organizations' earnings by 51-75%. In 2014, majority of 54% of the respondents rated the quality of their organizations' earnings by over 100%, 37% rated the quality of their organizations earnings by 76-100% while 10% of the respondents rated the quality of their organizations earnings 76-100%. In 2013, majority of 56% of the respondents rated the quality of their organizations earnings by 76-100%, 28% rated the quality of their organizations earnings by over 100% while 16% rated the quality of their organizations earnings by 51-75%. In 2012, 47% of the respondents rated the quality of their organizations earnings by 76-100%, 31% rated the quality of their organizations earnings % by over 100%, 16% rated the quality of their organizations earnings by 51-75% while 7% of the respondents rated the quality of their organizations earnings by 21-50%. In 2011, 48% of the respondents rated the quality of their organizations earnings by 76-100%, 23% of the respondents rated the quality of their organizations earnings by over 100%, 20% rated the quality of their organizations earnings by 51-75% while 10% of the respondents rated the quality of their organizations earnings by 21-50%.

On a five point scale, the average mean of the responses was 4.19 which implies that majority of the respondents rated the quality of their organizations earnings by 76-100%; however the answers were varied as shown by a standard deviation of 0.73.

Table 4.31: Earnings Ability influence and Financial Performance

Response	Frequency	Percent
No	28	39.4
Yes	43	60.6
Total	**71**	**100**

The respondents were further asked to indicate whether earnings ability influences the financial performance of their organization. Results in table 4.31 reveal that majority of 61% of the respondents indicated yes while 39% of the respondents indicated no.

This implies that majority of the respondents believe that the financial performance of their organizations is determined by their earnings ability.

4.9.2 Cross Tabulation between Earnings Ability Elements and Financial Performance

Table 4.32: Cross Tabulation of Earning Ability and Financial Performance

		The earning ability determines the financial performance of a Sacco					
		Disagree	Neutral	Agree	Strongly Agree	Total	Chi Square (P value)
Financial Performance	Low Performance	5	3	19	1	**28**	
	High Performance	5	9	26	3	**43**	
							2.010
Total		**10**	**12**	**45**	**4**	**71**	**(0.047)**

A cross tabulation was conducted between earnings ability element (The earning ability determines the financial performance of a Sacco) and financial performance so as to check if there was statistical significant association between the variables. The results in table 4.32 revealed that element and financial performance are significantly associated (chi=2.010, p value=0.047).

Table 4.33: Cross Tabulation of Earning Ability Guards of Sacco

The Earning Ability Guards the Sacco against Erosion of Capital due to Potential Changes.

		Disagree	Neutral	Agree	Strongly Agree	Total	Chi Square (P value)
Financial Performance	Low Performance	6	11	11	0	**28**	
	High Performance	2	9	31	1	**43**	
Total		**8**	**20**	**42**	**1**	**71**	**10.001(0.019)**

Table 4.33 shows the cross-tabulation results between earning ability element (The earning ability guards the Sacco against erosion of capital due to potential changes) and financial performance so as to check if there was statistical significant association between the variables. The results revealed that the element and financial performance are significantly associated (chi=10.001, p value=0.019).

Table 4.34: Cross Tabulation of Earning Ability and Financial Performance

The rating Manifest Adequacy of the Current and Future Earnings

		Disagree	Neutral	Agree	Total	Chi Square (p value)
Financial performance	low performance	2	2	24	**28**	
	high performance	3	7	33	**43**	
Total		**5**	**9**	**57**	**71**	**12.87 (0.022)**

Table 4.34 shows the cross-tabulation results between earning ability element (The rating manifest adequacy of the current and future earnings) and financial performance so as to check if there was statistical significant association between the variables. The

results revealed that the element and financial performance are significantly associated (chi=12.87, p value=0.022).

4.9.3 Join Earnings Ability Elements and Financial Performance

Table 4.35: Regression Model of Joint Earnings Ability Elements

ROA	Coef.	Std.Err	z	P>|z|	[95%	Conf.Interval
Earnings Ability	6.4384	0.3271	19.68	0.000	5.7973	7.07954
cons	-1.589051	0.2374	-6.69	0.000	-2.0543	-1.12384
R^2	0.4631					
F-statistics	387.42					
P value	0.000					

The specific model was;

SACCO Financial Performance = -1.5891+6.4384 earnings ability

The results presented in table 4.35 present the regression model used in explaining the study phenomena. Jointly, earnings ability elements explained 46% of the financial performance of SACCOs in Kenya. This is supported by coefficient of determination also known as the R square of 46%. This means that earnings ability explain 46% of the financial performance SACCOs in Kenya. Further, results indicate that the overall model was statistically significant as supported by a p value of 0.000. This implies that earnings ability is a good predictor of financial performance. This was supported by an F statistic of 387.42 and the reported p value (0.000) which was less than the conventional probability of 0.05 significance level.

These findings disagree with of those of Kongiri (2012), who investigated the effect CAMEL variables on the efficiency of commercial banks. The study found that capital adequacy, earnings and liquidity ratio have a negative relationship to efficiency ratio while management quality and asset quality have a positive relationship. The study mentioned that the earnings ability reflects the bank's ability to absorb losses, expand its financing, as well as, its ability to pay dividends to its shareholders, and helps develop an adequate amount of own capital.

4.9.4 Earnings Ability Elements and Financial   Performance

Table 4.36: Regression Model of Earnings Ability Elements

ROA	Coef.	Std.Err	t	P>|z|
Return on Asset	0.248	.102	2.424	.019
Return on Equity	0.310	.094	3.299	.002
Earnings per share	0.176	.095	1.861	.012
Cons	3.038	.343	8.850	.000
R^2	0.300			
F-statistics	9.576			
P value	0.000			

The specific model was;

Financial Performance = 3.038+ 0.248 Return on Asset+ 0.310 Return on Equity+ 0.176 Earnings per share

The results presented in table 4.36 present the regression model used in explaining the study phenomena. Jointly, earnings ability elements explained 30% of the financial performance of SACCOs in Kenya. This is supported by coefficient of determination also known as the R square of 30%. This means that earnings ability explain 46% of the financial performance SACCOs in Kenya. Further, results indicate that the overall model was statistically significant as supported by a P value of 0.000.

This implies that earnings ability is a good predictor of financial performance. This was supported by an F statistic of 9.576 and the reported p value (0.000) which was less than the conventional probability of 0.05 significance level.

These findings disagree with of those of Kongiri (2012), who investigated the effect CAMEL variables on the efficiency of commercial banks. The study found that capital adequacy, earnings and liquidity ratio have a negative relationship to efficiency ratio while management quality and asset quality have a positive relationship. The study mentioned that the earnings ability reflects the bank's ability to absorb losses, expand

its financing, as well as, its ability to pay dividends to its shareholders, and helps develop an adequate amount of own capital.

4.9.5 Hypothesis Testing

The hypothesis was tested by using the ordinary least square regression. The acceptance/rejection criteria was that, if the p value is less than the conventional p value (0.05), the H_{04} is rejected but if it more than 0.05, the H_{04} fails to be rejected. The null hypothesis was that earnings ability has no statistical significant effect on financial performance of savings and credit societies in Kenya. Results in Table 4.36 above show that the p value was less than the conventional p value (p=0.05). This indicated that the null hypothesis was rejected hence earnings ability had a statistical significant effect on financial performance of savings and credit societies in Kenya.

4.10 Effect of Liquidity and Financial Performance of SACCOs

This section includes descriptive statistics, cross tabulation and regression analysis relating to liquidity and financial performance of SACCOs.

4.10.1 Descriptive Statistics

Table 4.37: Descriptive Statistics of Liquidity

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Std. Dev
Capping external debt at 25% improves the financial performance of the Sacco	0.00%	22.50%	26.80%	39.40%	16.30%	3.39	0.96
Observing liquidity at minimum statutory ratio of 15% improves the financial performance of the Sacco	0.00%	5.60%	33.80%	42.30%	18.30%	3.73	0.83
Liquidity is measured in terms of the ratio of liquid assets to deposits and short-term liabilities	0.00%	5.60%	14.10%	77.50%	2.80%	3.77	0.59
External borrowing is used as an indicator of the liquidity status	0.00%	4.20%	23.90%	70.40%	1.40%	3.69	0.58
Average						**3.65**	**0.74**

The fifth objective of the study was to determine the effect of liquidity on financial performance of savings and credit societies in Kenya. The respondents were asked to respond to statements on liquidity. The responses were rated on a five likert scale as presented in Table 4.37. Majority of 55% (39.4%+16.3%) of the respondents agreed with the statement that capping external debt at 25% improves the financial performance of the Sacco,60% agreed with the statement that observing liquidity at minimum statutory ratio of 15% improves the financial performance of the Sacco, 81%

agreed with the statement that liquidity is measured in terms of the ratio of liquid assets to deposits and short term liabilities while 72% of the respondents agreed that external borrowing is used as an indicator of the liquidity status.

On a five-point scale, the average mean of the responses was 3.65 which means that majority of the respondents were agreeing with most of the statements; however, the answers were varied as shown by a standard deviation of 0.74. These findings agree with that of Abang-anoh (2012), who undertook a study on the effect of liquidity on performance of commercial banks. The study found a positive relationship between liquidity and the existence of any banks. According to the study adequate liquidity enable banks to mandate it risk and thereby helping to sustain public confidence in the operation of the banking institution which in turn leads to more patronage and consequently more profit.

The findings are similar to Saunders and Cornett (2011) who advocated for the prudential planning of cash flows by matching maturities of assets against maturities of liabilities. They further asserted that for an organization to operate in a positive cash flow, the maturity of assets must be earlier and higher than the maturity of liabilities. All the SACCOs in the study implemented the Kenyan SACCO Societies Act. The Act advocates for 15% Liquidity ratio which is computed by dividing total cash and cash equivalents with the summation of short term deposits and short term liabilities. The practice has the impact of encouraging SACCOs to maintain liquidity for meeting daily cash requirements for the members and a similar view was shared by Ruth (2001).

The findings are similar to Miller and Orr (1966) who advocated for establishment of desired cash levels that optimizes usage of available cash and limiting the likelihood of insolvency risk. Davidson *et al* (1999) and Pandey (2007), also had similar findings which stated that computation of desirable cash level was important to enable firms invest their excess funds.

Table 4.38: Liquidity Response Rate

Response	Frequency	Percent
No	39	54.9
Yes	32	45.1
Total	**71**	**100**

The respondents were asked to indicate whether their organizations possess adequate liquidity to meet their obligations as and when they fall due. Results in table 4.38 reveal that majority of 55% of the respondents indicated no while 45% of the respondents indicated yes. This implies that majority of the SACCOs do not have adequate liquidity to meet their financial obligations. This implies that most organizations experience liquidity problems.

Table 4.39: Influence of Liquidity on Financial Performance

Response	Frequency	Percent
No	41	57.7
Yes	30	42.3
Total	**71**	**100**

The respondents were further asked to indicate whether the level of liquidity influences their organization's performance. Results in table 4.39 reveal that majority of 58% of the respondents indicated no while 42% of the respondents indicated yes. This implies that most of the respondents do not think that their level of liquidity has a significant impact on their organizations' performance.

4.10.2 Cross Tabulation between Liquidity Elements

Table 4.40: Cross Tabulation between Liquidity Elements

Capping external debt at 25% improves the financial performance of the Sacco

		Disagree	Neutral	Agree	Strongly Agree	Total	Chi Square P value)
Financial Performance	Low Performance	9	7	10	2	**28**	
	High Performance	7	12	18	6	**43**	
							2.808
Total		**16**	**19**	**28**	**8**	**71**	**(0.422)**

A cross tabulation was conducted between liquidity element (Capping external debt at 25% improves the financial performance of the Sacco) and financial performance so as to check if there was statistical significant association between the variables. The results in table 4.40 revealed that the element and financial performance are not significantly associated (Chi=2.808, p Value=0.422).

Table 4.41: Cross Tabulation of minimum statutory ratio

Observing Liquidity at Minimum Statutory Ratio of 15% Improves the Financial Performance of the Sacco

		Disagree	Neutral	Agree	Strongly Agree	Total	Chi Square (P value)
Financial Performance	Low Performance	4	5	10	9	**28**	
	High Performance	0	19	20	4	**43**	
							14.920
Total		**4**	**24**	**30**	**13**	**71**	**(0.002)**

Table 4.41 shows the cross-tabulation results between liquidity element (Observing liquidity at minimum statutory ratio of 15% improves the financial performance of the Sacco) and financial performance so as to check if there was statistical significant association between the variables. The results revealed that the element and financial performance are significantly associated (chi=14.920, p value=0.002).

Table 4.42: Cross Tabulation of Liquidity scale

Liquidity is Measured in Terms of the Ratio of Liquid Assets to Deposits and Short Term Liabilities

		Disagree	Neutral	Agree	Strongly Agree	Total	Chi Square (P value)
Financial Performance	Low Performance	0	4	23	1	28	
	High Performance	4	6	32	1	43	
							18.530
Total		**4**	**10**	**55**	**2**	**71**	**(0.022)**

Table 4.42 shows the cross tabulation results between liquidity element (Liquidity is measured in terms of the ratio of liquid assets to deposits and short term liabilities) and financial performance so as to check if there was statistical significant association between the variables. The results revealed that the element and financial performance are significantly associated (chi=18.530, p value=0.022).

Table 4.43: Cross Tabulation of Liquidity Status

		External Borrowing is used as an Indicator of the Liquidity Status					
		Disagree	Neutral	Agree	Strongly Agree	Total	Chi Square (P value)
Financial Performance	Low Performance	0	6	21	1	**28**	
	High Performance	3	11	29	0	**43**	
							17.490
Total		**3**	**17**	**50**	**1**	**71**	**(0.029)**

Table 4.43 shows the cross tabulation results between liquidity element (External borrowing is used as an indicator of the liquidity status) and financial performance so as to check if there was statistical significant association between the variables. The results revealed that the element and financial performance are significantly associated (chi=17.490, p value=0.029).

4.10.3 Joint Liquidity Elements and Financial Performance

Table 4.44: Regression Model of Joint Liquidity Elements

ROA	Coef.	Std.Err	z	P>|z|	[95%	Conf. Interval
Liquidity	0.01889	0.0013549	13.94	0.000	0.0162335	0.0215446
Cons	0.027942	0.1258084	2.22	0.026	0.0328406	0.5260006
R^2	0.6613					
F-statistics	194.36					
P value	0.000					

The specific model was;

SACCO Financial Performance = 0.027942+0.01889 Liquidity

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The results presented in table 4.43 present the regression model used in explaining the study phenomena. Jointly, liquidity elements explained 66% of the financial performance of SACCOs in Kenya. This is supported by coefficient of determination also known as the R square of 66%. This means that liquidity explains 66% of the financial performance SACCOs in Kenya. Further, results indicate that the overall model was statistically significant as supported by a p value of 0.000. This implies that liquidity is a good predictor of financial performance. This was supported by an F statistic of 194.36 and the reported p value (0.000) which was less than the conventional probability of 0.05 significance level.

These findings agree with that of Omino (2014), who analyzed the liquidity mitigation measures and performance of SACCOs in Kisumu County. The study found out that liquidity risk mitigation approaches adopted by different SACCOs had a significant effect on their financial performances.

The study revealed that SACCOs adopted a more cautious position in their current liabilities to ensure that operating cash flows were sufficient to cover the short terms obligations entered by the firms. Further, the study revealed that debtor collection periods were longer to encourage voluntary membership and consequently the SACCOs were either unjustifiably constraining their creditor payment periods or were conditioned to do so.

4.10.5 Liquidity Elements and Financial Performance
Table 4.45: Regression model of Joint Liquidity Elements

ROA	Coef.	Std. Err	t	P>|z|
Liquid Assets to Total Assets	.292	0.134	2.176	.033
Cash Deposit Ratio	.149	0.084	1.784	.039
Credit Deposit Ratio	-.087	.091	-.952	.344
Cons	2.952	.308		9.598
R^2	0.416			
F-statistics	15.909			
P value	0.000			

The specific model was;

Financial Performance = 2.952+292 Liquid Assets to Total Assets+0.149 Cash Deposit Ratio-0.087 Credit Deposit Ratio

The results presented in table 4.45 present the regression model used in explaining the study phenomena. Liquidity elements explained 42% of the financial performance of SACCOs in Kenya. This is supported by coefficient of determination also known as the R square of 42%. This means that liquidity explains 42% of the financial performance SACCOs in Kenya. Further, results indicate that the overall model was statistically significant as supported by a p value of 0.000. This implies that liquidity is a good predictor of financial performance. This was supported by an F statistic of 15.909 and the reported p value (0.000) which was less than the conventional probability of 0.05 significance level.

These findings also agree with that of Omino (2014), who analyzed the liquidity mitigation measures and performance of SACCOs in Kisumu County. The study found that liquidity risk mitigation approaches adopted by different SACCOs had a significant effect on their financial performances. The study revealed that SACCOs adopted a more cautious position in their current liabilities to ensure that operating cash flows were sufficient to cover the short terms obligations entered by the firms. Further, the study revealed that debtor collection periods were longer to encourage voluntary membership and consequently the SACCOs were either unjustifiably constraining their creditor payment periods or were conditioned to do so.

4.10.5 Hypothesis Testing

The hypothesis was tested using the ordinary least square regression. The acceptance/rejection criteria was that, if the p value is less than the conventional p value (0.05), the H_{05} is rejected but if it more than 0.05, the H_0 fails to be rejected. The null hypothesis was that liquidity has no statistical significant effect on financial performance of savings and credit societies in Kenya. Results in Table 4.45 above show that the p value was less than the conventional p value (p=0.05). This indicated that the null hypothesis was rejected hence liquidity had a statistical significant effect on financial performance of savings and credit societies in Kenya.

4.11 Sensitivity to Market Risks and Financial Performance

This section includes descriptive statistics and regression analysis relating to sensitivity to market risks and financial performance of SACCOs.

4.11.1 Descriptive Statistics

Table 4.46: Sensitivity to Market Risks Descriptive Statistics

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Std. Dev
Our Sacco involves stakeholders in formulating the sensitivity to interest rate policies	0.00%	1.40%	9.90%	47.90%	40.80%	4.28	0.70
Our Sacco involves the director in formulating the sensitivity to interest rate policies	0.00%	0.00%	5.60%	80.30%	14.10%	4.08	0.44
Our Sacco involves the regulator in formulating the sensitivity to interest rate policies	0.00%	0.00%	12.70%	70.40%	16.90%	4.04	0.55
Our Sacco involves stakeholders in formulating the sensitivity to inflation rate policies	0.00%	1.40%	2.80%	60.60%	31.00%	4.08	1.04
Our Sacco involves the director in formulating the sensitivity to inflation rate policies	0.00%	5.60%	8.50%	73.20%	8.50%	3.72	1.00
Our Sacco involves the regulator in formulating the sensitivity to inflation rate policies	0.00%	0.00%	12.70%	71.80%	11.30%	3.82	0.95
Average						**4.00**	**0.78**

The sixth objective of the study was to establish the moderating effect of sensitivity to market risk on the internal factors of financial performance of savings and credit societies in Kenya. The respondents were asked to respond to statements on sensitivity to market risks. The responses were rated on a five likert scale as presented in Table

4.46. Majority of 89% (47.90%+40.80%) of the respondents agreed with the statement that our Sacco involves stakeholders in formulating the sensitivity to interest rate policies, 94% agreed with the statement that our Sacco involves the director in formulating the sensitivity to interest rate policies, 87% agreed with the statement that our Sacco involves the regulator in formulating the sensitivity to interest rate policies, 92% agreed with the statement that our Sacco involves stakeholders in formulating the sensitivity to inflation rate policies, 82% agreed with the statement that our Sacco involves the director in formulating the sensitivity to inflation rate policies while 83% of the respondents agreed that our Sacco involves the regulator in formulating the sensitivity to inflation rate policies. The results show that respective standard deviation are not far from zero, this indicate that the data was close to the mean of respective indicators.

On a five point scale, the average mean of the responses was 4.00 which means that majority of the respondents were agreeing with most of the statements; however the answers were varied as shown by a standard deviation of 0.78

Table 4.47: Interest Rate Risk

Response	Frequency	Percent
Yes	71	100
Total	**71**	**100**

The respondents were asked to indicate whether their organizations have specific policies for managing sensitivity to interest rate risks. Results in table 4.47 reveal that all the respondents indicated yes. This implies that all the SACCOs under study have specific policies for managing sensitivity to interest rate risks.

Table 4.48: Inflation Risks

Response	Frequency	Percent
No	4	5.6
Yes	67	94.4
Total	**71**	**100**

The respondents were further asked to indicate whether their organizations have specific policies for managing sensitivity to inflation risks. Results in table 4.48 reveal that majority of 94% of the respondents indicated yes while 6% indicated no. This implies that majority of the SACCOs have specific policies for managing sensitivity to inflation risks.

4.11.2 Sensitivity to Market Risks and Financial Performance

Table 4.49: Regression Model

ROA	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
Sensitivity to Market Risk	0.453464	0.0492795	9.20	0.000	0.356878	0.55005
cons	0.17047	0.1885504	0.90	0.366	-0.19908	0.540022
R^2	0.5992					
F-statistics	84.67					
P value	0.000					

The specific model was;

SACCO Financial Performance = 0.017047+0.453464 Sensitivity Market Risks

The results presented in table 4.49 present the regression model used in explaining the study phenomena. Market risks explained 60% of the financial performance of SACCOs in Kenya. This is supported by coefficient of determination also known as the R square of 60%.

This means that market risks explain 60% of the financial performance SACCOs in Kenya. Further, results indicate that the overall model was statistically significant as supported by a p value of 0.000. This implies that Market risks are a good predictor of

financial performance. This was supported by an F statistic of 84.67 and the reported p value (0.000) which was less than the conventional probability of 0.05 significance level.

These findings agree with that of Milanova (2010), who examined sensitivity to market risk management in banks. The study focused on interest rate risk management using the Value at Risk (VAR) model. The study found that market interest rates, currency exchange rates, prices of shares and exchange tradable commodities have an adverse impact on bank incomes and capital position. The study recommended rigorous risk management to mitigate risk. Further, the findings agree with Tomuleasa (2014), who studied the determinants of European bank performance. The study focused on bank specific factors and macroeconomic variables. The study mentioned that effect of inflation on profitability is tethered to the capacity of bank's management to forecast inflation. The study established mixed findings. Banks that were able to correctly anticipate inflation had the opportunity to adjust their interest rates accordingly and consequently to earned higher profits. The performance of those that could not predict inflation was adversely affected.

4.12 Test for Moderating Effect of Sensitivity to Market Risk

The study sought to establish the effect of internal factors on financial performance of savings and credit societies in Kenya.

4.12.1 Capital Adequacy and Sensitivity to Market Risk

Table 4.50: Moderating Effect of Sensitivity to Market Risk

ROA	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
Interaction term1	0.03732	0.00132	28.29	0	0.03474	0.03991
cons	0.11089	0.09325	1.19	0.234	-0.0719	0.29365
R2	0.8891					
F statistics	800.11					
P value	0.000					

$= \beta_o + \beta_1 X_1.M + \epsilon$

SACCO Performance= 0.11089+0.03732 (Capital Adequacy * Sensitivity to Market Risk).

Results in table 4.50 showed that sensitivity to market risk has a significant moderating effect on capital adequacy as an internal factor of financial performance of SACCOs in Kenya. This can be explained by the p value of 0.000 which is less than the critical p value of 0.05.

4.12.2 Asset Quality and Sensitivity to Market Risk

Table 4.51: Moderating Effect of Sensitivity to Market Risk

ROA	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
Interaction term 2	0.34832	0.02016	17.28	0	0.30881	0.38783
cons	0.08422	0.14634	0.58	0.565	-0.2026	0.37105
R^2	0.743					
F statistics	298.56					
P value	0.000					

$Y = \beta_o + \beta_2 X_2.M + \epsilon$

SACCO Performance=0.08422+0.34832(Asset Quality * Sensitivity to Market Risk)

Results in table 4.51 showed that sensitivity to market risk had a significant moderating effect on asset quality as an internal factor of financial performance of SACCOs in Kenya. This can be explained by the p value of 0.000 which is less than the critical p value of 0.05.

4.12.3 Management Efficiency and Sensitivity to Market Risk

Table 4.52: Moderating Effect of Sensitivity to Market Risk of Management efficiency and Financial Performance

ROA	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
Interaction term 3	2.5E-05	1E-05	2.46	0.014	5.04E-06	4.5E-05
cons	0.38135	0.22273	1.71	0.087	-0.0552	0.81789
R^2	0.2168					
F statistics	6.05					
P value	0.0139					

Results in table 4.52 showed that sensitivity to market risk has a significant moderating effect on management efficiency as an internal factor of financial performance of SACCOs in Kenya. This can be explained by the p value of 0.0139 which is less than the critical p value of 0.05.

4.12.4 Earnings Ability and Sensitivity to Market Risk

Table 4.53: Moderating Effect of Sensitivity to Market Risk

ROA	Coef.	Std. Err.	Z	P>|z|	[95% Conf.	Interval]
Interaction term 4	0.43984	0.01648	26.69	0	0.40754	0.47215
cons	0.05051	0.12231	0.41	0.68	-0.1892	0.29024
R^2	0.8203					
F statistics	712.24					
P value	0.000					

$Y = \beta_o + \beta_4 X_4.M + \epsilon$

SACCO Performance=0.08422+0.34832 (Earnings Ability *Sensitivity to Market Risk)

Results in table 4.53 showed that sensitivity to market risk has a significant moderating effect on earnings ability as an internal factor of financial performance of SACCOs in Kenya. This can be explained by the p value of 0.000 which is less than the critical p value of 0.05.

4.12.5 Liquidity and Sensitivity to Market Risk

Table 4.54: Moderating Effect of Sensitivity to Market Risk

ROA	Coef.	Std. Err.	Z	P>|z|	[95% Conf.	Interval]
Interaction term 5	0.00141	0.00009	15.7	0	0.00124	0.00159
cons	0.28895	0.11861	2.44	0.015	0.05649	0.52142
R^2	0.6971					
F statistics	246.42					
P value	0.000					

$Y = \beta_o + \beta_5 X_5.M + \epsilon$

SACCO Financial Performance=0.028895+0.00141 (Liquidity *Sensitivity to Market Risk).

Results in table 4.54 showed that sensitivity to market risk has a significant moderating effect on liquidity as an internal factor of financial performance of SACCOs in Kenya. This can be explained by the p value of 0.000 which is less than the critical p value of 0.05.

4.13 Financial Performance of Savings and Credit Societies

This section captures descriptive statistics relating to financial performance of SACCOs.

4.13.1 Descriptive Statistics

Table 4.55: Profit Making

Response	Frequency	Percent
No	1	1.4
Yes	70	98.6
Total	**71**	**100**

The respondents were asked to indicate whether their organizations have been making profits and results in table 4.55 reveal that majority of 99 % of the respondents indicated yes while only 1% of the respondents indicated no, this implies that majority of the SACCOs have been making profit for the period they have been in existence.

Table 4.56: Financial Performance Descriptive Statistics

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Std. Dev
Our Sacco has experienced growth in retained earnings	0.00%	1.40%	2.80%	53.50%	40.80%	4.30	0.80
There has been an increase in shareholders' dividends	0.00%	0.00%	1.40%	33.80%	63.40%	4.56	0.75
There has been growth in dividend per share.	0.00%	0.00%	2.80%	35.20%	60.60%	4.52	0.77
Our organization declares dividends	0.00%	0.00%	8.50%	80.30%	9.90%	3.96	0.64
There has been contributions towards retained earnings	0.00%	0.00%	2.80%	90.10%	5.60%	3.97	0.56
Surpluses distributed depend on profit determined	0.00%	0.00%	7.00%	45.10%	46.50%	4.34	0.81
Surpluses distributed depends on shareholders expectations	38.00%	39.40%	0.00%	19.70%	1.40%	2.79	0.86
Surpluses distributed depend on volumes of profits	0.00%	0.00%	12.70%	59.20%	26.80%	4.08	0.79
Surpluses distributed as dividends depend on any method	1.40%	32.40%	18.30%	43.70%	2.80%	3.10	1.03
Average						**3.96**	**0.78**

The respondents were further asked to indicate the extent to which they agree or disagree with the following statements about the performance of their organizations;

the responses were rated on a five likert scale as presented in Table 4.56. Majority of 95% (53.5% + 40.8%) of the respondents agreed with the statement that our Sacco has experienced growth in retained earnings, 97% agreed with the statement that there has been an increase in shareholders' dividends, 96% agreed with the statement that there has been growth in dividend per share, 90% agreed with the statement that our organization declares dividends, 96% agreed with the statement that there has been contributions towards retained earnings, 92% agreed with the statement that surpluses distributed depend on profit determined, 86% agreed with the statement that surpluses distributed depend on volumes of profits, 47% of the respondents agreed with the statement that surpluses distributed as dividends depend on any method, However, 77% of the respondents disagreed with the statement that surpluses distributed depends on shareholders expectations.

On a five point scale, the average mean of the responses was 3.96 which means that majority of the respondents were agreeing with most of the statements; however the answers were varied as shown by a standard deviation of 0.78.

4.14 Correlation Analysis

Table 4.57 shows the overall correlation analysis results for all the variables.

Table 4.57: Overall Correlation Matrix

	ROA	Capital Adequacy	Asset Quality	Management Efficiency	Earnings Ability	Liquidity
ROA	1.000					
Capital Adequacy	0.7848*	1.000				
Asset Quality	0.8193*	0.6627*	1.000			
Management Efficiency	-0.0088	-0.0071	-0.0292	1.000		
Earning Ability	0.4032*	0.8447*	0.3180*	-0.0028	1.000	
Liquidity	0.8189*	0.5006*	0.7048*	-0.0081	0.0147	1.000

* Correlation is significant at the 0.05 level (2-tailed).

The overall correlation analysis results in table 4.57 revealed that there was a positive and significant association between capital adequacy and financial performance of SACCOs (r=0.7848*), the results indicated that there was a positive and a significant association between asset quality and financial performance of SACCOs (r=0.8193*), the results also indicated that there was a positive and a significant association between earnings ability and financial performance of SACCOs (0.4032*). Further, the results showed that there was a positive and a significant association between liquidity and financial performance of SACCOs (0.8189*). However, the results revealed that there was no significant association between management efficiency and financial performance of SACCOs (-0.0088).

4.15 Multivariate Regression model before Moderation

Results in Table 4.58 indicate the multivariate regression results before moderation.

Table 4.58: Regression Results before Moderation

Variables	Coef.	Std. Err.	z	P value
Capital Adequacy	0.42289	0.03717	11.38	0.000
Asset Quality	0.40025	0.04799	8.34	0.004
Management Efficiency	2.76E-10	2.81E-09	0.1	0.922
Earnings Ability	0.35962	0.44461	5.31	0.000
Liquidity	0.00181	0.00012	15.11	0.000
_cons	-0.5604	0.12641	-4.43	0.000
R Squared	0.7969			
F statistics	794.69			
P value	0.000			

The model before moderation was;

Financial Performance= - 0.5604+0.42289 capital adequacy+0.40025 asset quality +0.35962 earnings ability+0.00181 liquidity

In order to establish the effect of capital adequacy, asset quality, management efficiency, earnings ability and liquidity on financial performance (ROA) of SACCOs, a multivariate regression model was run and the results are presented in the Table 4.58 above. The results present the fitness of model used of the regression model in explaining the study phenomena. The independent variables except management efficiency were found to be satisfactory in explaining financial performance (ROA). This is supported by coefficient of determination also known as the R square of 79.6%. This means that the independent variables explain 79.6% of the variations in the dependent variable which is financial performance of SACCOs. The results further means that the model applied to link the relationship of the variables was satisfactory.

In statistics significance testing the p-value indicates the level of relation of the independent variables to the dependent variable. If the significance number found is less than the critical value also known as the probability value (P) which is statistically set at 0.05, then the conclusion would be that the model is significant in explaining the relationship; else the model would be regarded as non-significant. Table 4.58 provides the results on the analysis of the variance (ANOVA). The results indicate that the model was statistically significant. Further, the results imply that the independent variables are a good predictor of performance. This was supported by an F statistics of 794.69 and a p value (0.000) which was less than the conventional probability of 0.05significance level.

Regression of coefficients results in table 4.58 shows that capital adequacy and financial performance (ROA) are positively and significantly related (r=0.42289, p=0.000). The table also indicates that asset quality and financial performance (ROA) are positively and significantly related (r=0.40025, p=0.004). Further, earnings ability and financial performance (ROA) were found to be positively and significantly related (r=0.35962, p=0.000). It was further established that liquidity and financial performance (ROA) are positively and significantly related (r=0.00181, p=0.000). However, the relationship between management efficiency and financial performance (ROA) was found to be insignificant (p=0.922).

These findings agree with that of Boyd and Smith (2000), who conducted a study on the effect of inflation on the performance of commercial banks. The study found that there was significant negative relationship between inflation and the performance of the banking sector. According to the study, a rise in inflation reduces lending activities and equity development. This is because an increase in inflation diminishes the real return on and assets in general. In time of hyperinflation, lenders are gravely at a disadvantage.

4.16 Multivariate Regression Model after Moderation

Results in Table 4.59 indicate the multivariate regression results after moderation

Table 4.59: Regression Results after Moderation

Variable	Coef.	Std. Err.	z	P>|z|
X_1*M	0.048052	0.00312	15.4	**0.000**
X_2*M	-0.94566	0.05651	-16.73	**0.000**
X_3*M	-1.70E-06	8.86E-06	-0.19	**0.848**
X_4*M	1.139661	0.07273	15.67	**0.000**
X_5*M	-0.00083	0.0001	-8.23	**0.000**
_cons	0.044987	0.04045	1.11	**0.266**
R Squared	0.9406			
F statistics	4394.19			
P value	0.000			

The model after moderation was;

$$Y = \beta_o + \beta_1 X_1.M + \beta_2 X_2.M + \beta_3 X_3.M + \beta_4 X_4.M + \beta_5 X_5.M + \epsilon$$

Results in Table 4.59, shows the moderating effect of sensitivity to market risk on the internal factors of financial performance of savings and credit societies in Kenya. Results reveal that there is a significant moderating effect of sensitivity to market risk on internal factors of financial performance except management efficiency. The results were supported by a p value of (0.000).

Further, the results indicate a coefficient of determination also known as the R square of 94.1%. The R square before moderation was 79.69 % while after moderation it is 94.1%. This depicts that we reject the null hypothesis: Ho_6: Sensitivity to market risk has no statistical significant moderating effect on internal factors of financial performance of savings and credit societies in Kenya.

Below is the optimal regression model for this study.

Financial Performance= 0.044987 + 0.048052 (Capital Adequacy * Sensitivity to Market Risk) -0.94566 (Asset Quality * Sensitivity to Market Risk) +1.139661 (Earnings Ability * Sensitivity to Market Risk) -0.00083 (Liquidity * Sensitivity to Market Risk).

4.17 Hypothesis Testing and Discussion

This section presents the hypothesis testing of the study variables. The rule of thumb was to reject the hypothesis if the independent variable had a significant relationship with the dependent variable. The significance was tested at a critical P value of 0.05.

Table 4.60: Hypothesis Testing and Discussion

Objective No	Objective	Hypothesis	Rule	P value Financial Performance	P value Overall	Comment
Objective 1	To establish the effect of capital adequacy on the financial performance of savings and credit societies in Kenya.	H_{o1}: Capital adequacy has no statistical significant effect on financial performance of savings and credit societies in Kenya.	Reject H_{01} if p value for all capital adequacy aspects <0.05	0.000	0.000	The null hypothesis was rejected; therefore capital adequacy influences the financial performance of SACCOs in Kenya.

Objective 2	To determine the effect of asset quality on the financial performance of savings and credit societies in Kenya.	H_{o2}: Asset quality has no statistical significant effect on financial performance of savings and credit societies in Kenya.	Reject H_{02} if p value for all aspect of Asset Quality <0.05	0.000	0.000	The null hypothesis was rejected; therefore asset quality influences the financial performance of SACCOs in Kenya.
Objective 3	To evaluate the effect of management efficiency on financial performance of savings and credit societies in Kenya.	H_{o3}: Management efficiency has no statistical significant effect on financial performance of in Kenya.	Reject H_{03} if p value for all aspect of manage ment efficienc y<0.05	0.994	0.922	The null hypothesis was not rejected; therefore managemen t efficiency does not influence the financial performanc e of SACCOs in Kenya.

				0.000	0.000	
Objective 4	To establish the effect of earnings ability on financial performance of savings and credit societies in Kenya	H_{o4}: Earnings ability has no statistical significant effect on financial performance of savings and credit societies in Kenya.	Reject H_{04} if p value for all aspects of earnings ability< 0.05			The null hypothesis was rejected; therefore earnings ability influences the financial performance of SACCOs in Kenya.
Objective 5	To determine the effect of liquidity on financial performance of savings and credit societies in Kenya.	H_{o5}: Liquidity has no statistical significant effect on financial performance of savings and credit societies in Kenya.	Reject H_{05} if p value for all aspect of Liquidity <0.05	0.000	0.000	The null hypothesis was rejected; therefore liquidity influences the financial performance of SACCOs in Kenya.
Objective 6	To establish the moderating effect of sensitivity to	H_{o6}: Sensitivity to market risk has no statistical	Reject H_{06} if R^2 after moderation is	R^2 after moderation>R^2 before		The null hypothesis was rejected; therefore

market risk on internal factors of financial performance of savings and credit societies in Kenya.	significant moderating effect on internal factors of financial performance of savings and credit societies in Kenya.	greater than R^2 before moderation	moderation	sensitivity to market risk influences the relationship between internal factors and financial performance of SACCOs in Kenya.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of major findings of the study, relevant discussions, conclusions and the necessary recommendations. The study sought to establish the effect of internal factors of savings and credit cooperative societies in Kenya, capital adequacy, asset quality, earning ability, liquidity and management efficiency on financial performance of savings and credit societies in Kenya. This was done in line with the objectives of the study, areas of further research were suggested and limitations of the study were taken into account.

5.2 Summary of Findings

The summary is done in line with the objectives of the study based on the output of the descriptive and inferential statistical analyses guided to test the research hypothesis of the study.

5.2.1 Capital Adequacy and Financial Performance

The first objective of the study was to establish the effect of capital adequacy on the financial performance of savings and credit societies in Kenya. Majority of the respondents noted that observing the core capital to total asset requirement improved the financial performance of the Sacco also, observing the institutional capital to total asset requirement has improved the financial performance of the Sacco. Further, observing the minimum core capital requirement of Kshs. 10 million has improved the financial performance of the Sacco. Finally, observing the core capital to total deposits requirement has improved the financial performance of the Sacco.

Correlation analysis results showed that capital adequacy and financial performance of SACCOs are positively and significantly associated. Regression analysis results showed that there is a positive and significant statistical relationship between capital adequacy and financial performance of savings and credit societies in Kenya. The hypothesis results indicated that there is a statistical significant relationship between capital adequacy and financial performance of savings and credit societies in Kenya.

These findings agree with those of Berger and Bowman (2012), who indicated that capital helps small banks to increase their probability of survival and market share at all times. The study further argued that capital enhances the performance of medium and large SACCOS primarily during banking crises also Croteau (1956), Taylor (1979), Wolken and Navratil (1980) and who stated that capital adequacy ratios were important in expansion, merger and growth in deposit taking SACCOs. Mckillop and Williamson (2011) recognized the importance of capital management as an important ingredient in achieving optimal utilization of resources in an economy and also the improvement in quality of life.

5.2.2 Asset Quality and Financial Performance

The second objective of the study was to determine the effect of asset quality on the financial performance of savings and credit societies in Kenya. Majority of the respondents noted that their originations observe the general state of the economy before establishing a loan portfolio policy. They observe the trend of creditors before establishing a loan portfolio policy and further, the firms observe the overhead cost before establishing a loan portfolio policy.

Correlation analysis results showed that asset quality and financial performance of SACCOs are positively and significantly associated. Regression analysis results indicated that there is a positive and significant relationship between asset quality and financial performance of savings and credit societies in Kenya. The hypothesis results indicated that there is a statistical significant relationship between asset quality and financial performance of savings and credit societies in Kenya.

These findings agree with those of Manyuanda (2013), who examined the effect of nonperforming loans on the performance of SACCOs in Nairobi, Kenya. The study concluded that a significant negative relationship existed between non-performing loans and performance of SACCOs. The study recommended that SACCOs opt for equity financing instead of debt financing to improve on its financial leverage. SACCOs should also avoid excessive lending, maintain high credit standards and should limit lending to un-hedged borrowers.

5.2.3 Management Efficiency and Financial Performance

The third objective of the study was to evaluate the effect of management efficiency on financial performance of savings and credit societies in Kenya. Correlation analysis results showed that management efficiency and financial performance of SACCOs are not significantly associated. Regression analysis results indicated that there is no significant relationship between management efficiency and financial performance of savings and credit societies in Kenya. The hypothesis results indicated that there is no statistical significant relationship between management efficiency and financial performance of savings and credit societies in Kenya.

These findings contradicted with those of Maseki (2012), who studied the impact of knowledge management on performance of commercial banks in Kenya. The study found that knowledge management greatly affected performance of the commercial banks. According to the study knowledge management enhances product and service quality; increases productivity and innovative ability.

5.2.4 Earnings Ability and Financial Performance

The fourth objective of the study was to establish the effect of earnings ability on financial performance of savings and credit societies in Kenya. Majority of the respondents noted that earning ability determines the financial performance of a SACCOs. Also, earning ability guards the Sacco against erosion of capital due to potential changes. Further, rating manifests adequacy of the current and future earnings.

Correlation analysis results showed that earnings ability and financial performance of SACCOs are positively and significantly associated. Regression analysis results indicated that there is a positive and significant relationship between earnings ability and financial performance of savings and credit societies in Kenya. The hypothesis results indicated that there is a statistical significant relationship between earnings ability and financial performance of savings and credit societies in Kenya.

These findings disagree with of those of Kongiri (2012), who investigated the effect CAMEL variables on the efficiency of commercial banks. The study found that capital adequacy, earnings and liquidity ratio have a negative relationship to efficiency ratio

while management quality and asset quality have a positive relationship. The study mentioned that the earnings ability reflects the bank's ability to absorb losses, expand its financing, as well as, its ability to pay dividends to its shareholders, and helps develop an adequate amount of own capital.

5.2.5 Liquidity and Financial Performance

The fifth objective of the study was to determine the effect of liquidity on financial performance of savings and credit societies in Kenya. Majority of the respondents noted that observing liquidity at minimum statutory ratio of 15% improves the financial performance of the Sacco. Further, liquidity is measured in terms of the ratio of liquid assets to deposits and short term liabilities. Finally, external borrowing is used as an indicator of the liquidity status.

Correlation analysis results showed that liquidity and financial performance of SACCOs are positively and significantly associated. Regression analysis results indicated that there is a positive and significant relationship between liquidity and financial performance of savings and credit societies in Kenya. The hypothesis results indicated that there is a statistical significant relationship between liquidity and financial performance of savings and credit societies in Kenya.

These findings agree with that of Omino (2014), who analyzed the liquidity mitigation measures and performance of SACCOs in Kisumu County. The study found out that liquidity risk mitigation approaches adopted by different SACCOs had a significant effect on their financial performances. The study revealed that SACCOs adopted a more cautious position in their current liabilities to ensure that operating cash flows were sufficient to cover the short terms obligations entered by the firms. Further, the study revealed that debtor collection periods were longer to encourage voluntary membership and consequently the SACCOs were either unjustifiably constraining their creditor payment periods or were conditioned to do so.

5.2.6 Sensitivity to Market Risk

The sixth objective of the study was to establish the overall moderating effect of sensitivity to market risk on the internal factors of financial performance of savings and credit societies in Kenya. The results indicated that the firms involve stakeholders,

directors and regulator in formulation of both the sensitivity to interest rate and inflation rate policies.

The moderation results indicated that the interaction effect of sensitivity to market risk on the relationship between the independent variables (except management efficiency) and dependent variable was significant. Since the calculated p value of the interaction was $0.000 < 0.05$, the null hypothesis was rejected and thus sensitivity to market risk has a statistical significant moderating effect on internal factors of financial performance of savings and credit societies in Kenya.

These findings agree with that of Milanova (2010), who examined sensitivity to market risk management in banks. The study focused on interest rate risk management using the Value at Risk (VAR) model. The study found that market interest rates, currency exchange rates, prices of shares and exchange tradable commodities have an adverse impact on bank incomes and capital position. The study recommended rigorous risk management to mitigate risk. Further, the findings agree with Tomuleasa (2014), who studied the determinants of European bank performance. The study focused on bank specific factors and macroeconomic variables. The study mentioned that effect of inflation on profitability is tethered to the capacity of bank's management to forecast inflation. The study established mixed findings. Banks that were able to correctly anticipate inflation had the opportunity to adjust their interest rates accordingly and consequently to earned higher profits. The performance of those that could not predict inflation was adversely affected.

5.3 Conclusions
5.3.1 Capital Adequacy and Financial Performance

Based on the findings the study concluded that capital adequacy influenced the financial performance of savings and credit societies in Kenya. This can be explained by the regression results which showed that the influence was positive and also showed the magnitude by which capital adequacy influenced the financial performance of savings and credit societies. Based on the findings, the study concluded that an improvement in capital adequacy by 1 unit would lead to an improvement in financial performance of SACCOs by 0.423 units.

5.3.2 Asset Quality and Financial Performance

Based on the findings the study concluded that asset quality influenced the financial performance of savings and credit societies in Kenya. This can be explained by the regression results which showed that the influence was positive and also showed the magnitude by which asset quality influenced the financial performance of savings and credit societies. Based on the findings, the study concluded that an improvement in asset quality by 1 unit would lead to an improvement in financial performance of SACCOs by 0.400units.

5.3.3 Management Efficiency and Financial Performance

Based on the findings the study concluded that management efficiency has no statistical significant influence on the financial performance of savings and credit societies in Kenya. The regression results revealed that management efficiency has no statistical significant influence on the financial performance of savings and credit societies ($p=0.922$).

5.3.4 Earnings Ability and Financial Performance

Based on the findings the study concluded that earnings ability influenced the financial performance of savings and credit societies in Kenya. This can be explained by the regression results which showed that the influence was positive and also showed the magnitude by which earnings ability influenced the financial performance of savings and credit societies. From the findings, the study concluded that an improvement in earnings ability by 1 unit would lead to an improvement in financial performance of SACCOs by 0.359 units.

5.3.5 Liquidity and Financial Performance

Based on the findings the study concluded that liquidity influenced the financial performance of savings and credit societies in Kenya. This can be explained by the regression results which showed that the influence was positive and also showed the magnitude by which liquidity influenced the financial performance of savings and credit societies. From the findings, the study concluded that an improvement in liquidity by 1 unit would lead to an improvement in financial performance of SACCOs by 0.0012 units.

5.3.6 Sensitivity to Market Risk

Based on the findings, the study concluded that sensitivity to market risk moderates the interaction between capital adequacy, asset quality, earnings ability, liquidity and financial performance of savings and credit societies in Kenya.

5.4 Recommendations

The study recommendations are in line with the objectives, findings and conclusions of the study.

5.4.1 Capital Adequacy and Financial Performance

Based on the findings, the study recommended that Saccos need to strengthen their capital adequacy elements. In particular, the management of the SACCOs should ensure that they observe the core capital to total asset requirement. The firms should also observe the institutional capital to total asset requirement. Further, the firms should observe the minimum core capital requirement as well as the core capital to total deposits requirement. This will lead to improvement in the financial performance of the SACCOs as illustrated by the regressions results, which showed a positive and significant relationship between capital adequacy elements and financial performance of SACCOs.

5.4.2 Asset Quality and Financial Performance

The study recommends that management need to be cautious in setting up a credit policy that will not negatively affects profitability and also they need to know how credit policy affects the operation of their banks to ensure judicious utilization of deposits and maximization of profit. The study also recommends credit information sharing between SACCOs. This will play a significant role in determining performance of deposit taking SACCOs. Further, the study recommends that SACCOs opt for equity financing instead of debt financing to improve on its leverage. SACCOs should also avoid excessive lending, maintain high credit standards and limit lending to un-hedged borrowers.

5.4.3 Management Efficiency and Financial Performance

Based on the findings, the study recommended the need for SACCOs to strengthen management efficiency elements. Some of these elements include; improved business plan, enhanced independent internal and external audit implementation and enhanced capability of board of directors and senior management.

5.4.4 Earnings Ability and Financial Performance

The study recommends for continuous review of credit policies, establishment of irrecoverable loan provision policies, development of sound staff recruitment policies and the use of appropriate financing mix. Further, the Government should review legal framework to ensure that institutional capital is used to grow SACCOs' wealth.

5.4.5 Liquidity and Financial Performance

Based on the findings, the study recommended the need for the deployment of efficient systems to strengthen liquidity risk control fundamentals. SACCOs should also consider seeking professional guidance towards adopting policies on asset and liability management.

5.5 Suggested areas for Further Study

The study sought to establish the effect of internal factors on financial performance of deposit taking savings and credit societies in Kenya. Further studies could, thus focus on internal factors in other financial institutions such as insurance, MFIs and commercial banks. In particular, further studies should look into the effect of capital adequacy, asset quality, earning ability, liquidity and management efficiency on financial performance of the insurance firms, MFIs and commercial banks. This would facilitate comparison of the findings with those of the current study.

The findings of this study found no significant relationship between management efficiency and financial performance of SACCOs. Further studies should explore this kind of research so as to obtain conclusive results in regard to the effect of management efficiency on financial performance of firms.

Future researchers could also consider introducing different variables other than sensitivity to market risk in testing for moderation effect. Some of these variables could be regulation frameworks, firms size and organization culture.

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Appendix I: Questionnaire

This questionnaire is divided into nine short sections that should take only a few moments of your time to complete. Please respond by ticking the appropriate box or filling in your answers in the blank spaces provided. This is an academic exercise and all information collected from respondents will be treated with strict confidentiality.

Thank you very much for your cooperation

SECTION 1: GENERAL INFORMATION

1. Name of the SACCO (optional)…….………………………….

2. Who are your members? ....

3. How long has the SACCO been in existence? ………………...

SECTION 2: CAPITAL ADEQUACY

To what extent do you agree or disagree with the following statements on capital adequacy? Where; 5 strongly agree, 4 agree, 3 neutral 2 disagree, 1 strongly disagree.

	Capital Adequacy Ratios	**5**	**4**	**3**	**2**	**1**
1	Observing the core capital to total asset requirement has improved the financial performance of the Sacco					
2	Observing the institutional capital to total asset requirement has improved the financial performance of the Sacco					
3	Observing the minimum core capital requirement of Kshs. 10 million has improved the financial performance of the Sacco					

4	Observing the core capital to total deposits requirement has improved the financial performance of the Sacco					

SECTION 3: ASSET QUALITY

To what extent do you agree or disagree with the following statements on asset quality? Where; 5 strongly agree, 4 agree, 3 neutral 2 disagree, 1 strongly disagree.

	Loan Portfolio Policies	5	4	3	2	1
1	Our Sacco has a credit policy in place					
2	Our Sacco observes the general state of the economy before establishing a loan portfolio policy					
3	Our Sacco observes the trend of creditors before establishing a loan portfolio policy					
4	Our Sacco observes the overhead cost before establishing a loan portfolio policy					

SECTION 4: Management Efficiency

To what extent do you agree or disagree with the following statements on management efficiency? Where; 5 strongly agree, 4 agree, 3 neutral 2 disagree, 1 strongly disagree.

	Management Efficiency	5	4	3	2	1

		5	4	3	2	1
1	Observing management efficiency has led to improved strategic plan of the Sacco					
2	Observing management efficiency has led to improved business plan of the Sacco					
3	Observing management efficiency has enhanced independent internal and external audit implementation					
4	Observing management efficiency has enhanced the capability of board of directors and senior management					
5	Observing management efficiency has led to a fit and proper test					

SECTION 5: Earnings Ability

To what extent do you agree or disagree with the following statements on earnings ability? Where; 5 strongly agree, 4 agree, 3 neutral 2 disagree, 1 strongly disagree.

	Earning Ability	5	4	3	2	1
1	The earning ability determines the financial performance of a Sacco					
2	The earning ability guards the Sacco against erosion of capital due to potential changes.					
3	The rating manifest adequacy of the current and future earnings					

Relative to industry ratings, how do you rate the quality of the organization's earnings for the past 5 years?

Year	By 0 to 20%	By 21% to 50%	By 51% to 75%	By 76% to 100%	By Over 100%
2015					
2014					
2013					
2012					
2011					

Does the earnings ability influence the performance of your organization?

a) Yes   b) No

SECTION 6: LIQUIDITY

To what extent do you agree or disagree with the following statements on liquidity? Where; 5 strongly agree, 4 agree, 3 neutral 2 disagree, 1 strongly disagree.

	Liquidity	5	4	3	2	1
1	Capping external debt at 25% improves the financial performance of the Sacco					
2	Observing liquidity at minimum statutory ratio of 15% improves the financial performance of the Sacco					
3	Liquidity is measured in terms of the ratio of liquid assets to deposits and short term liabilities					

4	External borrowing is used as an indicator of the liquidity status					

Does your organization possess adequate liquidity to meet its obligations as and when they fall due?

   a) Yes   b) No

Does the level of liquidity influence the performance of your organization?

   a) Yes   b) No

SECTION 7: SENSITIVITY TO MARKET RISK

a. Sensitivity to Interest Rate Risk

   1. Does your Sacco have specific policies for managing sensitivity to interest rate risks?

            Yes [ ]   NO [ ]

   2. If yes, to what extent do you agree or disagree with the following statements on sensitivity to interest rate risk? Where; 5 strongly agree, 4 agree, 3 neutral 2 disagree, 1 strongly disagree.

	Statements	5	4	3	2	1
1	Our Sacco involves stakeholders in formulating the sensitivity to interest rate policies					
2	Our Sacco involves the director in formulating the sensitivity to interest rate policies					
3	Our Sacco involves the regulator in formulating the sensitivity to interest rate policies					

b. Sensitivity to Inflation Risk

1. Does your Sacco have specific policies for managing sensitivity to inflation risks?

<div align="center">Yes [ ]   No [ ]</div>

2. If yes, to what extent do you agree or disagree with the following statements on sensitivity to inflation rate risk? Where; 5 strongly agree, 4 agree, 3 neutral 2 disagree, 1 strongly disagree.

	Statements	5	4	3	2	1
1	Our Sacco involves stakeholders in formulating the sensitivity to inflation rate policies					
2	Our Sacco involves the director in formulating the sensitivity to inflation rate policies					
3	Our Sacco involves the regulator in formulating the sensitivity to inflation rate policies					

SECTION 8: PERFORMANCE OF DEPOSIT TAKING SACCO

Has your organization been making profits?

a) Yes [ ]   b) No [ ]

If yes, to what extent do you agree or disagree with the following statements about the performance of your organization? Where; 5 is strongly agree and 4 is agree, 3 Neutral, 2 is disagree and 1 is strongly disagree

	Performance	5	4	3	2	1
1	Our Sacco has experienced growth in retained earnings					
2	There has been an increase in shareholders' dividends					
3	There has been growth in dividend per share.					
4	Our organization declares dividends					
5	There has been contributions towards retained earnings					
6	Surpluses distributed depend on profit determined					
7	Surpluses distributed depends on shareholders expectations					
8	Surpluses distributed depend on volumes of profits					
9	Surpluses distributed as dividends depend on any method					

Appendix II: List of SACCOS

LICENSED SACCO SOCIETIES FOR PERIOD ENDING 1ST JANUARY 2012

1. AFYA SACCO SOCIETY LIMITED

2. ASILI SACCO SOCIETY LIMITED

3. BANDARI SACCO SOCIETY LIMITED

4. BARAKA SACCO SOCIETY LIMITED

5. BARINGO FARMERS SACCO SOCIETY Limited

6. BARINGO TEACHERS SACCO

7. SOCIETY LIMITED BIASHARA SACCO SOCIETY LIMITED

8. BINGWA/KIRINYAGA TEA SACCOSOCIETY LIMITED

9. BORABU FARMERS TEA SACCO SOCIETY LIMITED

10. BUNGOMA TEACHERS SACCOSOCIETY LIMITED

11. BURETI TEA SACCO SOCIETYLIMITED

12. CHAI SACCO SOCIETY LIMITED

13. CHEMELIL SACCO SOCIETY LIMITED

14. CHEPSOL TEA GROWERS SACCO SOCIETY LIMITED

15. COMOCO SACCO SOCIETY LIMITED

16. DIOCESE OF MERU SACCO SOCIETY LIMITED

17. EMBU TEACHERS SACCO SOCIETY LIMITED

18. FARIJI SACCO SOCIETY LIMITED

19. GITHUNGURI DAIRY SACCOSOCIETY LIMITED

20. GUSII MWALIMU SACCO SOCIETY LIMITED

21. HARAMBEE SACCO SOCIETY LIMITED

22. IRIANYI TEA SACCO SOCIETY LIMITED

23. JAMII SACCO SOCIETY LIMITED

24. KAKAMEGA TEACHERS SACCO SOCIETY LIMITED

25. KEIYO TEACHERS SACCO SOCIETY LIMITED

26. KENPIPE SACCO SOCIETY LIMITED

27. KENYA CANNERS SACCO SOCIETY LIMITED

28. KENYA POLICE SACCO SOCIETY LIMITED

29. KERICHO TEA/K.H. SACCO SOCIETY LIMITED

30. KIAMBAA DAIRY RURAL SACCO SOCIETY LIMITED

31. KIAMBU UNITY FINANCE SACCO SOCIETY LIMITED

32. KILIFI TEACHERS SACCO SOCIETY LIMITED

33. KINGDOM SACCO SOCIETY LIMITED

34. KIPSIGIS TEACHERS SACCO SOCIETY LIMITED

35 KIPSIGIS TEACHERS CO-OP

35. KITE SACCO SOCIETY LIMITED

36. KITUI TEACHERS SACCO SOCIETY LIMITED

37. KMFRI SACCO SOCIETY LIMITED

38. KONOIN TEA GROWERS SACCO SOCIETY LIMITED

39. KURIA TEACHERS SACCO SOCIETY LIMITED

40. MAGADI SACCO SOCIETY LIMITED

41. MATHIRA COFFEE FARMERS SACCO SOCIETY LIMITED

42. MAUA METHODIST SACCO SOCIETY LIMITED

43. MERU SOUTH FARMERS SACCO SOCIETY LIMITED

44. METROPOLITAN SACCO SOCIETY LIMITED

45. MOMBASA PORT SACCO SOCIETY LIMITED

46. MOMBASA TEACHERS SACCO SOCIETY LIMITED

47. MUHIGIA SACCO SOCIETY LIMITED

48. MUMIAS OUTGROWERS SACCO SOCIETY LIMITED

49. MUNGANIA TG SACCO SOCIETY LIMITED

50. MURAMATI SACCO SOCIETY LIMITED

51. MURANG'A TEACHERS SACCO SOCIETY LIMITED

52. MWALIMU SACCO SOCIETY LIMITED

53. MWITO SACCO SOCIETY LIMITED

54. NACICO SACCO SOCIETY LIMITED

55. NAKURU TEACHERS SACCO SOCIETY LIMITED

56. NANDI HEKIMA SACCO SOCIETY LIMITED

57. NAROK TEACHERS SACCO SOCIETY LIMITED

58. NATION STAFF SACCO SOCIETY LIMITED

59. NDEGE CHAI SACCO SOCIETY LIMITED

60. NITHI TEA GROWERS SACCO SOCIETY LIMITED

61. NYAMIRA TEA FARMERS SACCO SOCIETY LIMITED

62. NYANDARUA TEACHERS SACCO SOCIETY LIMITED

63. NYERI TEACHERS SACCO SOCIETY LIMITED

64. ORTHODOX SACCO SOCIETY LIMITED

65. SAFARICOM SACCO SOCIETY LIMITED

66. SHERIA SACCO SOCIETY LIMITED

67. SIAYA TEACHERS SACCO SOCIETY LIMITED

68. SIMBA CHAI SACCO SOCIETY LIMITED

69. SOT TEA GROWERS SACCO SOCIETY LIMITED

70. SOUTH IMENTI TG SACCO SOCIETY LIMITED

71. STIMA SACCO SOCIETY LIMITED

72. TAI/KIAMBU TG SACCO SOCIETY LIMITED

73. TAIFA SACCO SOCIETY LIMITED

74. TENHOS SACCO SOCIETY LIMITED

75. THARAKA NITHI TEACHRS SACCO SOCIETY LIMITED

76. TRANS-NZOIA TEACHERS SACCO SOCIETY LIMITED

77. UN SACCO SOCIETY LIMITED

78. UNIVERSAL TRADERS SACCO SOCIETY LIMITED

79. WAKENYA PAMOJA SACCO SOCIETY LIMITED

80. WAKULIMA DAIRY SACCO SOCIETY LIMITED

81. WANANCHI SACCO SOCIETY LIMITED

82. WANANDEGE SACCO SOCIETY LIMITED

83. WARENG TEACHERS SACCO SOCIETY LIMITED

Source: supervision@sasra.go.ke

Appendix III: Raw Data

SACCO	Year	Capital Adequacy ratio	Asset Quality	Management efficiency	Gross profit_margin	Liquidity	Sensitivity to market risk	ROA
Simba Chai Sacco	2012	0.002016	9.89E-12	2.04E+08	0.000687	0.001359	0.000328	2.29352E-06
Simba Chai Sacco	2013	0.002016	0.005615	0.359082	0.015637	0.003675	0.000328	1.78956E-05
Simba Chai Sacco	2014	0.005264	0.012243	0.429964	0.000945	0.020077	0.000403	0.000167727
Simba Chai Sacco	2015	0.005264	0.015809	0.332985	0.001009	0.02067	0.000847	0.000181521
Simba Chai Sacco	2016	0.005264	0.016565	0.317786	0.001104	0.05364	0.000969	0.00019505
Airports Sacco	2012	0.006217	0.017853	0.348259	0.001377	0.058417	0.00107	0.00030482
Airports Sacco	2013	0.007331	0.027894	0.262814	0.001406	0.061401	0.001168	0.000313473
Airports Sacco	2014	0.009776	0.05887	0.166065	0.354497	0.062211	0.001168	0.00048027
Airports Sacco	2015	0.009986	0.062645	0.159407	0.392991	0.06305	0.0013	0.000691512
Airports Sacco	2016	0.012324	0.062645	0.196729	0.00179	0.063794	0.0013	0.000708819
Kenya Police	2012	0.013678	0.06	0.214995	0.295912	0.06482	0.001301	0.000708819
Kenya Police	2013	0.015186	0.066181	0.229456	0.288428	0.068248	0.00132	0.000754848
Kenya Police	2014	0.015329	0.06742	0.227361	0.296533	0.0709	0.001344	0.000754848
Kenya Police	2015	0.017528	0.069905	0.25074	0.001997	0.079501	0.001492	0.000908004
Kenya Police	2016	0.0189	0.070898	0.266575	0.265958	0.080051	0.001492	0.000908139
Lamu Teachers	2012	0.020011	0.07251	0.275975	0.26274	0.091509	0.001492	0.000924915

Lamu Teachers	2013	0.020585	0.073676	0.279401	0.263693	0.092047	0.001492	0.0010173
Lamu Teachers	2014	0.02627	0.074045	0.354783	0.208704	0.09648	0.001492	0.001242996
Lamu Teachers	2015	0.026843	0.074656	0.359559	0.207631	0.097617	0.001572	0.001297051
Lamu Teachers	2016	0.027406	0.07745	0.35385	0.218878	0.097936	0.001715	0.001343294
Kiambaa Dairy	2012	0.02768	0.077694	0.356274	0.218074	0.09827	0.001745	0.001418467
Kiambaa Dairy	2013	0.027685	0.079517	0.348165	0.228389	0.098993	0.002124	0.001481995
Kiambaa Dairy	2014	0.028458	0.081568	0.348891	0.233791	0.103354	0.002222	0.001631017
Kiambaa Dairy	2015	0.030495	0.081891	0.372391	0.219906	0.106635	0.00253	0.001646511
Kiambaa Dairy	2016	0.031788	0.08198	0.387753	0.00268	0.115017	0.002578	0.001749628
Kite Sacco	2012	0.031788	0.08198	0.387753	0.003035	0.117064	0.002749	0.001760416
Kite Sacco	2013	0.034979	0.083548	0.41867	0.004135	0.121615	0.002844	0.002034894
Kite Sacco	2014	0.037002	0.084295	0.438961	0.004973	0.130047	0.002869	0.002034894
Kite Sacco	2015	0.037034	0.084295	0.43934	0.005599	0.139817	0.002941	0.002056821
Kite Sacco	2016	0.037071	0.085264	0.434774	0.006472	0.143444	0.002963	0.002080661
Githunguri Dairy	2012	0.040161	0.09	0.459808	0.008168	0.150272	0.003103	0.00236904
Githunguri Dairy	2013	0.04	0.087402	0.477242	0.008168	0.160231	0.003122	0.00236904
Githunguri Dairy	2014	0.043409	0.088388	0.491124	0.00963	0.189854	0.003122	0.002423669
Githunguri Dairy	2015	0.043461	0.089025	0.488182	0.013749	0.203672	0.003248	0.00250897
Githunguri Dairy	2016	0.043796	0.089243	0.49075	0.015932	0.214379	0.003259	0.002590433
Baraton Savings	2012	0.0444	0.09	7.181818	0.015932	0.246786	0.0033	0.002604271

	Year							
Baraton Savings	2013	0.044796	0.09	7.515464	0.017103	0.246786	0.003331	0.002604271
Baraton Savings	2014	0.044796	0.09114	0.491508	0.01796	0.253386	0.003347	0.002745373
Baraton Savings	2015	0.046098	0.092993	8.614583	0.01972	0.337125	0.003363	0.002745373
Baraton Savings	2016	0.05	0.094795	0.488389	0.020507	0.337891	0.003381	0.002830355
Mentor Sacco	2012	0.046555	0.094849	0.490834	0.020791	0.352045	0.003415	0.002830355
Mentor Sacco	2013	0.048131	0.095181	11.875	0.022201	0.373223	0.003488	0.002853703
Mentor Sacco	2014	0.05	0.095202	0.509565	0.022458	0.397977	0.003499	0.002881772
Mentor Sacco	2015	0.05001	0.095321	0.524649	0.022846	0.437004	0.003628	0.002956866
Mentor Sacco	2016	0.050511	0.095321	12.5	0.024456	0.437004	0.003628	0.002961124
MMH Sacco	2012	0.05	0.10	0.527422	0.025	0.442507	0.003652	0.003044177
MMH Sacco	2013	0.051982	0.09621	0.540293	0.025626	0.456857	0.003731	0.003177829
MMH Sacco	2014	0.052236	0.096366	12.94118	0.026446	0.456857	0.003748	0.003192141
MMH Sacco	2015	0.054592	0.096848	12.94118	0.028174	0.467903	0.003756	0.003243861
MMH Sacco	2016	0.054906	0.096887	12.94118	0.028342	0.467903	0.003797	0.003257136
Nyara Vision	2012	0.056016	0.097406	12.94118	0.029547	0.470946	0.003885	0.003257136
Nyara Vision	2013	0.057545	0.10	13.63889	0.030065	0.504187	0.003952	0.003308058
Nyara Vision	2014	0.058651	0.10	15.39623	0.031848	0.51	0.003952	0.003357022
Nyrga Vision	2015	0.06	0.09894	15.775	0.03267	0.51	0.004023	0.003533409
Nyara Vision	2016	0.058907	0.100999	16.33929	0.033778	0.524949	0.004042	0.003605474
NRS	2012	0.05961	0.101529	16.33929	0.035301	0.524949	0.004054	0.003629197

NRS	2013	0.059993	0.10	19.51087	0.036257	0.547073	0.004079	0.003803396
NRS	2014	0.06016	0.102104	19.51087	0.037173	0.55	0.004126	0.003908962
NRS	2015	0.060723	0.102104	20	0.037173	0.55	0.004126	0.003942365
NRS	2016	0.060821	0.104034	21.39286	0.037866	0.581804	0.004276	0.003960673
Narok teachers	2012	0.060821	0.104034	22.31707	0.037866	0.587241	0.004353	0.004374798
Narok teachers	2013	0.060973	0.10444	22.83333	0.038528	0.62	0.004355	0.004385756
Narok teachers	2014	0.061469	0.104641	26.40909	0.039214	0.62	0.004373	0.004489559
Narok teachers	2015	0.061768	0.105306	0.58655	0.039461	0.621031	0.004426	0.004512747
Narok teachers	2016	0.061895	0.105775	29.31429	0.040434	0.650581	0.004443	0.004612866
Nacico	2012	0.062074	0.105998	0.585615	0.040434	0.657817	0.004575	0.004860646
Nacico	2013	0.062982	0.106213	31.26957	0.040615	0.667767	0.004628	0.004860646
Nacico	2014	0.064816	0.106601	31.54386	0.040615	0.67671	0.004655	0.005038035
Nacico	2015	0.064994	0.106869	31.54386	0.040709	0.676928	0.004724	0.005641744
Nacico	2016	0.065861	0.106869	31.84211	0.04307	0.68	0.00479	0.005743215
Miliki	2012	0.065928	0.107007	35.35556	0.043333	0.68	0.00482	0.00612626
Miliki	2013	0.06604	0.107213	35.45652	0.043554	0.692119	0.004862	0.00612626
Miliki	2014	0.068459	0.107222	39.56338	0.043554	0.696454	0.004863	0.00617525
Miliki	2015	0.068744	0.107222	42.67333	0.046097	0.696454	0.004863	0.006275559
Miliki	2016	0.069605	0.1077	42.92	0.046097	0.713632	0.004886	0.00651476
Mwalimu National	2012	0.069941	0.108922	43.75	0.046684	0.734776	0.005045	0.01

Name	Year							
Mwalimu National	2013	0.070325	0.109124	44.24194	0.048896	0.764472	0.005096	0.006644393
Mwalimu National	2014	0.071009	0.109215	45.33333	0.049155	0.766132	0.005124	0.01
Mwalimu National	2015	0.071223	0.109586	45.38596	0.050025	0.773343	0.005175	0.00690335
Mwalimu National	2016	0.07146	0.109942	48.31034	0.050542	0.774375	0.005204	0.007017819
Ngarisha	2012	0.07206	0.110165	48.74797	0.050542	0.783644	0.005353	0.007032964
Ngarisha	2013	0.073062	0.110366	52.25225	0.05096	0.783644	0.005415	0.007195752
Ngarisha	2014	0.075818	26563.6	54.36111	0.05096	0.794877	0.005417	0.007284426
Ngarisha	2015	0.075818	0.112451	55.48148	0.052913	0.809121	0.005455	0.007366484
Ngarisha	2016	0.076637	0.112947	56	0.053392	0.835685	0.005455	0.007395464
Nassefu	2012	0.077085	0.114044	60.01852	0.055117	0.835685	0.005459	0.007481862
Nassefu	2013	0.078649	0.114419	60.25714	0.055439	0.865029	0.005496	0.01
Nassefu	2014	0.078815	0.115214	62.5	0.055759	0.865029	0.005521	0.00765728
Nassefu	2015	0.078815	0.11546	65.71053	0.056534	0.890987	0.005676	0.007843289
Nassefu	2016	0.078972	0.115687	65.71429	0.057045	0.921414	0.005872	0.007964268
Nanyuki equator	2012	0.079235	0.12	66.25	0.057051	0.948243	0.005948	0.008020956
Nanyuki equator	2013	0.079235	0.116194	0.68192	0.060782	0.981391	0.00607	0.008038355
Nanyuki equator	2014	0.079679	0.116381	69.10526	0.061857	0.981741	0.006096	0.008253852
Nanyki equator	2015	0.080385	0.116537	69.10526	0.061857	0.986934	0.006134	0.0084584
Nanyuki equator	2016	0.080474	0.117128	70	0.062195	1.00	0.00621	0.0084584
Bingwa	2012	0.081632	0.117128	71.80279	0.063951	1.00	0.006641	0.008505959

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Bingwa	2013	0.082326	0.117139	72.48438	0.063951	1	0.006641	0.008532559
Bingwa	2014	0.082326	0.119288	74	0.063951	1	0.006645	0.008532559
Bingwa	2015	0.082361	0.119353	80.90291	0.063951	1	0.006645	0.008738549
Bingwa	2016	0.082361	0.119572	81.76667	0.063951	1	0.006985	0.008992835
Magereza	2012	0.082964	0.119572	90.22222	0.063951	1	0.007031	0.009167168
Magereza	2013	0.088618	0.119721	92.52632	0.064331	1.00894	0.007097	0.01
Magereza	2014	0.088885	0.120378	93.18182	0.06436	1.00894	0.007167	0.009246861
Magereza	2015	0.08894	0.12	93.8	0.066342	1.00937	0.007311	0.009357208
Magereza	2016	0.08894	0.12051	95.25	0.066757	1.013777	0.007311	0.009454732
All churches	2012	0.089402	0.12051	98	0.067857	1.030534	0.007311	0.009693197
All churches	2013	0.090053	0.121864	101.0787	0.067857	1.030534	0.007311	0.009693197
All churches	2014	0.091636	0.122209	101.0787	0.06811	1.036247	0.007311	0.01
All churches	2015	0.091737	0.122343	101.1818	0.06823	1.036878	0.007363	0.009747177
All churches	2016	0.093052	0.12271	101.3636	0.068552	1.037633	0.00738	0.01
Fariji Sacco	2012	0.09314	0.122843	102.0847	0.068806	1.038498	0.007399	0.010063079
Fariji Sacco	2013	0.094135	0.122971	102.1	0.069317	1.039354	0.007485	0.010509418
Fariji Sacco	2014	0.095202	0.12298	103.8	0.069699	1.041842	0.007499	0.010515581
Fariji Sacco	2015	0.095202	0.12325	104.8083	0.069743	1.046463	0.007546	0.010882731
Fariji Sacco	2016	0.096026	0.123262	104.8083	0.071045	1.046906	0.007566	0.010917321
Metropolitan	2012	0.096588	0.123566	107.0909	0.073204	1.046906	0.007665	0.010926857

							0.010975195
Metropolitan	2013	0.096605	0.12358	109.3333	0.074752	1.04866	0.007701
Metropolitan	2014	0.097828	20587.22	110.3864	0.075379	1.049216	0.007711	0.011261021
Metropolitan	2015	0.098034	0.12487	114.3	0.077145	1.049216	0.007765	0.0114485
Metropolitan	2016	0.098059	0.124885	115	0.077341	1.052643	0.007813	0.011527144
Cosmopolitan	2012	0.09807	0.124885	116.3143	0.078964	1.053288	0.007839	0.011586278
Cosmopolitan	2013	0.098314	0.12497	116.3827	0.080881	1.053754	0.007867	0.011666491
Cosmopolitan	2014	0.098673	20410.85	116.3827	0.081381	1.054624	0.007903	0.011685464
Cosmopolitan	2015	0.098673	20420.98	119.0667	0.081876	1.056233	0.007975	0.011727204
Cosmopolitan	2016	0.099544	0.125502	121.8182	0.08294	1.058667	0.007984	0.011740328
Lengo	2012	0.100076	0.125595	121.8182	0.085421	1.061756	0.008011	0.011908859
Lengo	2013	0.101356	0.125779	124.1163	0.086868	1.067987	0.008368	0.011973006
Lengo	2014	0.103452	0.125888	124.1163	0.086907	1.06919	0.008379	0.011998741
Lengo	2015	0.103655	19439.51	124.1163	0.087424	1.07071	0.008427	0.012011054
Lengo	2016	0.103896	0.126482	124.3	0.088686	1.073818	0.008478	0.012018946
Ilkisonko	2012	0.10425	19299.76	126.0814	0.088969	1.075201	0.008479	0.012101658
Ilkisonko	2013	0.10441	0.12741	127.9348	0.089229	1.075458	0.008485	0.012140529
Ilkisonko	2014	0.104425	0.12741	132.1566	0.091456	1.075458	0.008514	0.012211307
Ilkisonko	2015	0.104783	0.128534	132.1566	0.091962	1.075809	0.008533	0.01235794
Ilkisonko	2016	0.105154	0.128667	132.484	0.093762	1.076685	0.008654	0.01235794
Hazina	2012	0.105935	0.128667	132.8452	0.093986	1.077815	0.008662	0.012452517

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Hazina	2013	0.106157	0.129643	132.8452	0.102876	1.081279	0.008691	0.012491618
Hazina	2014	0.106281	0.129883	135	0.103942	1.084775	0.008785	0.012580044
Hazina	2015	0.106281	0.130171	135	0.10458	1.087188	0.008789	0.012618349
Hazina	2016	0.106606	0.13021	138.2188	0.106528	1.088127	0.008825	0.012665898
Jamii savings	2012	0.108432	0.13021	138.4545	0.109222	1.088209	0.008896	0.01281676
Jamii savings	2013	0.109761	0.13021	138.4545	0.110094	1.088209	0.008896	0.013058287
Jamii savings	2014	0.109829	0.130378	140	0.112071	1.09047	0.008896	0.013529666
Jamii savings	2015	0.109829	0.130681	140.2093	0.113399	1.090478	0.008896	0.013541549
Jamii savings	2016	0.11085	0.13	140.2093	0.114866	1.091675	0.008896	0.013557221
Kenpipe sacco	2012	0.110934	0.132529	141.0492	0.116221	1.091675	0.008928	0.013604998
Kenpipe sacco	2013	0.110934	0.133379	142.8529	0.116387	1.093191	0.009037	0.013649443
Kenpipe sacco	2014	0.111138	0.133379	143.2	0.1164	1.094829	0.009126	0.013674492
Kenpipe sacco	2015	0.111451	0.134676	143.2	0.117633	1.094829	0.009139	0.013725224
Kenpipe sacco	2016	0.111741	0.134951	143.3333	0.117707	1.095389	0.009153	0.013818795
Fortune sacco	2012	0.112136	0.135252	143.5625	0.119231	1.095389	0.00918	0.013818795
Fortune sacco	2013	0.112619	0.135526	143.6875	0.120652	1.097235	0.009193	0.013914773
Fortune sacco	2014	0.112674	0.135998	144.5455	0.120652	1.097951	0.009563	0.013953271
Fortune sacco	2015	0.113299	0.136512	144.5455	0.122511	1.100265	0.009583	0.014189728
Fortune sacco	2016	0.113469	0.136784	145.0667	0.123394	1.102095	0.009789	0.014284374
Kenversity	2012	0.115903	0.136841	145.1667	0.123394	1.102703	0.009834	0.01444452

Kenversity	2013	0.117643	0.137067	145.6224	0.124177	1.102703	0.009846	0.014528139
Kenversity	2014	0.117743	0.137659	145.6224	0.124177	1.103575	0.009976	0.014709538
Kenversity	2015	0.118301	0.137773	145.8	0.124888	1.105219	0.010152	0.014791758
Kenversity	2016	0.119241	0.137861	145.8	0.124888	1.105219	0.010233	0.014954452
KMFRI	2012	0.119273	0.138001	145.875	0.125466	1.107179	0.010268	0.015094882
KMFRI	2013	0.120651	0.138288	146.8125	0.126604	1.108689	0.010279	0.015094882
KMFRI	2014	0.121236	0.138743	147.75	0.126609	1.10872	0.010304	0.015096215
KMFRI	2015	0.121881	0.138907	148.125	0.127318	1.109234	0.010427	0.015266968
KMFRI	2016	0.121932	0.139438	148.3333	0.128188	1.110355	0.010597	0.015266968
Jitegemee	2012	0.122619	0.14	149.625	0.128338	1.110757	0.010756	0.015302431
Jitegemee	2013	0.122619	0.140712	150.3228	0.129579	1.110798	0.010779	0.015426064
Jitegemee	2014	0.123819	0.141015	150.6932	0.129579	1.11539	0.010811	0.015641173
Jitegemee	2015	0.123819	0.14	150.9259	0.129579	1.115642	0.011007	0.015828321
Jitegemee	2016	0.125011	0.141795	151.7333	0.129579	1.116383	0.011074	0.015838083
Imarisha	2012	0.126088	0.142109	151.7857	0.129579	1.116824	0.011087	0.016123819
Imarisha	2013	0.127168	0.142306	153.0833	0.129579	1.118717	0.01117	0.016161699
Imarisha	2014	0.12877	0.142539	154.2	0.134851	1.118765	0.011207	0.016161699
Imarisha	2015	0.129464	0.142929	155.125	0.136815	1.119327	0.011265	0.016171691
Imarisha	2016	0.129923	0.142929	155.3	0.137219	1.120429	0.011339	0.016171691
Mudete tea	2012	0.130529	0.14	156.4659	0.138605	1.122663	0.011453	0.016309319

Mudete tea	2013	0.131112	0.144058	156.4659	0.139202	1.123383	0.011512	0.016472385
Mudete tea	2014	0.133259	0.144206	156.6765	0.139924	1.123383	0.011573	0.016567363
Mudete tea	2015	0.133763	0.14	159	0.139936	1.124327	0.011741	0.016567363
Mudete tea	2016	0.136267	0.14	159.5429	0.140553	1.12467	0.011797	0.017077515
Murata	2012	0.137236	0.144573	160.1111	0.140956	1.125798	0.011905	0.017077515
Murata	2013	0.137578	0.15	160.2667	0.140956	1.126271	0.01201	0.017728402
Murata	2014	0.137883	0.145484	161.3621	0.147215	1.126393	0.012101	0.017928351
Murata	2015	0.139164	0.145484	161.5	0.148412	1.126721	0.012217	0.018155851
Murata	2016	0.139164	0.146152	161.5385	0.150928	1.126981	0.01222	0.018173391
Kipsigis6Dis	2012	0.139285	0.15	161.873	0.151292	1.127409	0.012259	0.018194223
Kipsigis6Dis	2013	0.139285	0.146498	161.873	0.154895	1.127931	0.012286	0.018786362
Kipsigis6Dis	2014	0.139614	0.147199	162.4762	0.155176	1.129655	0.012398	0.019116331
Kipsigis6Dis	2015	0.139919	0.147202	163.75	0.155176	1.129834	0.012732	0.019161163
Kipsigis6Dis	2016	0.141155	0.147233	164.2927	0.155184	1.130433	0.012751	0.019269038
County coop	2012	0.141904	0.15	166.5	0.156119	1.130433	0.012768	0.019832715
County coop	2013	0.142585	0.148651	166.7083	0.157151	1.1314	0.012882	0.020034223
County coop	2014	0.14364	0.148874	167.5333	0.157151	1.132753	0.013114	0.020089723
County coop	2015	0.14364	0.149187	167.6111	0.15785	1.132856	0.013255	0.02033869
County coop	2016	0.145591	0.149436	167.9677	0.162961	1.133329	0.013263	0.020339546
Wareng teachers	2012	0.146107	0.149788	168.125	0.163842	1.139495	0.013417	0.020744155

	Year							
Wareng teachers	2013	0.146805	0.149998	168.4444	0.174332	1.139707	0.013482	0.021029589
Wareng teachers	2014	0.147295	0.150267	172.5	0.175937	1.140161	0.013484	0.021330244
Wareng teachers	2015	0.147484	0.150359	174.4	0.176195	1.141059	0.013645	0.021793407
Wareng teachers	2016	0.149593	0.150528	175.6667	0.176195	1.142872	0.013688	0.021861211
Dumisha	2012	0.15	0.150608	175.9444	0.177972	1.145696	0.013749	0.021885715
Dumisha	2013	0.150262	0.150987	175.9444	0.178924	1.147544	0.01375	0.021928635
Dumisha	2014	0.150618	0.15142	177.1304	0.181465	1.149323	0.013761	0.02212009
Dumisha	2015	0.150968	0.15	178.2258	0.181465	1.150896	0.013829	0.022196572
Dumisha	2016	0.151302	0.151504	178.2258	0.182364	1.153747	0.013846	0.02224765
Mwingi mwalimu	2012	0.151388	0.152088	178.8	0.184965	1.156509	0.01387	0.022421793
Mwingi mwalimu	2013	0.152501	0.15216	178.803	0.185127	1.158955	0.013926	0.022560008
Mwingi mwalimu	2014	0.153425	0.152169	178.803	0.186707	1.159936	0.013934	0.023047959
Mwingi mwalimu	2015	0.153499	0.152201	178.8095	0.187569	1.161632	0.01397	0.023085309
Mwingi mwalimu	2016	0.153612	0.152201	180.1429	0.189022	1.162149	0.014089	0.023386491
Tembo sacco	2012	0.153612	0.15	181.4667	0.189022	1.163547	0.01416	0.023662043
Tembo sacco	2013	0.153819	0.152945	181.5385	0.189927	1.164839	0.014374	0.023756392
Tembo sacco	2014	0.153864	0.153126	181.5385	0.189927	1.166535	0.014439	0.023990968
Tembo sacco	2015	0.154662	0.153922	182.2135	0.190754	1.166535	0.014464	0.024060353
Tembo sacco	2016	0.155138	0.154359	182.2135	0.193426	1.167804	0.014488	0.024584358
Hazina	2012	0.155634	0.154361	183	0.194114	1.168156	0.014528	0.024810985

Hazina	2013	0.156156	0.154375	183	0.200302	1.168156	0.014665	0.024911757
Hazina	2014	0.15846	0.154458	184.4521	0.200439	1.172471	0.014676	0.024911757
Hazina	2015	0.159466	0.15	185.3625	0.201845	1.172738	0.014679	0.03
Hazina	2016	0.159466	0.154911	186.5652	0.201871	1.172738	0.014762	0.02543102
Baraka	2012	0.160958	0.155119	192	0.202461	1.176648	0.014762	0.025508955
Baraka	2013	0.161131	0.155198	193.6	0.203842	1.177674	0.014788	0.02581698
Baraka	2014	0.161754	0.155198	193.6364	0.203888	1.178276	0.014832	0.026045106
Baraka	2015	0.161788	0.16	194.1667	0.204237	1.178276	0.01496	0.026199189
Baraka	2016	0.16	0.155552	196	0.204481	1.178395	0.014986	0.026272629
Ardhi	2012	0.16492	0.155589	200.0952	0.206256	1.179119	0.015183	0.026310767
Ardhi	2013	0.165448	0.155589	200.0952	0.206287	1.179174	0.015587	0.026339601
Ardhi	2014	0.165533	0.16	201.1111	0.207795	1.179942	0.0156	0.026363222
Ardhi	2015	0.165533	0.156455	202.2727	0.207988	1.18123	0.01561	0.026408316
Ardhi	2016	0.165635	0.156534	205.8342	0.207993	1.18123	0.015788	0.026714574
Unaitas	2012	0.16673	0.156534	206.4167	0.208401	1.182194	0.016115	0.026826148
Unaitas	2013	0.166907	0.157214	207.1739	0.20898	1.182958	0.01614	0.026841752
Unaitas	2014	0.16711	0.158684	208.0353	0.20898	1.184291	0.016576	0.026845796
Unaitas	2015	0.17	0.158851	208.0353	0.209609	1.18432	0.016854	0.026871424
Unaitas	2016	0.167959	0.159055	208.1111	0.209609	1.18432	0.017204	0.026871424
Nyahururu umoja	2012	0.168048	0.159253	208.4737	0.212441	1.187575	0.017566	0.026876328

Nyahururu umoja	2013	0.168881	0.16	208.7619	0.215111	1.18972	0.017705	0.026933505
Nyahururu umoja	2014	0.170594	0.16	208.7619	0.216515	1.18972	0.01791	0.026978892
Nyahururu umoja	2015	0.171026	0.159939	211.5	0.218765	1.191836	0.01791	0.027012256
Nyahururu umoja	2016	0.17	0.16	212.871	0.221235	1.192081	0.018086	0.027037482
Elimu sacco	2012	0.172753	0.160201	215.3194	0.223266	1.192266	0.018228	0.027128851
Elimu sacco	2013	0.173203	11622.19	215.3194	0.225832	1.193016	0.018704	0.027140983
Elimu sacco	2014	0.174092	0.160324	215.3929	0.226916	1.193664	0.018987	0.027335458
Elimu sacco	2015	0.174277	0.160387	215.3929	0.228702	1.194865	0.019058	0.027356858
Elimu sacco	2016	0.174559	0.160465	216.8947	0.231996	1.196223	0.019058	0.027447154
Boresha	2012	0.175205	11483.68	217.15	0.232705	1.198247	0.01988	0.027639215
Boresha	2013	0.177068	0.160829	218.2239	0.234683	1.199305	0.01988	0.027782934
Boresha	2014	0.177596	0.160829	218.2239	0.238253	1.200638	0.020108	0.027830894
Boresha	2015	0.177596	0.160992	219.0714	0.239778	1.201303	0.020415	0.027935779
Boresha	2016	0.180892	0.161314	219.6667	0.241802	1.201457	0.020604	0.028007033
Wanaanga	2012	0.182226	0.161555	220.3158	0.242574	1.201992	0.020604	0.028470563
Wanaanga	2013	0.182412	0.16161	220.9412	0.242736	1.203134	0.020604	0.02870236
Wanaanga	2014	0.18	0.162267	222.6316	0.243012	1.203198	0.020604	0.029279055
Wanaanga	2015	0.185033	0.16	223.2593	0.243231	1.203399	0.020604	0.029300247
Wanaanga	2016	0.185834	0.16	223.2593	0.248869	1.206579	0.020604	0.029672629
Orient	2012	0.185834	0.163023	223.2593	0.252215	1.208439	0.02091	0.030065656

Orient	2013	0.186126	0.163239	223.2593	0.253349	1.209906	0.02152	0.030308305
Orient	2014	0.186706	0.163492	223.6111	0.257273	1.215167	0.021843	0.030660862
Orient	2015	0.186804	0.163575	223.6111	0.261451	1.215685	0.022772	0.031142844
Orient	2016	0.187687	0.163678	224.1163	0.267446	1.215947	0.022803	0.031333714
Biashara	2012	0.19	0.16	224.2642	0.267598	1.215947	0.022861	0.031335114
Biashara	2013	0.19	0.163983	225.3684	0.270467	1.217924	0.022983	0.031354011
Biashara	2014	0.189254	0.164318	226.4737	0.270675	1.21942	0.024401	0.031360078
Biashara	2015	0.19	0.16	227.1818	0.271313	1.220188	0.024504	0.031360078
Biashara	2016	0.189691	0.164552	227.1818	0.277955	1.220431	0.024749	0.031440391
United Nations	2012	0.189691	0.164638	227.5263	0.278096	1.220506	0.025004	0.031775414
United Nations	2013	0.18985	0.165269	227.9474	0.279373	1.223111	0.025644	0.031962049
United Nations	2014	0.190352	0.165711	228.1071	0.283543	1.225602	0.025901	0.032050173
United Nations	2015	0.190352	0.166281	231.5909	0.285753	1.227047	0.026063	0.032086498
United Nations	2016	0.191926	0.166348	231.7778	0.287828	1.231052	0.026151	0.032152101
Puan sacco	2012	0.192713	0.166542	231.7895	0.296712	1.232811	0.026555	0.032203664
Puan sacco	2013	0.195893	0.166737	232	0.297962	1.232833	0.027065	0.032529407
Puan sacco	2014	0.200721	0.166737	232.4444	0.300705	1.23373	0.02735	0.032704024
Puan sacco	2015	0.20	0.166772	232.5	0.304637	1.234097	0.028433	0.032824882
Puan sacco	2016	0.20366	0.166821	232.84	0.307806	1.234097	0.028554	0.032917569
Nyambene arimi	2012	0.205198	0.166879	233.6133	0.308129	1.234339	0.029002	0.033598193

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Nyambene arimi	2013	0.205856	0.167137	234.7368	0.310897	1.234883	0.029985	0.03
Nyambene arimi	2014	0.206329	0.167834	235.0513	0.313875	1.23751	0.031597	0.03
Nyambene arimi	2015	0.206742	0.168168	235.8889	0.313998	1.243617	0.031967	0.03
Nyambene arimi	2016	0.207196	0.168489	239.0323	0.314967	1.244482	0.03214	0.03
Centenary sacco	2012	0.208344	0.168871	239.6061	0.319536	1.247768	0.033068	0.034025097
Centenary sacco	2013	0.208915	0.168929	240.0938	0.321623	1.248137	0.03325	0.03409417
Centenary sacco	2014	0.208915	0.169671	241.0909	0.322533	1.248137	0.03346	0.03431942
Centenary sacco	2015	0.209146	0.169714	244.58	0.3257	1.250684	0.034626	0.03446748
Centenary sacco	2016	0.209872	0.169875	245.4545	0.3257	1.251134	0.036047	0.034539256
Capital savings	2012	0.212545	0.17015	245.875	0.32662	1.252608	0.037012	0.034971805
Capital savings	2013	0.212674	0.170487	245.94	0.328358	1.261346	0.037259	0.04
Capital savings	2014	0.212953	0.170849	246.3333	0.331589	1.263174	0.038104	0.04
Capital savings	2015	0.216109	9324.003	246.8333	0.333009	1.270121	0.038283	0.035425981
Capital savings	2016	0.216716	0.171188	247.8947	0.337311	1.272458	0.038699	0.035458517
Ntiminyakiru	2012	0.218342	0.171218	250.7313	0.338685	1.277451	0.040686	0.035800925
Ntiminyakiru	2013	0.219205	0.172016	250.7313	0.339427	1.278077	0.041158	0.035800925
Ntiminyakiru	2014	0.220722	0.172115	255.8621	0.339427	1.279423	0.044127	0.036000119
Ntiminyakiru	2015	0.223931	0.172377	256.8939	0.339427	1.280037	0.048775	0.036129755
Ntiminyakiru	2016	0.229758	8774.433	259.3939	0.343731	1.280746	0.052208	0.036129755
Chai sacco	2012	0.231048	0.172879	259.625	0.343731	1.28412	0.058633	0.036337677

	Year							
Chai sacco	2013	0.233327	0.17312	261.6579	0.344352	1.294773	0.060712	0.036952493
Chai sacco	2014	0.233873	0.173831	261.9057	0.345197	1.299108	0.061114	0.037006563
Chai sacco	2015	0.235082	0.173986	261.9057	0.347751	1.299304	0.061369	0.03725629
Chai sacco	2016	0.235082	0.174063	263.2093	0.347751	1.300821	0.062439	0.03725629
Chuna sacco	2012	0.235266	0.174139	264.3472	0.348654	1.307329	0.063369	0.037560452
Chuna sacco	2013	0.237543	0.17414	264.3472	0.349803	1.307329	0.063523	0.03798012
Chuna sacco	2014	0.239203	0.174153	266.2083	0.352786	1.318125	0.065367	0.038094819
Chuna sacco	2015	0.240769	0.174427	267	0.35324	1.319404	0.06597	0.038708421
Chuna sacco	2016	0.241935	0.174439	267.3898	0.354965	1.332779	0.068334	0.038708421
Baringo teachers	2012	0.242006	0.174832	267.3898	0.355039	1.333	0.072636	0.039015004
Baringo teachers	2013	0.248338	0.175071	270.0286	0.355039	1.333948	0.078891	0.039091246
Baringo teachers	2014	0.248934	0.176034	271.625	0.370397	1.334159	0.094932	0.039984069
Baringo teachers	2015	0.249688	0.176069	275.8788	0.3722	1.33615	0.1056	0.039984069
Baringo teachers	2016	0.249813	0.176533	277.3429	0.374205	1.337253	0.105872	0.040039672
Magadi savings	2012	0.252198	0.176792	280.8	0.376124	1.344197	0.106319	0.040477954
Magadi savings	2013	0.252566	0.18	281.7143	0.376389	1.348833	0.106709	0.040550512
Magadi savings	2014	0.25	0.177391	282.3333	0.37658	1.355571	0.108945	0.041821875
Magadi savings	2015	0.255784	0.177729	284.6571	0.382035	1.359335	0.111297	0.041821875
Magadi savings	2016	0.256049	0.17799	287.6	0.382459	1.372996	0.118442	0.043763973
Stima sacco	2012	0.256622	0.178008	290.9286	0.391359	1.37763	0.137251	0.044434266

Stima sacco	2013	0.257386	0.17862	301.8333	0.394755	1.389041	0.1389	0.044577364
Stima sacco	2014	0.257957	0.179069	302.0976	0.399153	1.389041	0.140691	0.044577364
Stima sacco	2015	0.257957	0.18	304.3063	0.403899	1.389049	0.145622	0.045969202
Stima sacco	2016	0.258618	0.180557	305.0625	0.406259	1.392487	0.14642	0.046952588
Camoco sacco	2012	0.261766	0.184579	307.4865	0.406259	1.394025	0.148272	0.05
Camoco sacco	2013	0.262303	0.18	312.925	0.414478	1.394025	0.153655	0.049711247
Camoco sacco	2014	0.263465	0.18	314.4119	0.4163	1.395396	0.156998	0.052786783
Camoco sacco	2015	0.263909	0.185607	315.7083	0.416532	1.395396	0.161106	0.053028075
Camoco sacco	2016	0.266176	7573.949	320.5714	0.426398	1.399863	0.167099	0.05
Bandari savings	2012	0.269194	0.188716	328.9147	0.434409	1.401112	0.171589	0.05
Bandari savings	2013	0.270337	0.190346	331.2292	0.444334	1.402656	0.187837	0.055649306
Bandari savings	2014	0.271532	0.195062	335.6279	0.446633	1.409603	0.191633	0.055736856
Bandari savings	2015	0.272492	0.20	348.7333	0.457109	1.420031	0.194541	0.056577931
Bandari savings	2016	0.274301	0.2	354.2941	0.457573	1.426379	0.198231	0.058512854
Ainabkoi rural	2012	0.280083	0.2	361.716	0.461366	1.430019	0.202261	0.058951594
Ainabkoi rural	2013	0.280624	0.2	365.3529	0.464249	1.441913	0.203599	0.059573233
Ainabkoi rural	2014	0.280719	0.20	377.9455	0.464707	1.455996	0.203726	0.06
Ainabkoi rural	2015	0.280719	0.20	381.8533	0.465462	1.460488	0.204702	0.061028053
Ainabkoi rural	2016	0.28186	0.20	382.25	0.46619	1.465111	0.205065	0.06
Dimkes	2012	0.282062	0.20	387.48	0.467566	1.467191	0.205258	0.061763107

Dimkes	2013	0.28484	0.20	390.4658	0.47	1.49417	0.207747	0.061763107
Dimkes	2014	0.286184	0.21	399.5	0.47	1.502691	0.209257	0.063178804
Dimkes	2015	0.287067	0.21	401.1633	0.472387	1.511118	0.209369	0.06333718
Dimkes	2016	0.288386	0.21048	401.1633	0.473643	1.511824	0.21504	0.063569018
Kenya achievers	2012	0.29579	0.21	406.5854	0.485014	1.516801	0.215207	0.064780747
Kenya achievers	2013	0.298924	0.21	406.5854	0.492117	1.524764	0.236028	0.066701507
Kenya achievers	2014	0.303574	0.224998	408.122	0.495688	1.53	0.237842	0.066818592
Kenya achievers	2015	0.311461	0.234518	408.122	0.501597	1.532202	0.241717	0.068583289
Kenya achievers	2016	0.324849	0.236186	410.0494	0.50318	1.533521	0.243645	0.069574166
Afya sacco	2012	0.325601	0.236186	410.0494	0.504291	1.536717	0.246224	0.074748436
Afya sacco	2013	0.328382	0.23857	410.2222	0.508903	1.536717	0.24901	0.075013
Afya sacco	2014	0.329153	0.238953	411.8667	0.510441	1.537519	0.249636	0.08
Afya sacco	2015	0.331996	0.239971	413.0667	0.521728	1.555093	0.250535	0.08
Afya sacco	2016	0.332315	0.24357	419.95	0.543132	1.562865	0.251025	0.09347463
Sheria sacco	2012	0.338238	0.253318	426.5	0.551757	1.56557	0.256189	0.093505003
Sheria sacco	2013	0.339472	0.27	433	0.564695	1.572554	0.266841	0.10
Sheria sacco	2014	0.347906	0.27	433.3571	0.570793	1.575562	0.286873	0.102385102
Sheria sacco	2015	0.349602	0.273849	436.7143	0.574212	1.576965	0.288463	0.110541734
Sheria sacco	2016	0.356952	0.282858	437.4923	0.577919	1.577388	0.292188	0.126353827
Asili sacco	2012	0.360149	0.28	440.8	0.600733	1.580039	0.294456	0.128073643

Asili sacco	2013	0.364092	0.28	441.6667	0.601428	1.580039	0.299251	0.13056881
Asili sacco	2014	0.376877	0.289905	442.35	0.601798	1.583476	0.30164	0.15218593
Asili sacco	2015	0.377902	0.295791	445.7451	0.629814	1.589689	0.325505	0.166749078
Asili sacco	2016	0.378424	0.303366	452	0.662817	1.605483	0.326524	0.17
Nafaka sacco	2012	0.378953	0.303366	457.3485	0.687187	1.605483	0.327345	0.182927083
Nafaka sacco	2013	0.381136	0.31	459.1667	0.700105	1.615859	0.328376	0.225009001
Nafaka sacco	2014	0.426618	0.32	461.1667	0.71	1.668325	0.328561	0.23
Nafaka sacco	2015	0.427622	0.33	461.8571	0.71	1.6964	0.328873	0.265556851
Nafaka sacco	2016	0.575085	0.33	470.087	0.729016	1.703363	0.331816	0.284688214
Shoppers sacco	2012	0.575085	0.34	473.2806	0.736231	1.730703	0.333379	0.290149423
Shoppers sacco	2013	0.603707	0.35	488.0909	0.73691	1.739907	0.338079	0.290678156
Shoppers sacco	2014	0.695764	0.35	489.5077	0.773793	1.761373	0.338201	0.299266131
Shoppers sacco	2015	0.695764	2896.099	498.1573	0.792624	1.804126	0.342053	0.311430031
Shoppers sacco	2016	0.741166	2720.037	498.1573	0.821911	1.856189	0.343194	0.34
Kenya bankers	2012	0.842668	2387.654	508.4189	0.832332	1.905046	0.345022	0.379034104
Kenya bankers	2013	0.894111	0.404601	509.561	0.837231	1.907334	0.354302	0.379286382
Kenya bankers	2014	0.901113	0.415978	510.1256	0.84889	1.910678	0.359014	0.387029668
Kenya bankers	2015	1.023159	0.43	510.9296	0.860437	1.938713	0.360798	0.396488664
Kenya bankers	2016	1.023159	0.43	511.4545	0.860437	1.938713	0.371209	0.464001083
Ukristo na ufanisi	2012	1.034665	1944.591	529.6863	0.8656	1.968749	0.371382	0.466610573

Ukristo na ufanisi	2013	1.064431	1891.15	541.7541	0.86865	1.971254	0.38315	0.51
Ukristo na ufanisi	2014	1.11776	0.482021	545.0127	0.8831	2.013592	0.404927	0.55
Ukristo na ufanisi	2015	1.126588	0.482021	545.8182	0.923802	2.15	0.415266	0.57
Ukristo na ufanisi	2016	1.22139	0.49	551.6667	0.923802	2.259423	0.424481	0.570505153
Safaricom savings	2012	1.245655	0.49	559.1262	0.93	2.389687	0.452099	0.576373301
Safaricom savings	2013	1.258662	0.52	577.3889	0.93	2.389687	0.452714	0.582325367
Safaricom savings	2014	1.294543	0.52	580.9565	0.930591	2.392311	0.632767	0.59
Safaricom savings	2015	1.387943	0.535329	593.2716	0.930591	2.538426	0.70084	0.64796935
Safaricom savings	2016	1.479965	0.791411	594.7778	0.945725	2.770935	0.745225	0.660275833
Wakenya pamoja	2012	1.488424	0.791411	597.9306	0.945725	2.89	0.795863	0.674088112
Wakenya pamoja	2013	1.502589	0.89	623.2759	0.948907	2.975069	0.863135	0.681033718
Wakenya pamoja	2014	1.620866	0.971878	623.5	0.948907	3.213673	0.890388	0.68808558
Wakenya pamoja	2015	1.71697	1.15722	638.9739	0.952404	3.87	0.944328	0.694206435
Wakenya pamoja	2016	1.731781	1.161926	640.1667	0.962509	4.691018	0.955372	0.713879199
Agro chemicals	2012	1.803326	1.203566	659.6981	0.972891	6.004977	0.971827	0.71
Agro chemicals	2013	1.844989	1.246885	660.6667	0.97569	7.167089	1.011094	0.72079499
Agro chemicals	2014	1.957287	1.324263	667.6104	0.98	7.652519	1.052698	0.747122617
Agro chemicals	2015	1.988	1.331843	669.3448	0.98	8.022661	1.181356	0.783197571
Agro chemicals	2016	1.988	1.53826	672.1333	1.029131	8.625221	1.191944	0.818982402
Siragi sacco	2012	2.265497	1.562548	675.9545	1.061215	10.07384	1.217316	0.89

Siragi sacco	2013	2.39759	1.573994	677.75	1.07	11.03363	1.228882	0.959289384
Siragi sacco	2014	2.707258	1.573994	680.7455	1.07	11.18486	6.197201	1.581670156
Siragi sacco	2015	3.328814	1.690463	708.6333	1.129586	11.40547	6.197201	1.758361277
Siragi sacco	2016	11.45771	1.742065	727.5982	1.200644	11.72	12.71655	1.866669845
2NK Sacco	2012	11.53182	1.749175	735.6724	1.212851	12.21734	12.72314	1.993605977
2NK Sacco	2013	11.56654	1.792335	744.7723	1.2838	12.58181	12.76021	2.002414318
2NK Sacco	2014	11.59982	1.80	802	1.338401	13.8935	12.77073	2.079556038
2NK Sacco	2015	11.72027	1.803051	804.6667	1.625282	19.47334	14.06479	2.356669928
2NK Sacco	2016	14.80989	1.90	820.2857	1.682486	487.5438	14.06737	2.458731223
Dhabiti sacco	2012	14.80989	2.08	827.6667	1.778769	25.45995	15.06072	18.65210812
Dhabiti sacco	2013	30.83733	2.41	930.7536	1.978912	280.29	15.08184	18.65210812
Dhabiti sacco	2014	30.83733	2.41	974.359	2.312621	421.3224	15.82858	27.53984005
Dhabiti sacco	2015	30.90709	2.560005	1089.6	2.617479	318.93	15.83172	27.53984005
Dhabiti sacco	2016	30.90709	2.62	1244.242	2.62307	474.3459	16.02901	28.48610058
Ntunze savings	2012	32.30825	2.68	1247.266	2.66208	432.96	16.03128	28.48610058
Ntunze savings	2013	32.30825	2.724903	1299.839	5.960534	218.0742	16.39866	31.37675295
Ntunze savings	2014	84.4203	2.806354	1610.468	12.16902	606.42	16.40842	31.37675295
Ntunze savings	2015	84.4203	2.887149	1976.5	21.65434	615.01	17.455	35.40357841
Ntunze savings	2016	216.7076	3.203936	3621	984.862	3.676657	17.45901	35.40357841