

**EFFECT OF SELECTED FIRM CHARACTERISTICS ON MANAGEMENT
EFFICIENCY OF DEPOSIT TAKING SACCOS IN KENYA**

By

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MASTER OF SCIENCE IN COMMERCE (FINANCE AND ACCOUNTING)

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**A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENT FOR THE AWARD OF MASTER OF SCIENCE IN COMMERCE
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UNIVERSITY**

NOVEMBER 2024

DECLARATION

I declare that this dissertation is my original work and has not been previously published or submitted elsewhere for award of a degree. I also declare that this contains no material written or published by other people except where due reference is made and author duly acknowledged.

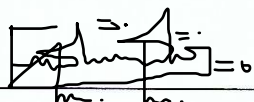
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Dr. Fred Sporta

ABSTRACT

Deposit Taking Savings credit Cooperative Societies (DT-SACCOs) are financial institutions which developed from cooperative movements as member's needs are charged over the years. DT-SACCOs were expected to bridge the gap of financial service provision to the majority of unbanked individuals and small business entities to the extent that their growth and development in Kenya. DT SACCOs are saddled with management inefficiency, consequently poor financial performance. The study assessed the effect of firm specific characteristics measured by Asset quality, liquidity, and capital adequacy to management efficiency of DT Sacco's. The principle guiding theories include liquidity preference theory, liquidity shift ability theory, the moral hazard theory, the agency theory and the credit default theory. The research targeted the population of all compliant DT Sacco's in the period 2017 to 2021. Research data was secondary data derived from DT Sacco's financial statement. Descriptive design was used for data analysis; the study was aided by Ms. Excel and STATA software to analyze the data. The study found that the study variables asset quality, liquidity and capital adequacy affected management efficiency. With reference to the research findings and interpretation above the study concluded that firm characteristics affect management efficiency of DT- SACCOs. Study variables; asset quality, liquidity and capital adequacy present a good measure of firm characteristics in DT – SACCOs in Kenya. In addition, the study concludes management of deposit taking SACCO's in Kenya were not solely responsible for inefficiency but other factors contributed to efficiency. The study recommends that DT-SACCO's should effectively manage borrowers to ensure that they have adequate returns for the capital invested. To achieve this goal a prudent credit risk management policy must be put in place to provide checks and balances on management decisions which affect interest income earned, consequently, affecting asset quality. Members should be informed on the impact of defaulting on loans borrowed because it ultimately affects earnings on their capital that is if they pay their loan installments in time. The regulatory authority should intensify monitoring of DT- SACCO's firm characteristics which caused management inefficiency. This study suggests that future research be done on matters affecting management efficiency since efficiency is an important aspect of stability in Deposit taking Saccos. This study recommends that further study be done with several more years that is a longer period; for example, ten years and the study be done on the entire population. In addition, the study suggests other measures of management efficiency be applied.

Keywords: DT- SACCOs, SASRA, Management efficiency and Asset quality

TABLE OF CONTENTS

ACKNOWLEDGEMENT	iii
ABBREVIATION	vii
LIST OF TABLES	ix
CHAPTER ONE	10
1.1 Background of the study	10
1.1.1 Management Efficiency	12
1.1.2 Firm Characteristics	15
1.2 Statement of the Problem	17
1.3 Research Objectives	19
1.3.1 General Objectives	19
1.4 Research Hypothesis	20
1.5 Significance of the Study	20
1.5.1 Regulators	20
1.5.2 DT- SACCOs	21
1.5.3 Investors, Sacco Members and Customers	21
1.5.4 Scholars	21
1.5.5 Policy Makers:	21
1.6 Scope of the Study	21
2.2 Theoretical Review	23
2.2.1 The Liquidity Preference Theory	23
2.2.2 The Moral hazard theory	25
2.2.3 Agency Theory	25
2.2.4 The Credit Default Theory	27
2.2.5 Theory of information Asymmetry	28
2.3 Empirical Literature Review	31
2.3.2 Liquidity and Management efficiency	34
2.3.3 Capital adequacy and Management efficiency	38
2.4 Conceptual frame work	41
CHAPTER THREE	43
3.1 Introduction	43
3.4 Data Collection	44
3.5 Data Processing Analysis	44

3.6 Panel Data	44
3.6.1 Pooled Ordinary Least Squares (OLS)	45
3.6.2 Fixed effect model (FEM)	45
3.6.3 Random effect model (REM)	46
3.7 Model Specification Tests (MST)	46
3.7.1 Unit Root	47
3.7.2 Normality	47
3.7.3 Heteroscedasticity	47
3.7.4 Serial Correlation	48
CHAPTER FOUR	50
DATA ANALYSIS, FINDINGS AND DISCUSSION	50
4.1 Introduction	50
4.2 Response rate	51
4.2 Exploratory Data Analysis	52
Figure 4.2	53
4.3 Descriptive Analysis Results	53
4.4 Diagnostic Tests	55
4.4.1 Normality Tests	55
Table 4.3: Shapiro-Wilk W test for normal data	56
Model Dependent variable F-value P-Value	58
4.4.5 Pooled OLS Model or Random Effect model	58
CHAPTER FIVE	61
SUMMARY CONCLUSION AND RECOMMENDATION	61
5.1 Introduction	61
5.2 Summary	61
5.3 Conclusion	62
5.4 Recommendations	62
REFERENCES	63

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ABBREVIATION

CBK	Central Bank of Kenya
CMA	Capital Market Authority
DT-SACCOs	Deposit taking SACCOs
FEM	Fixed Effect Model
GPM	Gross Profit Margin
LSR	Loan Serviceability Ratio
MA	Mergers and Acquisitions
MFI	Microfinance Institutions
MST	Model Specification Tests
NPA	Non-Performing Assets
NPL	Non-Performing Loans
NPM	Net Profit Margin
NSE	Nairobi Securities Exchange
ME	Management efficiency
OLS	Ordinary Least Squares
REM	Random Effects Model
SACCO	Saving and Credit Cooperative Society
SASRA	Sacco Society Regulatory Authority

DEFINITION OF KEY TERMS

Asset quality refers to the content and value of assets held by a financial institution, mainly loans. Loan portfolio forms a major parameter of determination of the total value of the organization's assets Sharma (2015). Asset quality is the status of the loan book in terms of the ability of the borrower to full pay amounts borrowed.

Firm characteristics are the macroeconomic factors that give a firm a distinct edge over other firms in an industry; they are drawn from the firm's strengths, weaknesses, opportunity and threats. These factors are financial and non-financial in other words the intrinsic identity of a firm Kaguri, (2013).

Liquidity refers to comparison of assets and liability to derive the proportion of liquid assets available to meet short term financial obligation

Capital adequacy refers to availability of capital to meet its investment obligation and contingencies. Adequate capital is necessary to ensure that a firm has enough capital to finance its obligation. It is measured by the ratio of capital against current liabilities and risk weighted capital Safdar et al., (2024)

Non-Performing assets refers to money lent to customers by financial institutions which does turn out to be dormant, that is the borrower does not make payment as per the agreement therefore interest on the amount borrowed is not realized. The threshold for non-performing loan is set at ninety days of non-payment when a loan repayment installment falls due, for example, loan repayment default is considered to have occurred when the borrower has not paid the agreed installment for a period of over ninety days from the due date. Loan that have reached their maturity date but they are still outstanding Sharifi et al., (2016).

LIST OF FIGURES

Figure 2.1 Conceptual Framework

Figure 4.1 Exploratory Data Analysis

Figure 4.2 Data analysis

LIST OF TABLES

Table 2.1 Operationalization of Variables

Table 3.1 Panel Data Diagnostic and Model Specification Tests

Table 4.1 Descriptive analysis

Table 4.2 Correlation Analysis

Table 4.3 Shapiro-Wilk W test for normal data

Table 4.4 Multicollinearity Test

Table 4.5 Stationarity test for Management efficiency

Table 4.6 Stationarity test for Capital adequacy

Table 4.7 Stationarity test for Asset quality

Table 4.8 Stationarity test for liquidity

Table 4.9 Serial correlation Test

Table 4.10 Results for Breusch-Pagan LM test

Table 4.11 Hausman test

Table 4.12 Regression Results output of fixed effect model

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

Savings Credit Cooperatives are financial institutions which developed from Cooperative society's structure. Cooperative societies are formal organizations which are formed to enable their members to conserve their resources to achieve mutual goals. Pioneer cooperative movements in Kenya were formed by farmers in the Dairy, Coffee and Tea sector to enable them pool their resources to acquire farm inputs, equipment and to facilitate marketing of their produce. The history of the Cooperative movement can be traced in the role of Robert Owen in the year 1844 whereby the formation of a Cooperative in Scotland happened and later replicated in other parts of the world targeting poverty-stricken members of the society as a poverty alleviation tool Mayo, (2017). The principles of co-operative are based on self-help, fairness, independence, members' participation in management, team spirit, voluntary and open membership. Participants of the 1995 International Congress in the general assembly of ICA unanimously adopted the cooperative movement statement of identity that states that the cooperative movement is founded on the values of self-help with responsibility, solidarity, democracy equity and equality further simplified as the founder's ethical tradition of honesty, social responsibility and caring for others WOCCU, (2012). The Sacco movement traces its roots to Germany in 1850 when the first credit union was established under the leadership of Frank Herman to make it easy for members to access financial services WOCCU, (2017). The African context dates back to 1959 when the first Sacco was registered in Ghana and the movement spread to other African countries with massive recruitment of members; subsequently, in 1965

formation of the Confederation of Cooperative Society Savings and Credit Association (ACCOSCA) was formed Jagongo, (2012).

The cooperative movement has evolved over the years from the initial saving and credit service provider to include other services in line with the advancing change in technology and expanded scope of operation to provide services similar to those provided by commercial banks, other than the distinctive front office service (FOSA); for example, ATM services, online banking, asset financing, insurance premium financing, fixed deposit accounts, this are services which are not available in non-deposit taking Saccos. Most banking and financial service requirements of the Cooperative movement are now being provided by DT Sacco's SASRA, (2018). The expanded growth of banking services by cooperative has been witnessed all over the world with Saccos operating as Credit Unions in Europe and America in Asia the Sacco's are operate under Cooperative banks WOCCU, (2014) The formation of DT Sacco's is based on common interest of members and their formation follows a pattern that reflects unique common bond that links members to a certain industry, sector, field or profession, for example, civil servant or government institution based, agricultural the farmers based, private sector mainly based in the business community in commodity markets and transport sector. And Sacco's are formed by communities, for example in the rural areas. The members relate to each other because of the background of origin the common linkages upon which formation Sacco's will follow create a bond of commitment. The diverse range of fields of membership can be traced even when they open branches SASRA (2021).

DT Sacco's are financial intermediaries consolidating member's investments and savings in form of shares and deposit and offering them to borrowers in form of loans; therefore, DT Sacco's play significant role in providing financial service to clusters of individuals who may not

have access to banking services provided by microfinance institution or commercial banks. The link created by the Cooperative movement has had a positive impact on economic development to the extent that Governments and International development agencies now consider the movement a key channel and a partner in strategic planning and implementation of development goals. The United Nation Development Program (UNDP) millennium development goal considered the cooperative movement as a partner to lift individuals from extreme poverty; the Government of Kenya considered the cooperative movement as a key driver in realizing vision 2030. Internationally the cooperative movement has had a tremendous success history but with a common problem of miss management and noncompliance with operation regulations Mwendwa et al., (2014).

1.1.1 Management Efficiency

In Kenya DT SACCOs are cooperative societies registered under the Sacco Societies Act 2008 which borrows from the Cooperative Societies Act and subsequent notices as given by the Cabinet Secretary in respect of regulation and supervision of co-operatives. The purpose of the Act is to guide the formation of DT SACCOs and place responsibility on their officials. The initial setup of SACCOs was to mobilize savings from members who bought shares and advance the same to members as loans; they were simply savings and credit cooperatives. Development in the cooperative movement have witnessed massive growth in membership and savings; consequently, other financial services were incorporated in list of services provided by SACCOs through the establishment of Deposit Taking SACCOs (DT-SACCOs) which provide banking services similar to those of commercial banks Commercial Banks. The traditional Savings and Credit Cooperatives were renamed None Deposit Taking SACCOs (Non-DT- SACCOs) with a significant number of them changing to DT- SACCOs every year. The global trend has

witnessed the transformation towards DT- SACCOs, the establishment of the Sacco Societies Regulatory Authority (SASRA) and implementation of prudential regulation SASRA, (2017).

There have been major changes as DT Sacco's find their space in the financial industry and much is expected as the sector expands and full implementation of the 2010 constitution which has cooperatives as devolved functions which transfer them from the national government to county governments the road map to devolution is still under discussion. One of the major problems facing the cooperative movement is the continuous failure of remittance of contribution to Sacco's by members through their employer in the private sector, government institution, for example, public universities, parastatals, county governments and civil service. The deductions made from the salaries or other incomes are paid to the Sacco's. This delay or failure affects the liquidity of DT Sacco's and hampers their efficiency and effectiveness as intermediaries. The contribution is in form of loan repayment or savings which greatly affect the cash flow and liquidity of the Sacco's, considering that the member has not meet the obligation, members continue to incur interest as NPLs pile up, and indeed led to the total collapse of some DT-SACCOs in the course of the year 2018. The statistics collected by the Authority for the period ending 30th September, 2018 showed that a total of Kshs 2.81 Billion was owed by various employer-institutions to just 50 DT-SACCOs. Out of these amounts, 79% thereof were deductions meant to defray the loans and other credit obligations advanced by the DT-SACCOs to their members implying that such loans and credit facilities are substantially in default; while the rest of the amount were meant to build the members BOSA deposits implying that such members may not qualify for credit facilities of equivalent sums from their respective SACCOs SASRA (2018)

The major concern by the management and supervisory authority is the impact of none remitted deductions in 2019 five key DT Sacco's with membership affiliated to government institutions of higher learning due to budget constraint, affecting their liquidity which hamper effective and efficient operation the situation has not improved even after the intervention by the government from the executive office of the President in November 11th 2019 through a directive that all deductions from staff salary be paid to respective Saccos in addition to SASRA directive to DT Sacco's management to follow up on the remittances the issue remain a unresolved throughout the period of study.

1.1.2 Management Efficiency

Management efficiency is defined as the ability to work harmoniously to realize the goals of the organization further broken down to; efficiency, effectiveness and efficacy in other words the state, capability, degree and competency of the management team to deliver and achieve the goal of an organization Ekambram et al., (2018). The history of economic efficiency dates back to the studies done by Koopmans and Debreu in 1951 and further advanced by Farrel in 1957 the scholars proposed a dual approach measure of efficiency the two components were allocation and technical efficiency. Allocative efficiency is about the management or firm's ability to apply optimally available resources; whereas technical efficiency which is the firm's ability to maximize returns for its resources, the two are ideal measures of economic efficiency Nguta et al., (2021).

As we advance technologically parameters of efficiency measurement have also expanded significantly from the basic; staff skills, expertise and level of experience in addition to the organization's operations, for example, technology efficiency and adequacy of resources to more advance measures that can detect in efficiency due to resource constraints, technology

disruptions, human error and staff laxity which affect management efficiency. Management efficiency of DT Sacco's is also affected by macro-economic factors; for example, business cycle, government or regulatory policies and labor dispute affecting the economy at large and in particular factors attributed the financial service sector generally the external factors are not given much attention since in most cases they are beyond the control DT Saccos members or the management team Barngetuny, (2021).

This study approached management efficiency from a microeconomic perspective which anchors an organization's success to proper allocation and utilization of its resources. The focus of the study was on deterrents of management's ability to apply their knowledge to achieve maximum return at the lowest cost without wastage. DT Saccos is considered efficient when it successfully transforms inputs into output of creditable value and vice versa even without considering how other Saccos have performed or the economy at large. Saccos maximization of profit explains management efficiency but evaluation of efficiency extends to conservation of resources in the long run. The assumption that DT Sacco's are designed to succeed is based on its foundation as an entity that operates within its own boundaries without interference to external business forces. DT Saccos are set to succeed at inception as outlined in their business model that meets most of the requirements of a viable business model. Commercial viability assessment (CVA) is the analysis carried out to determine the suitability of a business idea, the analysis looks into the following key factors to determine the success rate of a business idea upon implementation; financial stability, market demand, competition, operation efficiency and quality of the management team. The factors outlined above fits clear on expected success of DT Sacco's Bland et al., (2019). The study concentrated on the last two factors; quality of the management team and operation efficiency. Commercial viability of a business entity depends

on the ability of the management team to harness the resources provided, protect the assets and generate profits. Management efficiency is the yardstick that measures the utilization of resources provided in any commercial entity.

Management inefficiency sends a signal to the stakeholders in particular the management team and shareholders. The principal parameters for measuring management efficiency of financial institutions such as SACCOs, should revolve around managerial activities at all level from corporate governance at the board level where the management broad road map and corporate culture is determined followed by the member's general conference where the board resolutions are ratified down to the day to day running activities of the organization. Management efficiency will be traced from recruitment of members, mobilization of deposits, issuing loans, credit facilities include management of their total assets, total deposits, gross loans, allowance for loan losses and core capital management SASRA, (2019).

The history of management efficiency trickles from generations of transformation with reference to the Cadbury committee which was set up in 1991 that sought to solve the reason behind failure and success in firms in the same industry what are the reasons why some firms are vibrant and sustainable while others are ailing the underlying factor was system of management Pearce et al., (2011). There are mismanagement opportunities unique to every entity, for example in the cooperative movement member insufficient commitment to their oversight role, failure to attend meetings or actively participate while present further compounded by unfair elections that ensure retention of a certain creek of members at the management board, inadequate staff or lack

of professionalism which bleeds weak internal operational and management system Odera, (2012).

The Cooperative movement has experienced sudden failure; cooperatives collapsed the following year after reporting an impressive performance in the previous financial period. The supervising authority SASRA reports DT Sacco failure in a too close to call situation i.e., when the damage has already happened in an apparent situation where it's not clear if the authority has the ability to detect real time mismanagement issues or the management has learnt the loopholes in existing standards that present an opportunity to hind and hold the failure away from all stakeholders eyes, until the moment when the Sacco's operation grid to ahold and the disclosures are made in clever move of cover up similar to those of the Enron debacle. The leadership failure in DT Sacco's is characterized by an arrogant, over confident and excessive risk-taking management team which precipitates biased reporting and selective disclosure. Failure of businesses due to management inefficiency has a history of manager's acting smart from the collapse of Farrow Bank in 1920 to the 2008 global financial crises and the trend continues to date.

The government of Kenya in an effort to curb the perennial failure of Cooperatives proposed several control measures to solve the managerial inefficiencies that were identified as the main cause of Sacco failures this included; establishment of an internal system of management for example internal controls service delivery charter prudence management guidelines. And a well-defined management structure with created clear cut roles and mandate to execute their responsibility, consequently they will be held responsible for their performance result. The Ministry of Cooperative and other state departments worked on policy development, a process that brought forth working papers and circulars that were implemented gradually and

eventually acts of parliament were included to expand management guidelines and supervision. The enactment of the SASRA act crowned the DT Sacco's management supervision process which put the footprint of government supervision on management of DT Sacco's the regulatory authority mandate is to constantly ensure that DT Sacco's are efficiently managed SASRA act

1.1.3 Firm Characteristics

Firm characteristics are the macroeconomic factors that give a firm a distinct edge over other firms in an industry; they are drawn from the firm's strengths, weaknesses, opportunity and threats. These factors are financial and non-financial in other words the intrinsic identity of a firm Kaguri, (2013). The resources and objectives of a firm define its characteristics; therefore, the organization of a firm's resources and implementation of its objectives can be traced or are traceable as determinants of their management efficiency. Firm characteristics are the factors directly under the control of the management that include; profitability, asset structure, liquidity, growth, business risk and growth. Firm characteristics provide avenues that explain how a firm is operating, the development of financial institution rating system CAMELS is derived from the firm characteristics matrix it is used to evaluate performance of financial institutions. The CAMELS system rates the following six factors; capital adequacy, asset quality, management, liquidity earnings and sensitivity to market risk, the rate is on a scale of 1 to 5 in which one is rated as good performance and five as poor or the worst performance Nyabaga et al., (2020).

The work of financial institutions is to operate the financial service system as intermediators linking savers to borrowers. The intervention of an efficient management is required to ensure that savings are advanced to the most productive and efficient borrower and

ensure the highest interest is paid at same time preserving the resources to avoid non-performing loans. The outcome of the management may be either efficient or inefficient, efficiency will spur economic growth and stability whereas, inefficiency will result in depressed economic growth, losses and high cost of operation. The management of financial institution are consistently evaluated for efficiency since it's in their operation that gains or losses are made Ikapel et al., (2019)

Management decisions as represented in operation efficiency in the application of resources which is preceded by financing strategy that defines how capital is raised and invested to ensure maximum returns, in particular investment decisions to ensure diversification of investment portfolio Dang, (2011). This study will concentrate on the financial aspect of firm characteristics and their effect on management efficiency of deposit taking Saccos in Kenya. Empirical evidence on firm characteristics as determinants of management efficiency have been applied worldwide on studies on commercial banks, micro finance institutions with few studies on cooperative financial institutions. Some of the most applied firm characteristics linked to financial institutions are; leverage, profitability, capital adequacy, doubtful debts, firm size, liquidity and asset quality Meyer, (2013). The above mentioned characteristics are firm specific subject to internal force under the control of financial institution management they are measurable and the information which is drawn from the financial statements is readily available, quantifiable and verifiable Aora, (2014)

1.1.4 Firm characteristics and Management Efficiency

Management efficiency is the yardstick that measures the profitability of any commercial entity. Poor performance sends a signal to the stakeholders in particular the management team and

shareholders. Efficiency is simply defined as doing things right at the right time for the right purpose of achieving the objectives of the organization. Efficiency involves minimum utilization of available resources to achieve greater results. Efficiency is measured by productivity, customer satisfaction and business continuity. Badunenko et al. (2021).

The recent development in the cooperative movement has elevated DT Sacco's to standards of operation and service provision similar to those of Commercial banks; however, two key aspects distinguish this entity. The objective of DT Sacco's is to provide basic savings and credit service to its members at the least cost and in areas where commercial services are not available. Commercial banks are entities established to earn profits the owners are not the primary consumers of their services they are established to earn income to the owners; therefore, their main objective is to maximize shareholders return. The differences highlighted above are further encountered when selecting performance measurements. The model for commercial banks will fit in any other commercial entity performance measurement approach primarily return on assets and equity; whereas, the efficiency approach that fit's the cooperative movement is different, because efficiency of cooperatives looks into benefits of the members as owners and their pre-establishment objectives by utilizing the resources provided. Measures of efficiency go beyond resource allocation to economical and technical efficiency. The choice of efficiency measurements depends on nature of study more advance research apply Data envelope analysis (DEA) or the Free Disposal Hull (FDH) these measures are also referred to nonparametric frontier approaches they are also applied within a firm to evaluate branch efficiency due to the nature of its relativity approach Magali et al., (2014)

Several studies have done studies in the financial institution sector with great emphasis on commercial banks' firm characteristics effect on intermediary efficiency, financial performance and management efficiency. The studies have shed light to the importance of prudent management as stool of DT Sacco's stability. Good performance of DT Sacco's is associated with good characteristics in operation; for example, management of credit risk, asset quality, liquidity and capital adequacy Oigo, (2015). Commercial bank financial performance is determined by management efficiency in liquidity through prudence management of cash flow to ensure availability of working capital at all times Ongore et al., (2023). Management efficiency is essential in the management of loan portfolio to ensure asset quality is maintained within a relatively acceptable level of NPL. Loan delinquency carries the highest risk to a financial institution's survival. Management of capital, NPL's and liquidity is of great importance since it determines the firm's future in terms of development and growth in addition to ability to counter economic cycles and financial institutions turmoil and bank runs Dang (2011).

In the 2019 SASRA reported that DT Sacco's were reporting capital mobilization challenges they were not able mob up enough savings from their member in addition to low drive in capital uptake by members and external funding., consequently, there was delay in disbarment of loans to member. Management of the loan book was also below standard resulting in increase in NPL. The overall impact was decline in growth and financial performance SASRA, (2019). In conclusion firm's characteristic's asset quality; capital adequacy and liquidity have effect on management efficiency of DT- SACCO's in Kenya.

1.2 Statement of the Problem

The cooperative movement is considered as a key player in achieving the Vision 2030 under the pillar of financial development Cracknell, (2012). DT-SACCOs were the main focus of the 2nd medium term plan (MTP) under the vision 2030 as the most influential alternative financial service providers to Kenyans who could not access financial services from mainstream financial institutions. DT-SACCOs provide credit for local economies, mobilization, expanding the scope of provision of financial service to the majority members of population without access to banking services Mwenzwa et al., (2014). With reference to the ministry of Cooperative development and marketing 2008 report the cooperative movement effectively mobilized savings and disbursed loans to the mainly unbanked population.

Management of any organization is also influenced by the nature of resources provided managers cannot achieve positive financial performance without the support of the resources provided a good worker requires good tools to perform a good job. It's about adequate capital and liquidity Geurts et al., (2013). Abdirashid established that asset quality affects management efficiency in financial institutions Abdirashid, (2017). The study on SASRA regulation compliance on financial performance DT Sacco's found that supervision of DT Saccos by SASRA was still inadequate and could not be held responsible for Sacco's poor performance but

other factors affecting management efficiency also contributed to their success or failure Wanyoike, (2013).

The concept behind the cooperative movement meets the standards of a viable business plan which upon implementation success is guaranteed Bland et al., (2019). The ideal situation of a DT Sacco is that the business is guaranteed to the extent that profit is pre-determinable, the business is viable, capable of sustaining itself and feasible in that it is practical and possible to implement. The capital as contributed by members is secured upon registration, licensing as at inception of operations, therefore from the word go DT Sacco's have enough capital. The market for their service has ready customers with limited competition from other providers of similar services, since DT Sacco's enjoy consumer royalty from their members. The operation efficiency of DT Sacco's follows a well-defined standard operating procedure (SOP) anchored on International organizations standards, locally by Acts of Parliament enforced by a supervision authority and active membership participation in the day to running of the organization; however the above theoretic perception is different from the real situation, the failure is attributed to the fourth factor of the Commercial viability assessment (CVA) that is the quality of the management team, the human interface in the day to day running of the entity whose inefficiency negates the gains expected from the standards of operation outlined above, but to what extent do asset quality, liquidity and capital adequacy tie the hands of an efficient management.

All the studies as conducted focused on firm characteristics, regulation by SARRA, NPL's, growth and financial performance with opportunity for further research on causes of management inefficiency with reference to research done by Wanyoike, (2013), There is a gap of knowledge on the impact of firm characteristics on management efficiency since even in the presence of regulatory framework every year SASRA reports have indicated that DT Sacco's are

still suffering from mismanagement. The management has a duty to ensure compliance for example the major problem in Sacco's is the management of NPL's where Sacco managers are required to maintain at least a 3% of debts as NPL's. The management of DT Sacco's has been operating below expectation despite several intervention including Government effort to put legal frameworks and regulatory bodies which have not succeeded in guiding the operation of Sacco's to preserve them as going concerns. Historically the main cause of failure in DT Sacco's is in their management inefficiency, are Sacco's managers affected by firm characteristics asset quality, liquidity and capital adequacy. This is the Knowledge gap that this study intended to fill.

1.3 Research Objectives

The research objective in this study is to establish the effect of firm characteristics to management efficiency of DT- SACCOS in Kenya, broken down to both general and specific objectives.

1.3.1 General Objectives

The study's general objective is to assess the effect of firm characteristics on management efficiency of DT- SACCOS in Kenya.

1.3.2 Specific Objectives

- i. To ascertain the effect of Asset quality to management efficiency of DT- SACCOS in Kenya.
- ii. To examine the effect of liquidity to management efficiency of DT- SACCOS in Kenya.
- iii. To assess the effect of capital adequacy to management efficiency of DT- SACCOS in Kenya.

1.4 Research Hypothesis

The study seeks to address the following hypothesis;

H₀₁: Asset quality has insignificant effect on management efficiency of DT Sacco 's in Kenya.

H₀₁: Asset quality does not have a significant effect on management efficiency of DT Sacco 's in Kenya.

H₀₁: Asset quality has an insignificant effect on management efficiency of DT Sacco 's in Kenya.

1.5 Significance of the Study

The outcome of the research work and the findings will be of great importance and benefit to several groups of interest, for example; regulators, commercial banks, investors, scholars and stakeholders across the financial service industry.

1.5.1 Regulators

The findings from the study will be used by the Government through various institutions that are charged with regulation of financial institution for example the central bank, SACCO Societies Regulatory Authority (SASRA) and the Ministry of Co-operatives; the study will provide quantifiable information that will help policy makers in formulating policies to enhance performance of DT- SACCOs. Regulators will improve on their supervision of DT- SACCOs with a different management approach and create additional prudential guidelines and policies. Improved management will ensure operation efficiency, consequently, reduction of the number of DT- SACCOs being placed under receivership or facing closure.

1.5.2 DT- SACCOs

The findings of this study will assist the DT- SACCOs managers to understand the inverse relationship between firm characteristics and management efficiency as a major factor generally attributed to poor lending practices.

1.5.3 Investors, Sacco Members and Customers

Information obtained from this study will assist investors, Sacco members and customers understand the relationship between management efficiency and firm characteristics, how solving the issue of operation inefficiency of DT- SACCOs in Kenya is most likely a tool to strengthen the cooperative movement and transform it into the intended vibrant player in the financial sub sector. Investors in DT- Sacco's form the largest block of its customer base therefore they are the holders of the key decision-making organs, consequently, the investors and customers will learn the effect of prudence management, consequently, they will make informed investment decisions.

1.5.4 Scholars

This study seeks to bridge the knowledge gap in the literature reviewed on the wide topic of management efficiency and firm characteristics of DT- SACCOs in Kenya. The study's findings will increase Knowledge on the effect of management decisions on financial performance; in addition, the study will open up opportunities for further research on the causal effect of firm characteristics and financial performance.

1.5.5 Policy Makers:

The information generated from this study will be used by policy makers in the cooperative movement and the economies financial subsector in Kenya in development of policies and regulatory framework from the available information. Improved policies will assist DT- SACCOs and financial services subsectors to achieve stability.

1.6 Scope of the Study

The research work will be done on a population of all compliant DT-SACCO's in Kenya in the period of study consisting of all DT-SACCO's that were fully operational and compliant as licensed by SASRA for a period of four years from 2016 to 2019. Secondary data will be obtained from SASRA.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The study will review literature on management efficiency, firm characteristics and search for empirical evidence. Review of theories relevant to this study in specific firm characteristics affecting management efficiency in relation to the independent variable's liquidity, capital adequacy, and asset quality. Subsequent to the literature review development of a conceptual framework will be done to outline the relationship between dependent and independent variables. Empirical review will reveal from the existing literature and scholarly work the research gap on effect of firm characteristics to management efficiency which this study intends to fill.

2.2 Theoretical Review

Theoretical review focuses on analysis of several theories that seeks to explain the relationship between management efficiency and firm characteristics based on dependent and the independent variables. To support this study the following theories are reviewed; liquidity

preference theory, the moral hazard theory, the agency theory and the credit default theory. The above-mentioned theories are aimed at explaining this study and tying it with other studies and their contribution which will assist in understanding their findings and demonstrating how these contributions may provide a new theoretical understanding that helps to explain past unclear results. This combination of theories will help shed light on the issue under study Webster and Watson (2002).

2.2.1 The Liquidity Preference Theory

Liquidity preference theory is attributed to John Maynard Keynes in his book “The general Theory of employment, interest and money Keynes (1935)” he found that all factors held constant individuals prefer to hold cash than other types of assets, consequently, to attract investment in less liquid assets investors demand higher returns from such investment as bonds, stock or real estate’s Ogiriki et, al, (2014). This theory stood out as a milestone in economic study history for its contribution that explained the macroeconomic perspective of liquidity. The Keynesian revolution explained the effect of demand for liquidity and its short run effect on the economy, placing it at the center of policy and strategic planning both in the private and public sector. The theory is applied as a planning tool in the financial service sector and by governments in monetary policy management Ghani, (2023).

Renowned world scholars Tobin and Baumol in their 1958 publication sought to re-affirm the works of Keynes to further explain the General theory of employment, interest and money with the liquidity preference theory. Baumol emphasized on investor’s capital needs on one hand while on the other hand Tobin considered the cost of capital in the context of level of

interest supplied by savers that is how much return are they expecting or level of interest that will attract them to release their cash to near cash or other alternative assets with focus on returns and risk. Capital will always flow to the investment that will give the highest returns therefore investors will have been on the lookout for such opportunities. Proponents of Keynes theory, Keynes theory of liquidity preference, Baumol and Tobin evaluated the reasoning behind Keynes findings. Tobin agreed with Keynes on interest rates and explained that demand for money is affected by supply for money. Further analysis highlighted the exclusion of the assumption securities or non-money assets can still play the same role as liquid cash and earn interest consequently is used interchangeably as a perfect substitute. Baumol agreed with Keynes on liquidity but included his view of incorporating an inventory model which states that there is a reservoir of liquidity in the form of purchasing power available for use on demand. Money has been replaced by other instruments which break the gap between receipt of income and expenditure therefore reducing the need for real cash. Tobin traced behavior of spenders to the value of liquidity, which was pegged to the interest rate that is the ground zero position transaction where all other transactions must start. Baumol places liquid money as the inventory of purchasing power Anwar (2020).

According to Huseyin in his study on manager's perspective on corporate loan repayment, he stated that managers view liquidity as an opportunity to make decisions without reference to the investors. The power to hoard cash and spend at their own discretion gives managers the chance to serve their own interest spending cash held as operating working capital has no restriction in most cases no approval is required as compared to external funds. Managers utilize liquidity to invest in risky projects and projects without negative returns. Management of firms required to maintain high liquidity often find it rough in choosing the appropriate

investment to place their liquid asset and balance between liquidity, risky investment, investments with negative returns and positive return to investors. Maintaining shareholder value for organizations with huge investment programs and high liquidity requirements calls for prudent management in striking the balance Huseyin (2011)

Liquidity preference theory is applied side by side with the theory of demand for money on the basis of which central banks control liquidity through fiscal policies. Keynes emphasized on the three motives why individuals will prefer holding cash; to keep cash for daily transactions, for precautionary motives and need to hold money in cash for speculative purposes i.e. to take advantage of arising opportunities Terra, (2023). Keynes theory is applicable on the behavior of borrowers of DT- Sacco's being owners of Sacco's capital in the event that they borrowed funds and detect that the organization management efficiency is on a downward trend they tend to hold on to the borrowed funds to mitigate against losses arising from the DT- Sacco's insolvency as a firm characteristic will show an increase in financial performance

2.2.2 The Moral hazard theory

The theory of Moral hazard was developed by Diamond in 1984 which was founded on the moral responsibility to protect parties from risk exposure particularly where one party may take advantage of the other if the risk is not evenly distributed or one sided. The theory should guide the management of DT Sacco i.e., borrowers and lenders in transacting with utmost good faith by giving true information without misrepresentation for the purpose of making informed decisions. The risk of borrowers giving misleading information on their books of account and credit rating exposes DT Sacco's to uncommon lending risks Wangai et al.; (2014). The financial intermediation role of DT Sacco's places the challenge of balancing investment, earning interest and control of liquidity in the hands of the Saccos management. In an ideal or efficient situation,

the management of information play a major role in balancing the interest of savers and borrowers, information asymmetry poses the greatest risk in decision making since borrowers have more information regarding to their credit rating and relies on the little information and his own judgment Ikue et al., (2022).

As long as the borrower approaches the lender with misleading information in the event that the loan does not perform the lender is enticed to propagate the misrepresentation further to hide the risk exposure which exacerbates firm characteristics Richard, (2011).

The theory fits in the study since the risk exposure arising from misinformation and incentive to take higher risk by the management may not be fully prevented in management guidelines; for example, a Sacco management team may increase the risk of loan default exposure to meet targets or increase bonuses. The management team does not bear the risk cost and may not be exposed to any loss in the short run.

2.2.3 Agency Theory

The agency theory was promoted by Barry Mitnick and Stephene Rose towards the end of the year 1970, the theory was further progressed by the input of Jensen and Meckling in the year 1976 it is established on the premise that their exist conflict of interest between stakeholders and firm manager there is evidence that there exists misalignment of interest which can be seen in the action of both sides each trying to pull their side. The management teams are entrusted as the agents of the stakeholders but they tend to pursue their own interest at the expense of the owners. The agency theory explains the existence of the agency problem in which a party (principle) delegates work to the agent to perform on his behalf. An agency relationship is established, consequently there is conflict of interest between parties which affect the welfare of the related

parties. In an agent, principle relationship the interest of both parties should be well guarded, conflict of interest arises when the agent serves his own interest at the expense of the principle. Since both parties are utility maximizers therefore there exists an express assumption that the agent will not always serve the principal's interest.

The agency problem can be resolved through the implementation of various measures, for example, use of independent audit and internal control measures, balance of management structure to incorporate shareholder and executive directors in the board this will reduce dominance of decision making by the executive Nyabaga et al., (2020). To solve the agency problem, accurate and timely information must flow between the agent and the principal. The management must strive to reduce the gap of information asymmetry issue. Proper, high quality financial reporting boost transparency which enhances confidence it's a tool of consistency, under stability and comparability Bassiouny (2016)

DT- Sacco's members are the contributors of capital, borrowers and to some extent Managers (Agents) responsible for the management of DT-Sacco's which raise the conflict of interest stake, their main function being evaluating borrower's eligibility and approving loans. Managers are evaluated and rewarded on the basis DT- Sacco's financial performance. Management efficiency and firm characteristics are two closely related items to measure how well managers have performed the loan portfolio is analyzed, consequently to check the overall performance we consider loan repayment; therefore, managers are inclined towards allowing as many borrowers as possible to increase interest income in addition to investing DT- Sacco resources in economically non-viable risky projects. Agency theory will explain how prudent management will maximize financial management and shape firm characteristics. The cycle of

Income for DT-Sacco's is the surplus of interests charged on loan and paid to deposits Berman et al; (2015), therefore firm characteristics affect management efficiency.

2.2.4 The Credit Default Theory

A credit default refers to failure of an individual or a corporate entity. The theory of credit default was postulated by Wilson Sy in 2007 it was developed to provide clear perception of the factors that explain firm characteristics. Credit default theory provides direct causal links for macroeconomic causes versus the microeconomic effects on changing individual or organization financial status which result in financial default Sy (2007).

The theory explains Systematic lending risk; consequently, provides the basis for measuring the dynamic risk and policy development to ensure robust financial systems which translates to financial stability Sy (2007). Wilson proposed that credit defaulting is caused by delinquency and insolvency. Loan delinquency occurs when the borrower fails to make payment on the due date because of the borrower's intention not to pay and insolvency occurs when the borrower is bankrupt and his liabilities exceed assets.

Delinquency activates the lenders need to assess the borrower's financial stability; it is a red flag on the possibilities of the loan becoming unrecoverable. The lender assesses the borrower's financial position to determine liquidity if the borrower is in a negative position this will cause loan termination and confirmation of a loss by the lender. The credit default theory uses the loan serviceability ratio (LSR) as the cardinal financial ratio for NPA's which considers the maximum loan a borrower can service from his income less deductible living expense. The theory further explains the risk of non-loan service ability to arise from changes inherent in the borrower's financial circumstance. Credit default theory is collaborated by several studies on the

link NPAs and management efficiency where it is noted that a loan stops being a viable asset to the lender when the borrower fails to make payment on the due date brought about by liquidity failure.

The theory is applicable to this study since the element of delinquency is anchored on management efficiency. DT Sacco's credit officers are assigned the duty of evaluating borrowers by applying the famous 5 C's, i.e. capacity, character, condition, capital and collateral the first three based on human judgment, therefore the loan application grading process depends on the efficiency of the management.

2.2.5 Theory of information Asymmetry

Theory of Informational Asymmetry was developed in an effort to explain the importance of shared information and the impact of imperfect information. The theory was developed from 1970 to 1976 with the immense contribution from renowned scholars Akerlof, Spence, Rothschild and Stieglitz Veldkamp (2023). The theory was initially employed in the stock market where decision of investors was largely affected by the information available, information asymmetry causes market inefficiency because all the participant's do not have access to all the information required for decision making. Information asymmetry also applies in management as they collect and apply information; for example, in credit score evaluation DT Sacco managers rely on information provided by the borrowers, for instance if there is insufficient or inaccurate information it becomes impossible to make accurate decisions when conducting a transaction. The approval of loans largely depends on information provided by the borrower who has more information than the lender and a deeper understanding of the intended application of the borrowed funds; he has information about the risks involved and will

progressively hold first-hand information throughout the payment period Fulghieri et al., (2020).

The presence of asymmetric information has serious consequences on management efficiency causing adverse decisions, moral hazard and increasing monitoring cost. Asymmetric information exists prior to application and acceptance of proposals presented by the borrower though the outcomes of the action in the form of nonperforming loans are seen late long after the decision is made. Potential defaulters are aware of the bad debt risk that they carry and actively seek to conceal any red flag that may draw the attention of the lender, by limiting information or giving the wrong information to increase the chances of approval of their application; consequently, moral hazard occurs when the borrower extends the same conduct by engaging inactivities that threaten the possibility of loan repayment Pernagallo, (2024).

The theory explains that identifying good and bad borrowers is a complex and difficult exercise and an adverse decision and the moral hazard decision results in reduced efficiency of DT Sacco's intermediary function of assembling surplus funds and their transfer to the deficit unit where the cycle is broken and the funds are not available anymore; subsequently, non-performing loans will occur, depositors will not be able to access their savings. The efficiency of the DT Sacco management will be adversely affected by information asymmetry Magale (2024).

Empirical evidence shows that a large number of non-performing loans held in DT Sacco's are as a result of information asymmetry, moral hazard and adverse selection. Operation efficiency of DT Sacco's is mainly because of asset quality and its impact on their liquidity, profitability and solvency. The theory acknowledges that the credit evaluation arm of the management team should not solely be depended on to effectively vet borrowers to prevent

default risk. Other measures for example credit information sharing can improve the efficiency of the management in prudent lending Wijerathna (2020)

2, 2, 6 The Shift ability theory of Liquidity

The theory of liquidity shifts ability states that banks can protect their liquidity by maintaining investment instruments that are easily transferable in a perfect secondary market. The theory was developed by Moulton in 1918, Moulton specified that the best approach to attain the required minimum reserve of liquid assets is by mutual transfer within the financial institution in form of a clearing house, where by the maturity date of the investment does not tie the holders need to exit; for example, treasury bills and bonds maturity date becomes inconsequential and the holder can sell them prior to the maturity date without any loss in value and benefits. The focus of liquidity should be quick transfer, therefore, the instruments held should be those that attract investors that are looking for quickly convertible assets even in times of economic crises. The financial institutions must work in harmony to ensure that transferability as envisaged in the shift ability theory is realized Lotto (2019).

The quest for liquidity is guided by the nature of intermediaries' operations, that demand real time liquidity the cash flow of a bank when all systems are running plot a scenario where present and future value of money are equal; banks operate like fresh water lakes, with inlets in form of deposits, loan repayments and out flows to borrowers, and other short-term investment opportunities; for example, interbank lending or bond markets. The liquidity of a financial institution depends on its ability to transfer its semi liquid assets to another party on demand without losing its value assuming zero transaction cost, though the returns expected should be realized the theory focuses on demand or the swift change of hands that will equate money held in cash to that held in short term investments. The choice of investment instruments should fulfill

one key attribute that is immediate transferability to others without any loss on value or earned returns, the transferability is not restricted to interbank exchange, money market or trading in money stock exchange. The search for liquidity should also include the central bank as lender of last resort and liquidator of government securities Werner (2014).

The measures of liquidity in the financial service sector are informed by the shift ability theory. These measures are loan to deposit and liquid asset ratio. The interpretation of this measure explains the portion that is liquidate-able in a short notice in relation to the extent that it will cover the in liquid portion. Liquidity is similar to stock of goods in retail shops whereby with proper stock management the shop keeper will continuously serve his customer, that is customers will never be turned away on the basis of out of stock items. Loan to deposit ratio indicates the balance of the financial institution intermediary role in addition to indicating the extent or quantity of liquidity demand a higher loan to deposit ratio or lower liquid asset ratio is an indication of limitation it shows what is available for immediate demand Mathew et al., (2023). The theory of liquidity shift ability recognizes that transferability of components in the investment portfolio is the ideal path of ensuring liquidity Ibe, (2023). The realization of the theories proposition, faces the drawback of economic cycles; where, us the concept will work perfectly in recovery and boom season the same may not hold during depression or when there is an economic crisis, for example, turmoil in the financial sector's credit crunch as it happened in 2008 which creates an ineffective secondary market the reliance on the conversion of semi liquid assets in the secondary market vanishes due to lack of market the shift ability cycle is broken Charamonte et al;. (2017).

The application of this theory in the study helps in explaining the weight of liquidity in DT Sacco's as much as regulators have set liquidity levels the nature of operation in saving and

credit cooperatives calls for a more active secondary market as compared to commercial banks who have access to interbank loans at low rates and central banks as lender of last resort. DT Sacco's operations are exposed to economic soundness that influence the actions of its members and to a great extent cash flow. The theory justifies the classification of liquidity as firm characteristics of DT Sacco's besides being a regulator's compliance measurement tool because it aligns with the Sacco individually with a linkage to DT Sacco's financial performance and efficiency as an intermediary Njue (2020). The liquidity of a financial institution leads it to efficiency making it easier to expand since liquidity is the driving force where all other firm characteristics are pegged Akhter (2018).

2.3 Empirical Literature Review

2-3-1 Asset quality and Management efficiency

Asset quality is the status of the loan book in terms of the ability of the borrower to full pay amounts borrowed. Assets of a DT Sacco's are not as diversified as those of other commercial lending entities loan to members for the largest block of asset which is also prone to the non-performing loan risk Nyaga, (2012). Recent studies have found the existence of a negative relationship between firm characteristics and management efficiency; for example, a financial institution with lower level of non-performing loans reported a highly efficient banking operation. The relationship between bad debts and cost efficiency is the most intricate since non-performing loans come with additional expense to the organization mainly due to the cost of defaulter follow up, the cost of recovering overdue loans increases operation cost and the non-payment of interest reduces income, the cost incurred by financial institution as an intermediary; that is interest, to deposit or inter bank loan further compounds the cost of NPL Gulati (2019).

The basic assumption of management inefficiency is held at the hypothesis of bad management. In other words, it is the management team that has failed, beside their effort does inefficiency occur due to other factors in particular firm characteristics Agarwal (2021).

The study on credit risk management relationship to management efficiency on MFI's in Kenya with a special focus on establishing the relationship between loan loss provision coverage ratio (LLPCR) and Management efficiency Otieno et al., (2016). The study was carried out over a period of three years 2011 to 2015, from the population of all compliant MFI's in Kenya purposive sampling was done to get a sample of six MFI's from which secondary data was obtained from their audited annual financial statement. Descriptive statistics was used to analyse the trend of risk that MFI's management efficiency is exposed to. To test the strength and relationship of variables the study applied Pearson correlation. To test the significance of relationship between variables of risk management and management efficiency of MFI's GMM technique was used to analyse panel data. The study found that credit risk measured by LLPCR had a strong and significant negative relationship to MFI's performance as measured by ROE and ROA. The study concluded that there is a significant relationship between credit risk management and management efficiency of MFI's. The study recommended that MFI's must strengthen their credit appraisal department and ensure that all their customers are thoroughly scrutinized and the appropriate credit rating awarded before disbursement of loans to avoid defaulter which result in higher provision for non-performing loans and poor financial performance.

The study on effect of commercial banks in Kenya lending behavior on loan loss provision the study was a census carried out on eleven listed commercial banks in Kenya, secondary data was extracted from the audited annual financial statements and annual

supervisory reports from the central bank of Kenya. The data was subjected to descriptive and inferential analysis to test the relationship between commercial lending behavior and loan losses. To establish the causal effect relationship existing between lending behaviors of listed commercial banks in Kenya and their loan losses. The study found that customer appraisal and quality of loans had a significant effect on loan losses. The study recommended that management of listed commercial banks in Kenya should put into consideration all loans and consider their quality prior to setting their loan loss provision to ensure adequate provision and accurate management efficiency evaluation Obuya et al, (2017).

The study examined determinants of loan loss provision (LLP) in commercial banks in Italy, the period of study was twelve years 2001-2012, a census was on 400 commercial banks in Italy. Secondary data was obtained from the commercial banks' balance sheet and income statements obtained from the database of Italian Banking Association (ABI). The study classified determinants of LLP in two groups, group one was discretionary LLP with the following characteristics; income smoothing, signaling and capital management, group two was non-discretionary LLP which is guided by business cycle. Variables used were effects of guaranteed loans, risk level and coverage ratios. Data analysis was done with the aid of a generalized method of moments (GMM). The study found that LLP in commercial banks in Italy is driven by non-discretionary components and it is consistent with LLP counter cyclic behavior. The behavior of LLP was also attributed to initial loan capital coverage ratio and loans with collateral. The study concluded that behavior of bank managers and determination of future NPL's is insignificant in collateralized loans Caporale et al, (2015).

The study on bank manager's foresight and anticipation of non-performing loans in the USA, Europe, Africa and Asia, this study involved 82 banks spread across the region, with a

purpose of drawing attention to appropriate actions taken by credit risk managers to minimize non-performing loans, Secondary data was collected from the Bank scope database. Descriptive statistics and regression analysis were used to analyze the data. The study found that existing banking regulations do not affect the volume of NPL's which continue to pile up and stagnant growth with depressed management efficiency and affects stability of financial institutions. The study recommended that since regulation does not appear to have predictable results in control of NPL's financial institution must look beyond provision for loan losses in financial statements as a way of diverting their impact on financial performance Ozili, (2015)

The study on effect of credit risk management system on the management efficiency of commercial banks in Uganda, the study was carried out over a period of ten years 2006-2015 secondary data was obtained from commercial banks annual audited financial statements, data from central bank of Uganda, Bank scope database and African Development Bank reports. The study dependent variables were non-performing loans, growth in interest earnings and loan loss provisions to total loans. The study used descriptive statistics, correlation and regression analysis to analyze the data. The study found that credit risk management affects the management efficiency of commercial banks. The study recommends that commercial banks in Uganda must improve their techniques in credit risk management with a view of maintaining a qualitative asset portfolio with particular attention to loan loss provisioning, ensure proper screening of customers and credit worth with continuous monitoring after disbursement to completion of payment. The management must ensure that proper records are maintained and that non-performing loans are adequately provided for in the financial statements Serwadda, (2018).

In study on Eastern and Central Europe commercial banks performance determinants. The study developed a management efficiency index (FPI) derived from the CAMEL ratio, the

study was carried out in a five-year study period 2009-2014 secondary data was collected from the Bank scope database for 128 banks operating in nine central and eastern Europe countries. Descriptive and empirical analysis using fixed effect panel regression was done. The study found that asset quality and earnings of the bank are directly affected by provision for non-performing loans and positively affected by inflation and business mix. The study recommends that banks management should employ a robust credit risk diversification system to protect banks from credit risks and protect their asset quality in addition to bank stability Antoun et al., (2018).

The study on the effect of ownership and banking sector reforms on bank efficiency in India found that Banks that were not efficient also had a high level of NPL's. The study by Arora in 2014 was done on 54 commercial banks that were operating in India between the years 1991 to 1992 and 2006 to 2007. Efficiency score was generated through data envelopment analysis which is a technique that provides for the measurement of relative efficiency in different units of a firm. DEA has the ability to capture the interaction between several input and output and process their relationship which produces high standard and satisfactory findings beyond what traditional ratio analysis provides. The study found that there was a positive relationship between asset quality and management efficiency; he concluded that India's least performing bank had a higher level of NPL's Arora (2014).

A study on operation efficiency in commercial banks in Kenya found that the impact of credit risk ratio and capital adequacy was significant on the operating efficiency of commercial banks. The study linked the agency problem to rise in credit risk; the shareholders pushed the management to inefficiency. Their recommendation was that credit risk management requires independence; therefore, banks should have experienced and independent credit risk managers for efficiency Odunga et al., (2013).

A study on impact of financial reforms on efficiency of commercial banks in Pakistan, the study used 40 commercial banks spread across private, state owned and foreign owned, the study was done over a ten-year period 1991 to 2000. The study used data envelope analysis in the generation of efficiency score, tobt regression was used to investigate correlation between bank efficiency and several commercial banks characteristics. The study found that there was a relationship between firm characteristics; bank size, branch network and asset quality Kumar et al., (2014).

2.3.2 Liquidity and Management efficiency

Liquidity refers to comparison of assets and liability to derive the proportion of liquid assets available to meet short term financial obligation. Liquidity is measured by considering current liabilities and assets of an organization's financial statement from which liquidity ratios are drawn. Liquidity ratios include; operating cash flow ratio (OCFR) which is calculated by dividing cash flow from operation by current liabilities. Liquidity by debtor collection period (DCP) is calculated by dividing current assets by current liability and multiplying by 365 days it shows how current assets are covered on a daily basis measure. Liquidity by cash conversion ratio (LCCR) calculated by dividing debtor's collection period by creditors payment period. Liquid asset to borrowing ratio which was calculated as follows dividing liquid assets by customer deposit and short-term borrowing.

The study on determinants of non-performing loans on commercial banks in Europe covering the Euro-area in a study period of 26 years 1990 – 2015 the purpose of the study was to establish determinants of none performing loans the study focused on liquidity level, capital inflation and growth in credit affected banking sectors non-performing loans. The study collected secondary data from banks financial statements and did a panel data analysis using a fixed effect

model. The findings indicated that; liquidity, Inflation rate and credit growth had a significant to level of non-performing loans and profitability Dimitrios et al., (2016).

The study on effect of liquidity management to management efficiency of DT-Sacco's with specific attention to DT-Sacco's operating in Nairobi with the intention of closing the gap of scarce knowledge on the cooperative movement where scarce empirical evidence on Sacco liquidity management is available. The study concentrated on measurement issues associated with liquidity management. The research was carried out in the County of Nairobi with a sample of 27 DT-SACCOs that were licensed and fully licensed by SASRA, secondary data was collected from the Sacco's financial statements for the five-year period of study 2010-2014. Data was collected for the independent variable RAO, dependent variable liquidity and the independent variable, operational efficiency and firm size Descriptive statistics, correlation efficient and regression analysis methods to analyse the data and generate results. The study found that RAO is positively related to liquidity, operational efficiency, quick ratio and firm size. The study findings yielded to regulators recommendation that DT-SACCO's should place in the center of their policy a good management practice which will increase their financial performance index Song'e, (2015).

The study of the effect of cash management on financial performance of DT-SACCO's in Mt Kenya region. The study independent variable to measure cash management included cash budgeting, cash flow forecast, liquidity management and member's deposit. The dependent valuable to measure management efficiency, profit margin and level of operating expenses, the study also had regulation policy as moderating variable; non-compliance and updating of policies. The research was carried out in the Mt Kenya region with thirty DT-SACCOs. The study used primary data collected through a self-administered and structured questionnaire in

addition to secondary data derived from DT-SACCOs financial statements and data corrected from SASRA annual reports. The study used inferential statistics and descriptive statistics to analyse the data and draw findings and conclusions. The study found that cash budgeting, cash flow forecast, liquidity management, member's deposit and supervision had a significant influence on the management efficiency of DT-SACCO's. The study concluded that DT-SACCO's managers should increase their attention on liquidity whereas SASRA should focus on cash management supervision and develop policies aimed at enhancing liquidity Njeru et al., (2015).

The study on financial leverage and management efficiency of DT-SACCO's in Tanzania. He examined 115 DT-SACCO's licensed and operational in Tanzania the study was carried out for a period of four years 2011- 2014. The study's main focus was on the effect that leverage has on management efficiency with moderating factor management board resolutions on debt. Secondary data was derived from Sacco's financial statements, the study used a fixed effect model to analyse the date. The study found that financial leverage had a negative and significant relationship to management efficiency of DT-SACCO's whereas board meetings had significant and positive moderating effect on DT-SACCO's financial leverage. The study concluded that DT-SACCO's should focus on member deposit and capital contribution and avoid debt as a source of operating capital which is expensive and reduces profit margins. Adequate appraisal of financing at management level was also recommended Towo, (2022).

The study on management of DT-SACCO's with focus on sustainability and outreach, the study was carried out on DT-SACCO's from the rural region of Tigray in Ethiopia. The study puts into perspective the ability of rural cooperatives accessing funds from the urban financial institution MFI's, Commercial and Investment banks to strike a balance between low cost loan

and liquidity. The study took ROA as the dependent variable, asset utilization, operation efficiency, firm size as dependent variables. Secondary data was obtained from DT-SACCO's financial statement analysis using financial ratios and correlation analysis done using statistical software MINITAB. The result of the data analysis shows that there is a strong positive correlation between asset utilization, liquidity and moderate positive correlation between RAO and operation efficiency in addition to firm size. The study also brought out several views on sustainability and outreach, mainly poor saving culture, DT-SACCO's weak organization structure, poor regulatory and policy development structure, poor members credit rating and low capital base. The study recommended increased mobilization on membership to counter threats posed to DT-SACCO's by other financial institutions Sebhatu (2012).

The study on effect of bank liquidity to management efficiency of commercial banks in Morocco, the study looked into liquidity risk and focused on several liquidity indicators which include; Liquidity ratio, bank size, external funding to total liabilities, share of banks capital in banks total assets, foreign direct investment. The study was carried out over a period of twelve years 2001-2012. Data was corrected from all licensed commercial banks in the period of study panel data regression was used to analyse the relationship between liquidity and management efficiency of commercial banks in Morocco. The study found that there is dependency between bank performance and liquidity in addition to firm size. The results indicated that liquid banks are not essentially more efficient than illiquid banks but these parameters are more pronounced in periods of financial crisis. The study concluded that bank size and liquidity are vital indicators of commercial banks performance in Morocco Ferrouh, (2014).

The study on the effect of liquidity risk management on the management efficiency of commercial banks in Saudi Arabia, the study was carried out on selected conventional banks

over a research period of seventeen years 2002-2019. The independent variables to measure liquidity risk were cash to total deposit CTD and loan to deposit LTD. Equity to asset ratio ETA was used as a controlling variable, whereas return on equity was used as a measure of the dependent variable financial performance. The study used panel data to test the hypothesis with the aid of SATA data analysis software. The result of the study was that liquidity risk had a significant negative impact on Saudi Arabian banks financial performance, the bank's management should closely observe optimum balance on loan to deposit to maintain liquidity. Lending beyond the average loan/deposit ratio increases the lender's exposure to sector returns which may diminish as more lending expands exposure to default risk. The study recommends that liquidity be upheld. They further suggested that there be diversification in the investment portfolio mix to include semi liquid investment and risk-free investments in addition to management decisions and policies aimed at maintaining liquidity and increasing profitability Hocini et al., (2021).

2.3.3 Capital adequacy and Management efficiency

Capital adequacy refers to the minimal capital that a financial institution should have for it to be operational usually set by the industry regulator indicated by the capital adequacy ratio to equity held as a percentage of risk weighted assets of the financial institution. Capital adequacy ratio is the industry risk indicator which points at solvency. The adoption of adequate capital transformed the financial sector from the traditional role of intermediaries waiting for savings to give out to borrowers and largely depended on depositors for their operation. The introduction of regulations on own capital was challenging to financial institutions since the capital raised had to be invested in profitable ventures, a good measure management efficiency is required to efficiently allocate the capital within permissible investment portfolios Kulane et al (2018).

The study on capital adequacy effect on management efficiency of commercial banks in Kenya observed that capital adequacy is regulators grid reference a key area of concern to ensure that financial institutions have enough capital to cover risks carried. The study was carried out on commercial banks in Kenya from the population of 42 Banks a survey was conducted and secondary data was corrected from the banks financial statements the study applied descriptive statistics to analyze the data and linear regression to form the relationship that exist between the dependent and independent variables; capital adequacy, bank size, asset quality, liquidity, management quality and return on equity respectively. The study found that capital adequacy had had a negative and significant impact on return on assets of commercial banks in Kenya. The study concluded that management of commercial banks should ensure that they have enough capital to sustain sufficient capital adequacy ratio Musyoka, (2017).

In a study on Impact of credit risk management and capital adequacy on the management efficiency of commercial banks in Nigeria to close the knowledge gap on the effect of credit risk and bank profitability as anticipated by the designers of Bassel II accord. The study applied cross-sectional and time series data from selected banks financial statements for the period of five years 2004 – 2009. Panel data model was applied to appraise the existing relationship between loan loss provisions (LLP) Loans and advances, capital adequacy, non-performing loans and return on assets on banks financial performance. The study found that capital adequacy and proper credit risk management had a positive impact on banks' management efficiency however advances and loans had a negative impact on profitability of the bank. The study recommended extensive credit appraisal of all borrowers before any loans are approved and disbursed Ogboi et al., (2013).

The study on determinants of profitability in developing countries commercial banks as depicted by commercial banks listed at Malawi stock exchange. The study was carried out for a period of four years 2009-2012. Secondary data was collected from the bank's financial statements, internal and external profitability was measured by ROA and EY respectively the determinants were capital adequacy, management efficiency, liquidity and bank size. Regression analysis results indicated that ROA was significantly impacted by liquidity, management efficiency and size of the bank, whereas capital inadequacy has insignificant impact on ROA but EY was significantly affected by bank size and capital adequacy Lipunga, (2014).

The study on determinants of commercial banks profitability in Kosovo as measured by return on average equity (ROAE), return on average assets (ROAA) and net interest margin (NIM), the study aimed at elaborating the impact of the following determinants of profitability as represented in the CAMEL approach Capital adequacy, Asset quality, Management efficiency Earnings ability and Liquidity. Secondary data was drawn from the ten commercial banks operating in Kosovo for a period of six years 2009-2015 to derive estimates for the relevant ratios and coefficients. The data was analysed using descriptive statistics, correlation and multiple regressions. The study found that profitability of commercial banks in Kosovo is mostly determined by internal factors while external factors have insignificant effect on their financial performance Nuhui et al., (2017).

The study on financial sustainability of Ethiopian microfinance institutions MFI's the main agenda of this study was to identify factors affecting sustainability. The factors under study were breadth and depth of outreach, cost per borrower, dependency, capital structure and staff productivity. The study was carried out for a period of ten years 2002-2010. Secondary data was collected from 14MFI's subjected to qualitative research. The study found that breadth and depth

of outreach, cost per borrower, dependency had a significant impact on sustainability of MFI's financially Kinde (2012).

The research was done on banks listed on the Indonesia stock exchange (ISE). Secondary data from the financial statement were used to get the variable ROA, NPL and CAR for the three-year period of study 2016 – 2018 as obtained from the ISE database. The study used a sample of 24 banks from a population of 45 banks sampling was done using purposive sampling method; the study used observation as the data collection method. Quantitative data analysis was done and path analysis used to analyse the data and draw conclusions. The study found that there is a negative and significant relationship between NPL and CAR. CAR has a positive and significant relationship with ROA; NPL's have a negative and significant relationship with ROA. The study concluded that CAR mediates the effect of NPL's to ROA. They further proposed that prudence Management of capital adequacy and reduction of NPL's will reduce loan loss provision which has significant effect on ROA. The study recommended further research to include important variables that have significant impact on ROA that include; net interest margin, operating cost to operating income ratio and loan to deposit ratio Swandewi et al., (2012).

2.4 Conceptual framework

Conceptual outline is drawn to show the clear links between dependent and independent variables and their relationship in the research work. The relationship between the independent and the dependent variables is presented below;

FIGURE: 1

Conceptual Framework

Independent variable

Dependent variable

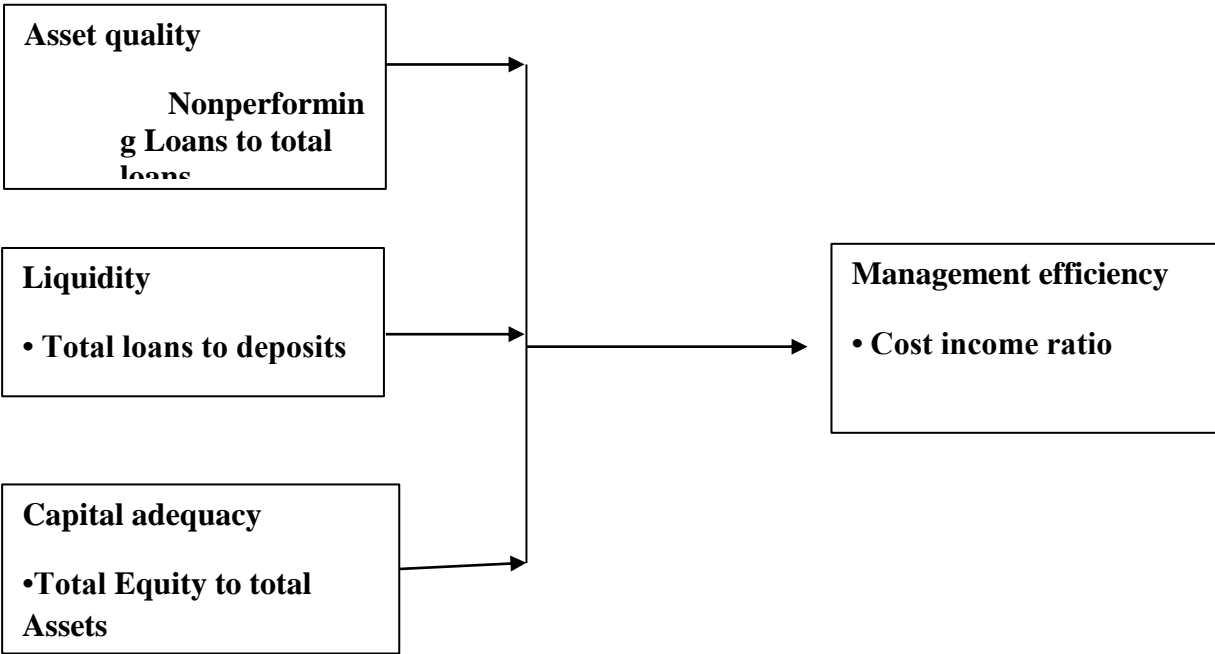


TABLE 2.1

Operationalization of Variables

Variables	Indicators	Abbreviation	Measurement
Independent			
Firm	Asset Quality	AQ	Net Non-performing Assets/Total Loans

Characteristics

Liquidity LQ Total loans/total deposit

Capital Adequacy C/A Total Equity /Total Assets

Dependent

Management Management ME Cost to Income
Efficiency Efficiency

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The following are the highlights of the research methodology which outlines the approach that was applied to attain the specific objectives as a response to the studies research question. Research methodology entails choosing the research design, choosing the sampling technique

and data analysis model to be used. The study outlines the target population, sources of data and instruments of data collection and analysis. This chapter brings out the content of the research work and outlines the technical details in the best way possible in the understanding of other study and scholars. It is on the basis of this presentation that references are made, the foundation for implementation of findings and recommendation. The study is expected to present his work in a format that accommodates general readers who are only interested in the result of the research work Bell et al., (2022).

3.2 Research Design

Research design refers to an outline for collecting, measuring and analyzing the data needed for the study Kothari (2013). This study applied descriptive research design because it involved an investigation of the firm characteristics and their effect on management efficiency of DT Sacco's in Kenya. According to Muthuva, descriptive design enables the study to get information about the status of the phenomena and it explains its association with the variables in the study Muthuva (2016). This method has been considered appropriate for achieving the research objectives of this study because it will apply secondary data spread over time which will be enormous. Descriptive research is commonly used in studies that involve obtaining information that concern the current situation of the phenomena to explain circumstances that exist with reference to various variables or conditions in a situation in addition to describing characteristics and behavior of the population under study in a systematic generally accepted accurate version. Several scholars have contributed in the development of generally accepted research design; for example, Bel et al., (2022), Sekaran (2010), Mugenda et al., (2003) and Kothari (2013).

3.3 Target population

Target population is the entire group of event objects on individuals with similar traits which conform to a predetermined specification Mugenda (2010). This study was done on DT-SACCO's in Kenya that were compliant with SASRA requirements from 2017 to 2021 i.e. the target population was 174 DT Sacco's; however, scrutiny of financial statements revealed that there was deregistration and registration of new Sacco's over the period of the study, from the total number of full operational and compliant Sacco's for each year in the five-year period 120 Sacco's were selected randomly.

3.4 Data Collection

The research work was carried out using secondary data obtained from audit and published financial statements of DT- SACCO's and information from SASRA using a data collection schedule. Secondary data is data that is already available in other words collected and analyzed by a third-party Kothari (2014). The choice of secondary data was preferred because it is readily available from a credible source and prepared under similar guidelines therefore there is uniformity and errors are minimized.

3.5 Data Analysis

To explain the effects of firm characteristics on management efficiency of DT-SACCO's in Kenya, the study undertook statistical analysis after processing data collected. Data processing involved the following editing, coding, classification, tabulation and presentation graphically Arellano, (2003). The study extract data containing quantitative details from financial statements of DT-SACCO's, the panel data collected will be analyzed quantitatively, mathematical and application of regression equations consequently this will be solved by use of a statistical software (STATA).

STATA will facilitate analysis of descriptive statistics and multiple linear regression analysis between dependent and independent variables. Data collected in a research study should be processed and analyzed technically Polit and Beck (2006). Quantitative information will be analyzed through statistical procedures STATA which will provide a broad range of data analysis techniques.

3.6 Panel Data

The study will use panel data to carry out the research analysis for five years starting from 2014 to 2019. Panels are very essential in increase precision as they hold detailed information unlike cross sectional data Wang et al, (2020) According to Hsiao, panel data offers the study several data points which increases freedom and decreases collinearity; consequently, increasing efficiency in econometric estimates Hsio (2022). Longitudinal data permits the study to analyze several economic issues that cannot be analyzed in time series or cross-sectional data. Gujarati (2012) has suggested various estimating techniques that can be used in estimation of the panel data that is pooled ordinary least squares (OLS), fixed effect (FE) and random effect (RE).

3.6.1 Pooled Ordinary Least Squares (OLS)

OLS combines time serial and cross-sectional data and uses ordinary least squares to estimate the underlying model. The study will apply multiple linear regression models to establish the relationship between firm characteristics and management efficiency.

The study will apply the following model in regression analysis;

$$Y_{it} = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \varepsilon_{it}$$

Where,

Y= Firms Management efficiency a measured by ME

β_0 = Constant or intercept which defines the value of assets without including the predictor variable

$\beta_1 - \beta_3$ = Regression coefficient that is the rate of change of an independent variable being a function of change in the independent variable.

X1 = Asset Quality

X2 = Liquidity

X3 = capital adequacy

ε = “error” term reflecting other factors that influence management efficiency.

3.6.2 Fixed effect model (FEM)

In advanced data analysis a statistical model is determined based on the characteristic of the variable parameter if these parameters are not random that the means are fixed the statistical model applied is the Fixed Effect Model (FEM). In FM the basic nature is that the mean graph assumes a slope of the coefficients in the regression model and won't vary over time for all individuals. In the application of FEM, the data analyst is assured that when analyzing data, the data will not change within individual variables over time. Fixed effect model (FEM) arising as a result of the reason that while the intercept may differ across individuals, FEM will assume the slope coefficients in the regression will not vary across individuals over time and whenever the study is analyzing impact of variables that spread over time within an individual Gujarati (2012). According to Green 2002 FEM will assume that if any difference exists within the units the difference will be captured in the constant term Green (2022)

$$Y_{it} = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \varepsilon_{it} + U_{it}$$

Where,

ε_{it} = Error term

U_{it} = Disturbance term

3.6.3 Random effect model (REM)

In statistical modeling there are instances where the panel data require a model that will accommodate unobserved time invariant u_i not correlated some or all the independent variables. This model intends to accommodate random and fixed variables in one model referred to as Random Effect Model (REM) Gujarati (2012). According to Kline, REM model is an advanced FE model expanded to address the issue of differences across individual variables which are assumed to be random or uncorrelated whereas the predictor variables are included in the model which explains the difference between FEM and REM Kline (2023).

$$Y_{it} = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \varepsilon_{it} + U_{it}$$

β_1 = Random Effect

ε = Error term

U_{it} = Disturbance term

3.7 Model Specification Tests (MST)

MST provides a layout of test of the panel data using STATA and defines the best model for data analysis. The study will use Breusch Pagan Lagrange (LM) as a test of pooled or random effect model, Wald Chi-square test Wooldridge Drukker to test for heteroskedasticity and first order autocorrelation, serial correlation; Hausman test to for fixed effects. Cross-sectional dependence and contemporaneous correlation will be tested by Pasaran CD test. The study will apply the

Jacque Bera test to check on normality Park (2015). A summary of the test to be carried out and the criteria for making the decision is presented in table 3.1

3.7.1 Unit Root

Unit root is a feature of a particular stochastic process that may cause problems in statistical inference with time series models of randomly collected data. A linear stochastic process has a unit root for example, if 1 is a root the process's specific equation. Such a process will be non-stationary with or without a trend. The presence of a unit root will be tested using a unit root test Levin-Lin-Chu Unit test or Harris-Tzavalis. Test If p-value <0.05 use stationary alternative; null hypothesis of a unit root will be rejected in favor of the stationary alternative in each case if the test statistic is negative and higher than the critical value Gujarati (2009).

3.7.2 Normality

Normality of data refers to distribution of data collected tests are used to determine if a data set is well-spread to facilitate comparison that is the data presented for analysis is not too low or too high basically tested graphically using histogram or by a normal distribution probability curve. The purpose of this test is to find out how the randomly selected subjects in this study will apply. Jacque Bera (JB) is a test of normality that is applicable in large sample tests. JB is based on the OLS residuals to test normality by computing the skewness and kurtosis. If $P>0.05$ then this will imply normality Park, (2015).

3.7.3 Heteroscedasticity

Heteroscedasticity occurs when a randomly selected data set depicts selected sub populations that have different variability's or statistical dispersion from others. This study will apply Wald

Chi-square test and Wooldridge Drukker test to test for heteroskedasticity If P value <0.05 , this will imply presence of Heteroscedasticity Gujarati, (2009).

3.7.4 Serial Correlation

Serial correlation occurs when error terms from adjacent time periods or across-section observation are correlated, therefore the error term is serially correlated. Serial correlation occurs in time-series data when the errors from a given period are replicated in future time periods; for example, data set in a study predicting the growth of earnings per share, results in overestimates in one year is likely to dictate an overestimate in succeeding years. This study will apply Wooldridge Drukker test as an attest of serial correlation. If P value >0.05 Therefore no serial correlation, Pindyck et al., (2008).

TABLE 3.1

Panel Data Diagnostic and Model Specification Tests

Test	Test to Use	Conclusion
Use of pooled or random effects model time fixed	Breusch-Pagan Lagrange multiplier	If <i>p-value</i> > 0.05 use pooled effects model
	Testsparm Test	if <i>p-value</i> > 0.05 , there are no time fixed effects do not use two-way model or introduce

dummy variables so we fail to reject the null that the coefficients for all years are jointly equal to zero, therefore no time fixed effects are needed in this case

Heteroskedasticity	Wald Chi-square test	If $p\text{-value} > 0.05$, presence of Heteroskedasticity
Serial correlation	Wooldridge Drukker test	If $p\text{-value} > 0.05$ Therefore no serial correlation
Fixed and random effect	Hausman Test	If $p\text{-value} > 0.05$, use a random effects model.
Cross-sectional dependence/contemporaneous correlation	Pasaran CD test or Breusch-Pagan Lagrange multiplier	If $p\text{-value} > 0.05$ there is no cross-sectional dependency thus the null hypothesis is that residuals are not correlated
Normality	Shapiro Wilk w test	If $p\text{-value} > 0.05$ then this implies normality.

CHAPTER FOUR

DATA ANALYSIS, FINDINGS AND DISCUSSION.

4.1 Introduction

The fourth chapter presents the study data and findings in graphs, tables and narrative. The topic of this study was to establish the effect of firm's characteristics on management efficiency of DT – Sacco's in Kenya as the study was done over a five-year study period from 2017 to 2021. The

study used secondary data from financial statements and SASRA annual reports. The study used descriptive statistics analysis, panel data analysis and correlation to analyze the data, in addition the study used MS excel in data collection and processing subsequently software for data analysis.

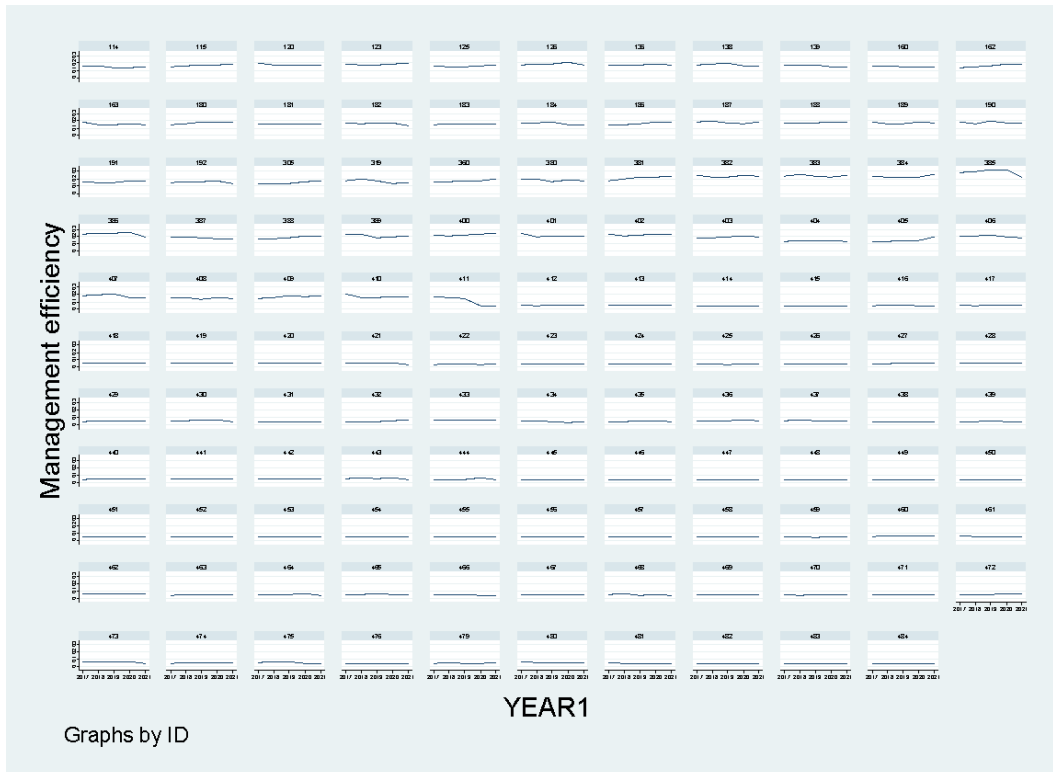
4.2 Response rate

Out of the target population of all licensed deposit taking Sacco's in Kenya that were licensed and operational as at 1st January 2017 to December 31st 2021; however, as in any other industry new firms enter while others leave, therefore, DT-Sacco's that did not incessantly maintain their status of compliance with SASRA or submit their financial statements hence they were not included in the study. The exclusion of non-compliant DT Sacco's in the study was guided by the 1976 work of Roderick little and Donald Rubin on accounting for missing data, whereby the duo suggested that firms with missing data should be excluded, the study opted to for the complete case analysis, to avoid filling in missing data with suitable estimates which may give misleading results since the estimated data is not truly observed Freyberger (2024) Since the study adopted balanced panel data, only DT-Sacco's that were compliant with SASRA and had submitted their annual financial statements were used for the study with reference to SASRA annual reports.

The study was done on 120 DT- Sacco's which represented 68.97% rate of success which is within the standards of appropriate representation according to Mugenda and Mugenda the response rate range above 50% is adequate and meeting expectation of a representative result, 60% is good and 70% and above exceeded expectation. Similar studies on firm characteristics in the financial sector also reported impressive response; Kioko (2016) had a response rate of 86% Mwangi (2014) had a success rate of 67% and Kariuki (2016) had 79%.

FIGURE 4.1

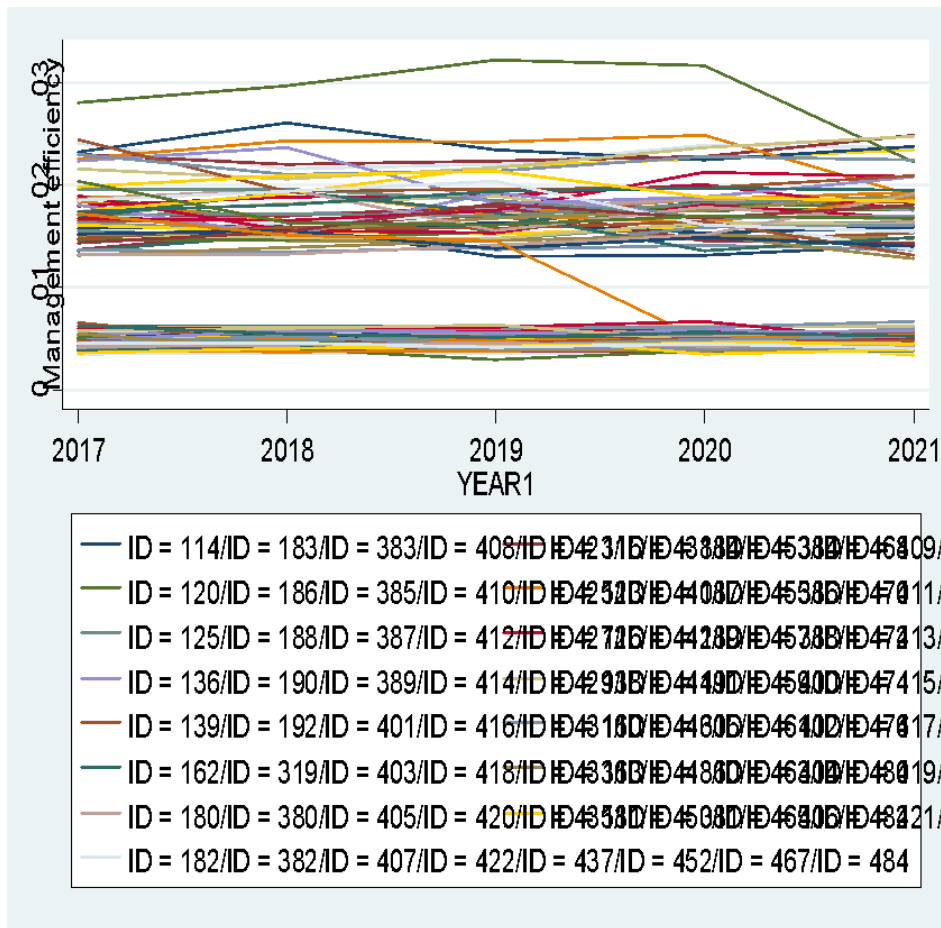
Exploratory Data Analysis



As indicated on figure 4.1 management efficiency was not constant all through, it kept on raising and failing. This is shown by upward inclination and downward drift as shown by figure 4.2. The upwards and downwards trend was a result of changes in firm characteristic's asset quality, liquidity and capital adequacy.

FIGURE 4.2

Exploratory Data Analysis



4.3 Descriptive Analysis Results

Table 4.1 shows descriptive statistics and distribution of variables which entails mean, standard deviation, maximum and minimum. An aggregate of 600 occurrences of individual variables was reported. Mean is a measure of dominant tendency which is used to describe utmost typical values formed in a certain data set. How far the distribution is from the mean is measured by standard deviation. Skewness is used as a measure of symmetry; a set of data is considered to be asymmetric if it appears similar from center point either from right or left while Kurtosis is used to indicate the data used are either peaked or can be considered as flat comparative standard distribution.

The average ratio of management efficiency of Deposit taking Sacco's covered in this study was 1.0%, this result shows that the ratio of expenditure to revenue was low hence management efficiency was recommendable. Standard deviation of 0.0067552 this positive result shows that the management in DT-SACCOS was doing well also skewness is 0.7142977 and kurtosis is 2.118685 and this shows a positively skewed and slightly peaked distribution. Capital adequacy had a mean ratio of 1.55% and standard deviation of 0.0328576 and this indicates that most DTS had a positive capital adequacy position while skewness was 4.854465 and kurtosis was 27.05183 which indicate considerably peaked and distributed. Asset quality ratio has a mean of 1.681% and standard deviation of .001943 indicates that most of DTS had a good asset quality ratio as depicted by positive income reported, skewness of .609272 and Kurtosis of 4.024039. Liquidity means ratios was 34.40% and standard deviation of 0.5499213 this show that most of DT-SACCOs had a positive liquidity position and were in a position to issue loans. Skewness of 2.388715 and Kurtosis 14. 74892. The positive values obtained infers that the all the variables used in the study are substantial in determining Management efficiency in Deposit taking SACCOs of Kenya

TABLE 4.1

Descriptive Analysis

	Management efficiency	Capital adequacy	Asset quality	Liquidity
Mean	.0100978	.015519	.0168085	.3440395
Std. Dev.	.0067552	.0328576	.001943	.5499213
Min	.0028239	.0013266	.0125348	.0028239
Max	.0321326	.2453532	.0251288	5.2629
Skewness	.7142977	4.854465	.6092725	2.388715
Kurtosis	2.118685	27.05183	4.024039	14.74892

Obs.	600	600	600	600
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4.4 Correlation analysis

The objective of the study was to establish the relationship between independent variables and dependent variables of deposit taking SACCOs. The Pearson correlation coefficient was employed to examine the presence of relationship between the variables used in the study. The suitability of the variables used in a study can be determined by the correlation analysis Gosh, (2015). From results on table 4.2, Capital adequacy ratio measured by total equity divided by total assets has negative significant correlation with management efficiency as revealed by correlation coefficient of -0.260. Asset quality ratio determined by dividing total non-performing loan by total loan illustrates a negative and significant correlation with management efficiency as shown by a correlation coefficient -0.0923. Liquidity shows a positive correlation with management efficiency which was statistically significant revealed by coefficient 0.388. There was also association between the independent variables.

TABLE 4.2
Correlation Analysis

Management efficiency	Capital adequacy	Asset quality	Liquidity
Management efficiency	1		
Capital adequacy	-0.260***	1	
Asset quality	-0.0923*	-0.0769	1
Liquidity	0.388***	-0.148***	-0.105*

* p<0.05, ** p<0.01, *** p<0.001

4.4 Diagnostic Tests

Panel data is referred as pooled time series is the pooling of the observations in a cross-section and time series data together which requires features of both time series and cross sectional the

three main models that are adopted in panel data analysis are; POOLs OLS, Fixed effect model and Random effect model.

4.4.1 Normality Tests

In order to determine the distribution of data used in the series, a normality test was conducted on panel data. This test establishes the extent of the normality of the variables to be analyzed. Shapiro wilks test was used to examine the normality of the variables. From results presented on table all the variables used in the study were normal. The relevant outcomes are presented in Tables 4.3 below.

TABLE 4.3
Shapiro-Wilk W Test for Normal Data

Variable	Obs	W	V	z	Prob>z
Management efficiency	600	0.79802	80.102	10.623	0.00000
Capital adequacy	600	0.33561	263.484	13.508	0.00000
Assets quality	600	0.97814	8.670	5.234	0.00000
Liquidity	600	0.64875	139.297	11.963	0.00000

4.4.2 Multicollinearity Test

Variance inflation factor was used to test the multicollinearity. VIF value of 1 shows that no multicollinearity is problematic, values between 1 to 5, is an indicator of reasonable multicollinearity and values greater than five depicts an extremely correlated variable in the study. The VIF is 1.03, which shows modest level of Multicollinearity (Gujarati & Greene2012).

TABLE 4.4

Multicollinearity Test

Variable	VIF	1/VIF (Tolerance)
Liquidity	1.04	0.964540
Capital adequacy	1.03	0.969445
Asset quality	1.02	0.980317
Mean	1.03	

4.4.3 Unit-Root Test for Panel Stationarity

Harris and Tzavalis (1999) test carried out to examine stationarity of variables used. Since the P-value of all variables was significant, null hypothesis was rejected and concluded that variables were significant hence no need of de-trending variables used in the study.

TABLE 4.5
Stationarity Test for Management Efficiency

Statistic	z	P-Value
0.3149	-4.1613	0.0000

TABLE 4.6
Stationarity Test for Capital Adequacy

Statistic	z	P-Value
0.1589	-7.6675	0.0000

TABLE 4.7
Stationarity Test for Asset Quality

Statistic	z	P-Value
0.1137	-8.6829	0.0000

TABLE 4.8
Stationarity Test for Liquidity

Statistic	z	P-Value
0.0093	-11.0304	0.0000

4.4.4 Serial correlation

The study employed a Wooldridge drunken test to check serial correlation. From the results obtained, serial correlation was present. However, serial correlation does not affect panel data with duration of less than 20 years in the dataset adopted as Wooldridge (2012) stated. The period of this study was 5 years only.

TABLE 4.9
Serial Correlation Test

Model	Dependent variable	F-value	P-Value
1	Management efficiency	39.107	0.0000

4.4.5 Pooled OLS Model or Random Effect model

According to Bell and Kelvyn, (2015). The model to adopt between random and Pooled, Breusch Pagan Lagrange multiplier (LM) test is used. The alternative hypothesis for this test is that the random effect model is suitable. Since the obtained p-value is significant, random effect model is suitable for this study

TABLE 4.10
Results for Breusch-Pagan LM Test

Dependent Variable	X²	P-Values
---------------------------	----------------------	-----------------

Management efficiency	1,055.75	0.0000
------------------------------	-----------------	---------------

4.4.6 Hausman test

This test is used to examine model adoption. The null hypothesis for this test is random model is suitable and alternative hypothesis fixed effect model is appropriate (Warue, 2019)

TABLE 4.11
Hausman Test

	fixed	random	Difference	S.E.
sqrt(diag(V_b-V_B				
Capital adequacy	-.0173821	-.0184488	.0010667	.
Asset quality	-.1095397	-.1124565	.0029169	.
Liquidity	.0006335	.0008358	-.0002023	.0000298
Chi Square 45.3	P-Value =0.00			

From results obtained, the p-value was significant, is less than 0.05 hence the null hypothesis is rejected, fixed effect model was appropriate for this study.

4.5 Fixed Effect model.

From the Hausman test, the study rejected the null hypothesis and concluded that the fixed effect model was appropriate to explain the relationship between capital adequacy, asset quality and liquidity on management efficiency of deposit taking SACCOS in Kenya and the fitted.

TABLE 4.12
Regression Results Output of Fixed Effect Model

Management efficiency	Coef.	Std. Err.	t	P> t
Capital adequacy	-.0173821	.0029612	-5.87	0.000
Asset quality	-.1095397	.0375741	-2.92	0.004
Liquidity	.0006335	.0002311	2.74	0.006
_cons	.0119908	.0006407	18.71	0.000

Number of obs = 600

Number of groups = 120

Obs per group: min = 5

R-sq: within = 0.0970

Between = 0.1933

avg = 5

Overall = 0.1675

max = 5

P-Value 0.0000

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \epsilon$$

Y_{it} = Management efficiency

$\beta_1 X_{1it}$ = Capital adequacy

$\beta_2 X_{2it}$ = Asset quality.

$\beta_3 X_{3it}$ = Liquidity.

ϵ = Random error.

β_0 = constant Intercept

$\beta_1, \beta_2, \beta_3$, = coefficient of regression model for the independent variable

Fitted equation from random regression model.

$$Y_{it} = 0.0119908 - 0.0173821X_{1it} - 0.1095397X_{2it} + 0.0006335X_{3it}$$

4.5.1 Asset quality Capital adequacy and management efficiency of DT-SACCOS

The study used Asset quality as the first variable; it was determined by dividing total non-performing loans by total loans. The results of statistical analysis indicated that Asset quality has a P value of 0.000 that is lower than 0.05 which is the expected standard; therefore, asset quality was significant for the study. The result indicates that Asset quality has an influence on management efficiency.

***H₀₁**: Asset quality has insignificant effect on management efficiency of DT Sacco's in Kenya.*

4.5.2 Liquidity and management efficiency of DT-SACCOS

The study used Liquidity as the third variable; it was determined by dividing total loan by total deposit. The results of statistical analysis indicated that Asset quality has a P value of 0.004 that is lower than 0.05 which is the expected standard; therefore, asset quality was significant for the study. The results indicate that Asset quality has an influence on management efficiency.

H₀₁: Asset quality does not have a significant effect on management efficiency of DT Sacco's in Kenya.

4.5.2 Capital adequacy and management efficiency of DT-SACCOS

The study used capital adequacy as the third variable; it was determined by dividing total equity by total assets. The results of statistical analysis indicated that capital adequacy has a P value of 0.006 that is lower than 0.05 which is the expected standard; therefore, capital adequacy is significant for the study. The result indicates that capital adequacy has an influence on management efficiency.

H₀₁: Asset quality has an insignificant effect on management efficiency of DT Sacco's in Kenya.

CHAPTER FIVE

SUMMARY CONCLUSION AND RECOMMENDATION

5.1 Introduction

This is the last chapter of the dissertation which presents the summary of the research findings, relevant deliberations, conclusion and the ideal recommendation. The overall purpose of this chapter is to state the result of the study by setting out the answers to the research question as drawn from the general and specific objectives of this research work which were; To ascertain

the effect of Asset quality to management efficiency of DT- SACCOs in Kenya. To examine the effect of liquidity to management efficiency of DT- SACCOs in Kenya. To assess the effect of capital adequacy to management efficiency of DT- SACCOs in Kenya. The summary of the study was done by the study with reference to the study objectives and the research hypothesis. On the basis of the study conclusion recommendations were drowned since the findings are not conclusive the study proposed areas of further research.

5.2 Summary

The study was done for the purpose of determining the effect of firm characteristics on management efficiency of deposit taking Sacco's in Kenya. Secondary data was used as a source of information for the study; the target population was active DT- SACCOs which were registered and fully compliant throughout the period of study. Secondary data was obtained from the audited financial statement of deposit taking SACCOs and supervisory reports from SASRA. Descriptive statistics was used in addition to correlation analysis to study the relationship between variables. Multiple regression analysis was done to develop the regression models relating the variables under study. The results of the above analysis stated that firm characteristics have influence on DT – SACCOs Management efficiency. The study findings for each variable were significant therefore there was correlation of the variables to management efficiency.

5.2.1 Asset quality Capital adequacy and management efficiency of DT-SACCOS

The study used Asset quality as the first variable; it was determined by dividing total non-performing loans by total loans. The results of statistical analysis indicated that Asset quality has a P value of 0.000 that is lower than 0.05 which is the expected standard; therefore, asset quality

was significant for the study. The result indicates that Asset quality has an influence on management efficiency.

H01: Asset quality has insignificant effect on management efficiency of DT Sacco's in Kenya.

The study findings concur with recent studies which have found existence of a significant relationship between asset quality and management efficiency; for example, a financial institution with lower level of non-performing loans reported a highly efficient banking operation. The study on credit risk management relationship to management efficiency on MFI's in Kenya with a special focus on establishing the relationship between loan loss provision coverage ratio (LLPCR) and Management efficiency Otieno et al, (2016). The study on effect of commercial banks in Kenya lending behavior on loan loss provision. The study was a census carried out on eleven listed commercial banks in Kenya. The study recommended that management of listed commercial banks in Kenya should put into consideration all loans and consider their quality prior to setting their loan loss provision to ensure adequate provision and accurate management efficiency evaluation Obuya et al, (2017). The study on the effect of the credit risk management system on the management efficiency of commercial banks in Uganda. The study found that credit risk management affects the management efficiency of commercial banks. The study recommends that commercial banks in Uganda must improve their techniques in credit risk management with a view of maintaining a qualitative asset portfolio with particular attention to loan loss provisioning, ensure proper screening of customers and credit worth with continuous monitoring after disbursement to completion of payment. The management must

ensure that proper records are maintained and that non-performing loans are adequately provided for in the financial statements Serwadda, (2018).

5.2.2 Liquidity and management efficiency of DT-SACCOS

The study used Liquidity as the third variable; it was determined by dividing total loan by total deposit. The results of statistical analysis indicated that Asset quality has a P value of 0.004 that is lower than 0.05 which is the expected standard; therefore, asset quality was significant for the study. The result indicates that Asset quality has an influence on management efficiency.

Ho1: Asset quality does not have a significant effect on management efficiency of DT Sacco's in Kenya.

The study agrees with Towo findings in his study on financial leverage and management efficiency of DT-SACCO's in Tanzania. He examined 115 DT-SACCO's licensed and operational in Tanzania the study was carried out for a period of four years 2011- 2014. The study's main focus was on the effect that leverage has on management efficiency with moderating factor management board resolutions on debt. Secondary data was derived from Sacco's financial statements, the study used a fixed effect model to analyse the data. The study found that financial leverage had a negative and significant relationship to management efficiency of DT-SACCO's whereas board meetings had significant and positive moderating effect on DT-SACCO's financial leverage. The study concluded that DT-SACCO's should focus on member deposit and capital contribution and avoid debt as a source of operating capital which is expensive and reduces profit margins. Adequate appraisal of financing at management level was also recommended Towo, (2022). The study on effect of bank liquidity to management

efficiency of commercial banks in Morocco, the study looked into liquidity risk and focused on several liquidity indicators which include; Liquidity ratio, bank size, external funding to total liabilities, share of banks capital in banks total assets, foreign direct investment. The study was carried out over a period of twelve years 2001-2012. Data was corrected from all licensed commercial banks in the period of study panel data regression was used to analyse the relationship between liquidity and management efficiency of commercial banks in Morocco. The study found that there is dependency between bank performance and liquidity in addition to firm size. The results indicated that liquid banks are not essentially more efficient than illiquid banks but these parameters are more pronounced in periods of financial crisis. The study concluded that bank size and liquidity are vital indicators of commercial banks performance in Morocco Ferrouh, (2014).

5.2.3 Capital adequacy and management efficiency of DT-SACCOS

The study used capital adequacy as the third variable; it was determined by dividing total equity by total assets. The results of statistical analysis indicated that capital adequacy has a P value of 0.006 that is lower than 0.05 which is the expected standard; therefore, capital adequacy is significant for the study. The result indicates that capital adequacy has an influence on management efficiency.

Ho1: Asset quality has an insignificant effect on management efficiency of DT Sacco's in Kenya.

The study concurs with the findings on the research about capital adequacy effect on management efficiency of commercial banks in Kenya observed that capital adequacy is regulators grid reference a key area of concern to ensure that financial institutions have enough capital to cover risks carried. The study was carried out on commercial banks in Kenya from the population of 42 Banks a survey was conducted and secondary data was corrected from the banks financial statements the study applied descriptive statistics to analyze the data and linear regression to form the relationship that exist between the dependent and independent variables; capital adequacy, bank size, asset quality, liquidity, management quality and return on equity respectively. The study found that capital adequacy had had a negative and significant impact on return on assets of commercial banks in Kenya. The study concluded that management of commercial banks should ensure that they have enough capital to sustain sufficient capital adequacy ratio Musyoka, (2017).

5.3 Conclusion

With reference to the research findings and interpretation above the study concluded that firm characteristics affect management efficiency of DT- SACCOS. Study variables; asset quality, liquidity and capital adequacy present a good measure of firm characteristics in DT – SACCOS in Kenya. In addition, the study concludes management of deposit taking SACCO's in Kenya were not solely responsible for inefficiency but other factors contributed to efficiency. Liquid Sacco's

5.4 Recommendations

The study recommends that DT- SACCO's should effectively manage borrowers to ensure that they have adequate returns for the capital invested. To achieve this goal a prudent credit risk management policy must be put in place to provide checks and balances on management decisions which affect interest income earned, consequently, affecting asset quality. Members should be informed on the impact of defaulting on loans borrowed because it ultimately affects earnings on their capital that is if they pay their loan installments in time. The regulatory authority should intensify monitoring of DT- SACCO's firm characteristics which caused management inefficiency

5.5 Recommendations for Future Research

This study suggests that future research be done on matters affecting management efficiency since efficiency is an important aspect of stability in Deposit taking Sacco's. This study recommends that further study be done with several more years that is a longer period; for example, ten years and the study be done on the entire population. In addition, the study suggests other measures of management efficiency be applied.

This study applied multiple regression models' subsequent studies should apply different type of data analysis for example data envelopment analysis. Future studies should apply different measures of the research variables to provide an opportunity for comparison.

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