

**INFLUENCE OF CAPITAL ADEQUACY ON EFFICIENCY OF DEPOSIT TAKING
SACCOS IN NAIROBI COUNTY**

BY

FANCY CHEPKEMOI

D61/39115/2021

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

NOVEMBER, 2023

DECLARATION

I declare that the work contained in this project is my own work and has not been presented in any other University for certification.

..........

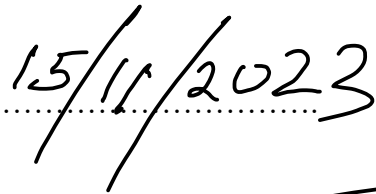
.....14/11/2023.....

Fancy Chepkemoi

D61/39115/2021

This research project has been submitted for examination with my approval as the supervisor.

..........

..........

Supervisor,

Prof. Mirie Mwangi

Department of Finance and Accounting

University of Nairobi

ACKNOWLEDGEMENT

A special thanks to my supervisor Prof. Mirie Mwangi, for his guidance, insight and encouragement in the writing and compilation of this study. Your invaluable support and patience throughout this journey has been real and is appreciated from the bottom of my heart. To my classmates and friends without whose interest and co-operation I could not have produced this study. I wish to thank them for supporting this initiative and affording me their time and sharing their experiences. Finally, I thank my family for instilling in me unquestionable values and morals, thank you for your love, guidance and for always believing in me throughout the year.

DEDICATION

I dedicate this research study to my loving parents, for always being with me throughout my academic journey. All that I am, I owe to you my parents. Thank You. I also dedicate to my siblings for their constant encouragement as well as my son for being patient enough to see me go through my academic struggle thus realizing my long cherished dream.

TABLE OF CONTENTS

DECLARATION.....	ii
ACKNOWLEDGEMENT	iii
DEDICATION	iv
LIST OF TABLES	viii
LIST OF FIGURES	ix
LIST OF ABBREVIATIONS	x
ABSTRACT.....	xi
CHAPTER ONE	1
INTRODUCTION.....	1
1.1. Background of the Study.....	1
1.2. Research Problem	7
1.3. Objective of the Study	9
1.4. Value of the Study	9
CHAPTER TWO	11
LITERATURE REVIEW	11
2.1. Introduction	11
2.2. Theoretical Framework	11

2.3. Determinants of Efficiency of SACCOs	13
2.4. Empirical Review	15
2.5. Conceptual Framework	18
2.6. Summary and Research Gaps.....	18
CHAPTER THREE	20
RESEARCH METHODOLOGY	20
3.1. Introduction	20
3.2. Research Design	20
3.3. Target Population.....	20
3.4. Data Collection Instrument	21
3.5. Data Analysis.....	21
3.6. Diagnostic Tests	23
CHAPTER FOUR.....	25
DATA ANALYSIS, RESULTS AND DISCUSSION.....	25
4.1 Introduction	25
4.2 Descriptive Statistics.....	25
4.3 Diagnostic Tests	27

4.4 Correlation Analysis	29
4.5 Regression Analysis.....	30
4.5 Discussion of Findings.....	34
CHAPTER FIVE: SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS	36
5.1 Introduction	36
5.2 Summary of Findings.....	36
5.3 Conclusion.....	37
5.4 Recommendations.....	38
5.5 Limitation of the Study	39
5.6 Suggestions for Future Research	40
REFERENCES.....	41
<i>APPENDIX I: DT-SACCOS IN NAIROBI COUNTY</i>	46
<i>APPENDIX II: DATA COLLECTION SHEET</i>	48

LIST OF TABLES

Table 4.1: Descriptive Statistics	25
Table 4.2: Test for Multi-Collinearity.....	27
Table 4.3: Breusch-Pagan test for Heteroscedasticity.....	28
Table 4.4: Autocorrelation Test	29
Table 4.5: Correlation Analysis	29
Table 4.6: Model Summary	31
Table 4.7: ANOVA ^a	31
Table 4.8: Coefficients	32

LIST OF FIGURES

Figure 2.1. Conceptual Framework.....	18
---------------------------------------	----

LIST OF ABBREVIATIONS

ANOVA	Analysis of Variance
ATM	Automated Teller Machine
CAR	Capital Adequacy Ratio
DMB	Deposit Money Banks
DTS	Deposit Taking Saccos
FOSAs	Front Office Service Activity
LTA	Log of Total Assets
ROCA	Rotating savings and credit association
SACCO	Saving and Credit Cooperative Organization
SASRA	Sacco Societies Regulatory Authority
SPSS	Statistical Package for the Social Sciences

ABSTRACT

The main goal of the majority of financial entities is long-term survival and success. However, maintaining adequate quantities of money for operational existence is necessary for firm survival. When a business entity lacks sufficient capital levels, operational interruption has the potential to negatively impact an entity's corporate performance. The objective of the study was to examine the influence of capital adequacy on efficiency of deposit taking Sacco's in Nairobi County. The study was based on Capital Buffer Theory and Market Power Theory. The study utilized descriptive research design. The target population for the current study was all DTS in Nairobi County. There are a total of 44 DTS in Nairobi City County, according to the SASRA (2022) report. The DTS in Nairobi County served as the unit of analysis, and the Head of Finance and Investments at the DTS served as the unit of observation. A data collection sheet was used to gather and organize the data. Secondary data was acquired from financial reports for a period of five years (2018-2022). The collected data was analyzed the data in order to facilitate interpretation. The study used multiple linear regression equation to establish the relationship between the independent and dependent variables. Using the statistical analysis software, SPSS version 24, a multiple regression model utilized to examine the accuracy of the data collected. Additionally, data was displayed tables and qualitatively assessed using the literature review from chapter two as a guide. Prior to performing a regression analysis, statistical assumptions checks were carried out. The diagnostic tests validated the fundamental assumptions of the regression model. The diagnostic tests for this study were multicollinearity and heteroscedasticity and autocorrelation test. The study found a statistically significant relationship between capital adequacy and the efficiency of deposit taking saccos in Nairobi County. The study found a strong correlation between efficiency of deposit taking saccos in Nairobi County and credit risk. The study concludes that for every unit increase in management quality, deposit accepting Sacco's in Nairobi County should anticipate a five-fold increase in efficiency. The study recommends that Nairobi County's deposit-taking SACCOS implement advanced capital allocation techniques. This includes a thorough assessment of risk profiles associated with their loan portfolios, investments, and other financial activities. This practice ensures that resources are allocated to areas that require them most, thereby improving overall operational efficiency.

CHAPTER ONE

INTRODUCTION

1.1. Background of the Study

Stakeholders have continually expressed serious concerns about the maintenance of effective corporate performance across a variety of industry areas at both the micro and macro levels, (Chioma, 2021). The reason behind this is that it is challenging to meet all the priorities of the different stakeholders with regard to sales growth, value creation, return on investments as well as the social and environmental responsibility. Having enough money to ensure that the firm performs as it should allow for the maintenance of efficient corporate performance. This indicates that having sufficient and readily available cash to conduct business is a crucial component of any corporation. If businesses don't manage their capital well, they risk going out of business (Melani et al., 2019). Within the deposit-taking SACCOs, capital sufficiency has been employed as a metric of success. Due to capital adequacy requirements, each SACCO society must keep an amount of capital sufficient to shield member deposits and creditors from losses resulting from business risks.

The study will be guided by Capital Buffer Theory and Market Power Theory. The capital buffer theory states that most financial institutions maintain capital ratio levels above the bare minimum demanded by regulatory authorities. The term buffer capital refers to this extra money. Organizations may increase their capital with an aim of lowering risk because regulatory authorities severely penalize firms that do not maintain the minimum required amount. According to the market power theory, entrance barriers are a key factor in determining how

profitable a corporation is. The idea contends that high entry barriers make it simpler for current businesses to preserve monopoly profits. Strict rules are one type of entry barrier. In terms of the capital adequacy criterion, SASRA aims to safeguard the interests of investors and members. The market power theory states that SACCOs with a dominant position are more likely to experience increased efficiency.

SACCOS are crucial in Kenya for bridging the macro-to-micro finance divide. SACCOs are essential in helping Kenyans save money and obtain loans at rates that are significantly lower than those offered by traditional banks. The achievement of vision 2030 is significantly aided by SACCOs (Almazari & Alamri, 2017). SACCOs created FOSAs in response to the rising need for intermediate banking facilities by providing front office services comparable to those of banks. As a result, the SACCOs were subject to the commercial risks associated with financial institutions. As some SACCOs were unable to reimburse member deposits when requested because members refused to consistently contribute shares or pay back loans given to them, liquidity became the main problem (Onyango, 2018). The payment of unearned income led to capital depletion. To protect the creditors from risks SACCO Society must maintain a suitable amount of capital (Nyanyuki et al., 2022). The goal of this study is to determine how effectively Saccos in Nairobi County that take deposits are affected by having enough capital.

1.1.1. Capital Adequacy

Capital adequacy refers to the amount of capital that is in reserve for a particular financial institution. Adequate capital is the most significant factor which helps in the stabilization and viability of financial institution (Almazari & Alamri, 2017). A deposit-taking institution is said

to be negatively capitalized when it lends more money than it has in deposits. A situation like this could result in the deposit-taking institution filing for bankruptcy. A financial institution's capital base acts as a safeguard against any business disruption brought on by unanticipated losses that could expose depositors' funds. Given the high level of risk and unpredictability in which banks operate, this is crucial. Financial institutions encounter losses which are expected and as a result these losses have little impact because the institutions may take protective measures.

Financial institutions additionally experience unforeseen losses, the number and frequency of which are unknown, but the impact of which is typically substantial (Almazari & Alamri, 2017). The regulatory authorities keep an eye on the capital adequacy levels of financial institutions to help reduce these losses. The variables used to determine capital adequacy include the log of total assets (LTA), shareholder's equity to total assets, overhead expenses to total assets, non-interest income to total assets, loans to total assets, and total revenue to total number of employees (Otwani, Namusonga, & Nambuswa, 2017).

1.1.2. Efficiency of SACCOS

Efficiency refers to the capability of a business to generate products and services within the time frame and money allocated to produce them. Efficiency is important to organizations since it is directly related to gainfulness (both present and future), intensity, and dissolvability (Aggrey et al. 2010). Administrative authorities demand the same of organizations in the provision of financially astute services and goods. The interests of all the stakeholders in a company should be met. According to partner hypotheses, the primary driving force behind a firm is the amplification of wealth (Berger & Humphrey, 2017). Only when a company increases its

profitability while using fewer inputs can it be claimed to be efficient. A company should make sure that it uses best practices in all aspects of its operations if it wants to attain high levels of efficiency (Sinani, Jones & Mygind, 2017).

There have always been heated discussions concerning what counts as input and output, especially in the financial sector. The size of the firm, nature of technology, the risk to credit, and competition are among the important variables that are used to evaluate a firm's efficiency. These variables affect efficiency of deposit taking Sacco's in Nairobi County, which in turn affects how efficient a firm is. Technology has significantly increased DTs' effectiveness. The SACCO industry has kept up with technological advancements that have made it easier to conduct financial transactions. Globally, the number of fraudulent transactions on ATMs has significantly decreased after the switch from magnetic stripe to chip cards (Nyanyuki et al. 2022).

1.1.3. Capital Adequacy and Efficiency of SACCOS

Efficiency and capital efficiency have a positive link since more equity acts as a safety net in the event of future losses (Barth et al., 2016). Due to their ability to spread out fixed expenses due to their vast economies of scale, large companies have lower average costs. As a result, performance and, consequently, efficiency, increase. From a long-term perspective, the banks must increase their lending sizes at specific rates in order to support the continued economic growth because Kenya's economic growth is heavily dependent on the availability of credit. They will therefore have to augment their capital in order to meet the legal criteria for the Capital Adequacy Ratio (CAR).

According to Pasiouras (2018), market discipline, stronger supervision, and stricter capital adequacy all support technological efficiency. Only the latter, though, is important. A bank that has insufficient capital increases its risk of failing, whereas a bank that has too much capital incurs unnecessary costs and may make the banking system less effective. Additionally, conflicting predictions are made by economic theory regarding how regulatory and supervisory policies will affect banks' performance (Barth et al., 2016).

Increasing banks' liquidity and solvency is the aim of financial regulation. Although bank efficiency may not benefit from stricter regulation, bank stability may. In their 2016 study, Barth, Caprio, and Levine explore the factors that influence and govern banking regulation. According to their research, stricter regulations and capital adequacy requirements do not increase bank efficiency. Barth et al. (2016) presented a number of arguments in favor of and against limiting bank operations. Overall, though, their findings suggested that constraining banks might increase the likelihood of a banking crisis as well as reduce bank efficiency.

1.1.4. Deposit Taking SACCOs in Nairobi County

SACCOs are termed as institutions which are owned by members whose main function is to marshal funds from the members and later offer credit services to its members in form of loans. Another function of the SACCOs is to nurture members on how well to utilize their cash in the right way possible. The members are advised on how well they can venture their cash into the right investments which will be significant in the near future. SACCOs have been established both in urban and rural areas. In towns the SACCOs have been established by individuals who

are wage and salary earners while in the rural areas the farmers have formed SACCOs to help them market their products.

SACCOs have been seen as the right channels for mobilization of funds as well as extension of credits. SACCOs take money in form of deposits and later offer loans to members depending on the savings made. The cooperatives gain their revenue from the interest paid on loans paid by the members. Cooperatives have been used by the government to mobilize funds and other resources which are put to the right use. They mobilize funds which help in the development and progress of the economy. Mostly SACCOs have been manifested in the rural areas where most of the low income earners reside and whose main economic activity is agriculture.

Nairobi County is home to several SACCOs with substantial memberships, thus it is necessary to conduct research in a few of them in order to acquire pertinent data that will help managers and academics, among others, make educated decisions. The devolution of the cooperative sector took place in 2013 in conformity with the 2010 Kenyan Constitution. One of Kenya's 47 counties, Nairobi County is the second-smallest and is located in the nation's capital. It has 42 DT-Sacco headquarters, which is the most number. The next counties, with 14, 12, and 8 DT Saccos head offices each, are Kiambu, Meru, and Nyeri.

Aside from the headquarters, the county is home to 33 established branch networks (SASRA Website, 2022). Through the supply of money, the Sacco society in particular is anticipated to significantly assist to the achievement of the affordable housing target (SASRA annual report, 2022). The DT-Saccos face fierce competition from companies that offer comparable goods. These DT-Saccos' capacity to endure this rivalry depends on the ways in which their strategy is

put into practice in order to provide them a competitive edge. Because there are so many DT-Sacco headquarters there, Nairobi County was chosen for the study's research area. The study's findings may be extrapolated to other counties.

Every depositing Nairobi County SACCO Society is required to keep a level of capital that is high enough to protect member deposits and creditors from losses brought on by business risks that the SACCO, as a financial organization, encounters. The dangers associated with credit, investments, laws, liquidity, interest rates, and competitiveness are all mentioned here. As a result, having adequate capital contributes to the efficiency of the institution and increases public confidence in it, which are indicators of a financial institution's safety and soundness. A SACCO Society must always have a minimum core capital of Ksh. 10 million (ten million shillings). A license cannot be issued until this is satisfied. The Authority will continuously monitor a SACCO Society's capital levels, and it may conduct periodic reviews.

1.2. Research Problem

One of the main goals of the majority of financial entities is long-term survival and success (Torbira & Zaagha, 2016). However, maintaining adequate quantities of money for operational existence is necessary for firm survival. When a business entity lacks sufficient capital levels, operational interruption has the potential to negatively impact an entity's corporate performance (Jamil & Said, 2018). However, when correctly determined and implemented, it has the potential to promote enhanced organizational performance while acting as a buffer to reduce company fluctuations, losses, or failures. Financial institution must maintain sufficient levels of capital in order to protect depositor funds and sustain business operations.

Regulatory actions and pressures have a significant impact on this position (Dao & Nguyen, 2020). For the Savings and Credit Cooperative Organization, things are less apparent. Kenya has the largest SACCO sector in Africa and ranks seventh globally. 20% of Kenya's savings are held in SACCOs, demonstrating SACCOs importance of SACCOs on social progress. SACCOs are essential in helping Kenyans save money and obtain loans at rates that are significantly lower than those offered by traditional banks. However, SACCOs in Kenya have had difficulties due to insufficient capital. The SACCOs was not exempt from the financial institution-related business risks as a result. The main issue was liquidity since several SACCOs were unable to immediately pay member deposits due to members' refusal to regularly pay their loans on time. this made the capital to be depleted as a result of unearned income payments.

Numerous research on capital sufficiency and effectiveness have been done. Globally, Nguyen et. al., (2017) did a research on capital adequacy influence on performance of DMBs in Vietnam. Amahalu (2017) investigated how capital adequacy affected the performance of a few deposit money banks (DMBs). Pradhan et al. (2017) did a research on how capital adequacy influences Nepalese commercial banks financial performance. Yulianti et al. (2018) examined how bank size influence the performance of non-performing loans in Indonesian public banks. Nwankwo (2019) did a research to establish the effect of capital adequacy on commercial bank performance in Nigeria.

Locally, Ngui and Jagongo (2017) did a study on the impact that capital sufficiency on the corporate performance of a sample of thrift and cooperative societies operating in Kenya. Barus et al. (2017) conducted a study to find out how capital adequacy influences SACCOs financial performance in Kenya. Mutumira (2019) conducted a study to find out how capital adequacy

influences financial performance of insurance businesses in Kenya. Wambua et al. (2021) did a research on capital adequacy influence on the lending performance of DTS in Kenya. Nyanyuki et al. (2022) did a study effect of capital adequacy on commercial bank performance in Kenya.

The aforementioned studies make it clear that the majority of the historical research evaluated above have methodological and contextual deficiencies. None of them has done a thorough analysis of the connection between DT Sacco's capital adequacy and efficiency, as would be done in this paper. Additionally, the majority of studies have concentrated on the banking industry, which has different structural characteristics from Saccos. By using a broader approach in context and research design approach, the current study aims to close these conceptual and methodological gaps. The study will achieve this by answering the question: what is influence of capital adequacy on efficiency of deposit taking Sacco's in Nairobi County?

1.3. Objective of the Study

The objective of the study was to examine the influence of capital adequacy on efficiency of deposit taking Sacco's in Nairobi County.

1.4. Value of the Study

The study's findings will assist various parties and advance a number of areas. Various theories in the fields of finance and economics have been established to comprehend the type, scope, and strength of the connection between capital adequacy and performance. The bulk of ideas look at how businesses decide between debt and equity financing and how this affects how well they perform. These theories are built upon the firm's capital structure theories. This study examines a

number of theories in an effort to assess them critically, add to them, and close any gaps in the theories' postulates.

The study's conclusions will give management a framework for ensuring adherence to both the internal and regulatory compliance restrictions. The management will have the ability to decide how to best use the capital assets to achieve optimal effectiveness. The results of this study are anticipated to assist regulatory agencies like the Ministry of Finance, SASRA, and CBK in formulating policies. The research will aid in identifying the precise effects of a certain amount of capital on the effectiveness of DTSs in Nairobi County, Kenya. This knowledge will help to ensure that the DTSs fulfill their necessary duties in realizing Kenya Vision 2030. Academics interested in the topic both inside and outside of Kenya will find the study useful.

CHAPTER TWO

LITERATURE REVIEW

2.1. Introduction

The literature on capital adequacy and efficiency is presented in this chapter. The chapter also presents the theoretical framework, empirical review, conceptual framework as well as the summary and research gaps.

2.2. Theoretical Framework

Saunders, Lewis, and Thornhill (2015) define a theory as an integrated definition, concept, and proposition that offers a systematic viewpoint on occurrences or conditions by establishing linkages between the research variables. This study was based on the following two theories: Capital Buffer Theory and Market Power Theory as discussed below.

2.2.1. Capital Buffer Theory

The proponents of capital buffer theory were Marcus 1984, Milne and Whalley 2001. The theory states that a bank's risk can be reduced by having more capital than is necessary (Jokipii and Milne, 2011). The theory further states that a capital buffer may improve bank performance by lowering the rate of lending, which raises the demand for loans. By encouraging the development of countercyclical buffers, regulations aimed at increasing adequate capital buffers aim to lessen lending's procyclical tendency (Von Thadden, 2004).

Capital buffers refers to that extra capital that is retained in the bank which is more than the law requires (Jokipii & Milne, 2011). According to the theory those banks with adequate capital buffers wish to preserve them, while those with smaller ones seek to raise capital in order to build respectable capital buffers. The likelihood of failure is decreased since more capital has a tendency to absorb negative shocks (Rime, 2001). In order to maintain their capital cushion, banks boost capital when portfolio risk increases which are thought to be related to performance of the bank and its capital adequacy (Laeven & Levine, 2009).

This theory is applied to this study in that it asserts that Saccos maintain levels of capital ratios over the minimal levels needed by the regulatory authorities. Organizations may increase their capital with an aim of lowering risk because regulatory authorities severely penalize firms that do not maintain the minimum required amount.

2.2.2. Market Power Theory

The proponent of market power theory was Lerner in 1934. According to Lerner, a company with market dominance would set prices above marginal costs and collect economic rents at the expense of consumers, a practice known as "deadweight loss" in economics. According to the market power theory, entrance barriers are a key factor in determining how profitable a corporation is. The idea contends that high entry barriers make it simpler for current businesses to preserve monopoly profits. Strict rules are one type of entry barrier. According to the market power theory, companies merge in order to reduce output or work together to increase their capacity to determine product prices.

Firms with market dominance have the authority to take unilateral anti-competitive actions. Legislation now acknowledges that corporations with market strength may occasionally harm the competitive process (Asuma, 2022). Businesses that control a large portion of the market are particularly accountable for predatory pricing, limit pricing, holding onto excess capacity, and strategic bundling. Having a substantial market share is a common way for a firm to display its power, but it is not sufficient to show that the company truly possesses significant market power. This is because highly concentrated marketplaces may be contestable in the absence of entrance or exit obstacles. This inexorably limits the incumbent company's capacity to increase its prices above those of the rivals.

A company with a substantial market share may be able to set up obstacles for potential competitors and regulate market prices to maintain a certain profit margin (Barth et al., 2016). The theory is used in the study because it contends that SASRA seeks to protect members' and investors' interests with relation to the capital adequacy criterion. Market share dominance increases the likelihood that SACCOs will perform better or operate more efficiently.

2.3. Determinants of Efficiency of SACCOs

An organization's efficiency levels can be explained by a variety of elements some of which are internal to the organizations and they include the expertise of the manager, worker experience, and skill level. The performance of businesses and, subsequently, company efficiency, have been found to be influenced by a number of factors (Sinani et al., 2007). Firm trade orientation, fixed capital investment, soft budget restrictions, labor quality, and competitiveness are a few of these

factors. Soft budget limits will presumably result in lower levels of efficiency, but because there is a lack of reliable data to evaluate them, it is challenging to determine their consequences.

A few elements that affect efficiency are capital, business size, credit risk, and management quality (Ab-Rahim *et al.*, 2018). The same elements highlighted by Ab-Rahim et al. (2018) will therefore be taken into account in this inquiry. The equity to total asset ratio will be used to determine capital, the loans to members to total asset ratio will be used to assess credit risk, and the non-interest costs to total asset ratio will be used to measure management quality. Since the SACCO's total assets are used to normalize the other dependent variables under discussion, size will be calculated as the total assets logarithm.

2.3.1. Capital Investment

Investing in new machinery or technology can help businesses enhance output, reduce costs, and increase efficiency. According to Almazari and Alamri (2017), these kinds of investments may also raise the calibre of the commodities produced. Over time, capital expenditures may result in decreased costs. For instance, a new piece of equipment might use less energy than an older model, which would save on electricity costs. Torbira and Zaagha (2016) state that new technology that speeds up procedures could lead to a reduction in the requirement for manual labour. Finally, when comparing the initial capital investment outlay with the ongoing, long-term cash outlay of a recurring expense, businesses may decide that the long-term discounted cash flow is better. Businesses may also gain a competitive edge by making long-term asset investments (Otwani, Namusonga, & Nambuswa, 2017). Over time, this can help the company hold onto its market share by making it more difficult for competitors to surpass it. A corporation

may construct an entry barrier that rivals cannot get around or compete against if it is ready to take a chance and make a significant investment to improve its business (Jamil & Said, 2018).

2.4. Empirical Review

Studies have been done to establish how capital adequacy affects firm efficiency. However, as SACCOs' functions have evolved over time the capital adequacy has become essential. Various empirical studies are presented below.

Pradhan et al. (2017) did a research on how capital adequacy influences Nepalese commercial banks financial performance. The study utilized secondary data. The research's conclusions show that the effectiveness of the bank's operations and the ratio of total deposits to total assets are the main determinants of the financial success of commercial banks in Nepal. A number of factors, including loan ratios, deposit-to-asset ratios, loan loss provisions, and equity-to-deposit ratios were found to have a significant influence of commercial bank performance.

Yulianti et al. (2018) examined how bank size influence the performance of non-performing loans in Indonesian public banks. The secondary data came from the Bank Indonesia financial statements, which were made public. A series of hypotheses were tested in the study. Utilizing a deliberate sampling strategy, the 81 final samples for this inquiry were gathered. Panel data estimation was also used. The study results indicated that non-performing loans are favorably impacted by the capital adequacy ratio while being negatively impacted by the ratio of loan deposit and bank size.

Nwankwo (2019) did a research to establish how capital adequacy influence the financial performance of commercial banks in Nigeria. The study findings indicated that Owner's Equity

(OE) has a favorable effect on the Nigerian commercial banks' net interest income, which is zero. This study also demonstrated a substantial and positive correlation between loans and advances and the commercial banks in Nigeria's net interest income.

Iskandar, (2020) conducted a research to find out the relationship between ratio of capital adequacy and Indonesia banks performance. The sample was chosen from a total of 15 banks that fit the requirements. Secondary data for listed banks for a duration of 3 years from 2016 to 2018 was utilized to test the study hypothesis. The findings established that capital adequacy had a significant effect on stock return of commercial banking businesses.

Mbaeri et. al., (2021) did a study with a view of examining how capital adequacy ratio influence the performance of the listed commercial banks in Nigeria. Panel regression was utilized to test the relationship among the variables. The study discovered that the Nigerian listed commercial banks' return on capital employed was significantly and favorably impacted by the ratio of capital adequacy.

Barus et al. (2017) conducted a study to find out how capital adequacy influences SACCOs financial performance in Kenya. The 83 SACCOs that were still operating as of 2015 were the study's sample size. Census sampling design was utilized in the study. The study used both primary and secondary data for the purposes of analysis. From the findings it was established that capital adequacy and performance had a relationship which was significant.

Onyango (2018) examined the influence of capital adequacy on financial performance of DTS in Meru County, Kenya. The study utilized pane regression to establish the relationship among the variables. Using STATA 14.0, the regression equation was computed. From the findings it was

established that core capital and total asset ratio had significant negative influence of return on assets.

Mutumira (2019) conducted a study to find out how capital adequacy influences financial performance of insurance businesses in Kenya. The sample size was 46 insurance companies. To qualify for participation in the study the insurance companies had to have complete financial accounts for the previous five years. panel regression model was utilized in the study to establish the relationship among the variables. From the findings it was established that insurance firms have a positive return on assets (ROA). In addition, the insurance companies were found to have quality assets that enabled them to make a sizable profit.

Wambua et al. (2021) did a research on capital adequacy influence on the lending performance of DTS in Kenya. Data was gathered from five years' worth of audited financial accounts that were submitted to SASRA (2013–2017). The study utilized the regression analysis to establish the relationship among the variables. Results indicate that in Kenya, deposit-taking SACCOs' lending performance is highly influenced by capital sufficiency.

Nyanyuki et al. (2022) did a study with a view of examining the influence of capital adequacy on listed commercial banks performance in Kenya. The study employed correlational methods. The study utilized a sample of 10 commercial banks which were selected using the purposive sampling technique. Secondary data for the years 2015 through 2019 was obtained from the Nairobi Stock Exchange. The study discovered a negative relationship between the commercial bank's financial performance and the capital adequacy determinants.

2.5. Conceptual Framework

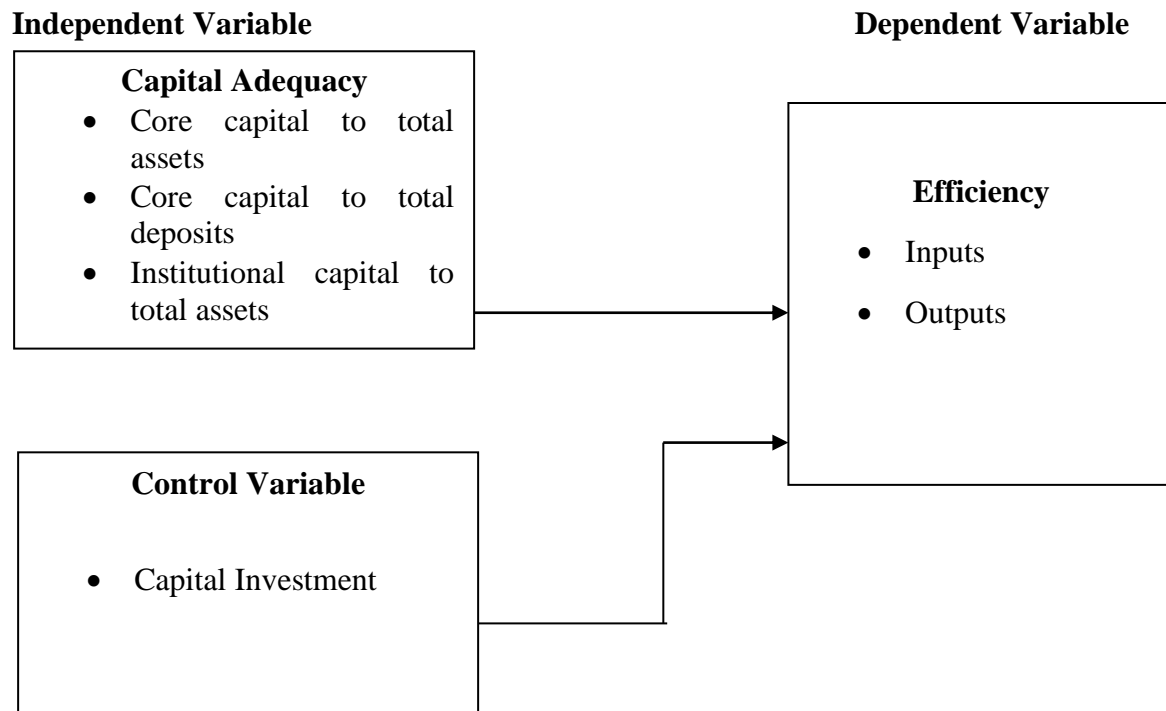


Figure 2.1. Conceptual Framework

Source: Researcher, (2023)

2.6. Summary and Research Gaps

This chapter has examined current theories that are pertinent to the research. Market power theory and the capital buffer theory were reviewed in this chapter. The capital buffer theory explains why banks want to maintain capital stock levels that are equal to or higher than those required by regulatory bodies. According to the market power theory, entrance barriers are a key factor in determining how profitable a corporation is. The idea contends that high entry barriers make it simpler for current businesses to preserve monopoly profits. Strict rules are one type of

entry barrier. These two theories explain how the independent and dependent variables are connected. The empirical studies have been conducted on capital adequacy and efficiency. However, the studies conducted have methodological and contextual deficiencies. None of them has done a thorough analysis of the relationship between DT Sacco's capital adequacy and efficiency, as would be done in this paper. Additionally, the majority of studies have concentrated on the banking industry, which has different structural characteristics from Saccos.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1. Introduction

This chapter presents the methodology the researcher utilized to achieve the objectives of the study. They include the research design, the study population, the study sample, instruments for data collection, analysis of data as well as the diagnostic tests.

3.2. Research Design

The study utilized descriptive research design. This design involves a practice of gathering study data so as to be able to test the hypothesis (Mugenda & Mugenda, 2003). This design was suitable under this study as it made it possible for the researcher to make use of few variables while undertaking the current study. In addition, the research design was also very useful under the current study since it will enable the researcher to answer various questions pertaining to how, who and what about the study (Saunders, Thornhill & Lewis, 2009). Further, the research design was useful under the current study as it made it possible to consider various issues such as economy of the design, effective turnaround in gathering study data, thus, helping in giving out a clear picture of the already existing research situations.

3.3. Target Population

Neuman (2010) defines target population as a precise population from which a researcher aims to obtain data to be used in the study. The target population being considered under a given study must possess similar characteristics upon which a researcher aims to draw the sample from for

generalization purpose. The target population for the current study was all DTS in Nairobi County. There are a total of 44 DTS in Nairobi City County, according to the SASRA (2022) report. The DTS in Nairobi County served as the unit of analysis, and the Head of Finance and Investments at the DTS served as the unit of observation. Census sampling method was utilized to obtain the sample size. Census is normally utilized in order to obtain a detailed review of the existing reviews or experiences. Under the current study, the target population was small, thus, it was essential to use the entire population. This therefore resulted into 44 DTS within Nairobi City County.

3.4. Data Collection Instrument

A data collection sheet was used to gather and organize the data. data was obtained from financial reports for a period of five years (2018-2022). Secondary data is preferred since obtaining it is very simple and clarification on research is comprehensive. The secondary data was derived from the 44 Deposit Taking Saccos' published audited financial statements. Secondary data from the yearly financial statement is valid because every company is obligated by law to disclose in their annual reports how closely they adhered to the performance guidelines. The research will span the years 2018 through 2022. The 44 Deposit Taking Saccos provided secondary data for the study using a checklist (Appendix II).

3.5. Data Analysis

The collected data was analyzed the data in order to facilitate interpretation. The data analysis helped to see if the study objectives have been met. The study used multiple linear regression

equation to establish the relationship between the independent and dependent variables. This was performed using multiple regression model indicated below.

$$Y_{t_1} = \beta_0 + \beta_1 X_{1t_1} + \beta_2 X_{2t_1} + \beta_3 X_{3t_1} + \beta_4 Z_{1t_1} + \varepsilon$$

Where,

Y_{t_1} = Efficiency as measured by input to output ratio which should be ≤ 1

β_0 represents Constant.

X_1 = Capital (Core Capital / total assets)

X_2 = Credit Risk (Non-performing Loans / gross loans)

X_3 = Management quality (non-interest expense / total assets)

Z_1 = Capital Investment

$\beta_1, \beta_2,$ and β_3 = Regression Coefficients

t=times series

ε - Error term

Using the statistical analysis software, SPSS version 24, a multiple regression model utilized to examine the accuracy of the data collected. Additionally, data was displayed in graphs and qualitatively assessed using the literature review from chapter two as a guide.

3.6. Diagnostic Tests

Prior to performing a regression analysis, statistical assumptions checks will be carried out. The diagnostic tests validated the fundamental assumptions of the regression model. The diagnostic tests for this study were multicollinearity and heteroscedasticity and autocorrelation test.

3.6.1. Multicollinearity Test

The goal of this test is to identify multicollinearity issues that, if left unchecked, might result in unstable parameter estimators, making it more challenging to evaluate and interpret how independent variables affect the dependent variable (firm value). The variance inflation factor (VIF) in the SPSS program was used to find problems with multicollinearity in the model created from the study variables. A multicollinearity issue that has to be fixed was indicated by variables with VIF values higher than 10.

3.6.2. Autocorrelation Test

No serial correlation or autocorrelation should exist for a model to provide the desired outcomes. Autocorrelation in panel data will be evaluated using the Wooldridge approach. It was claimed that there is no data association between the residual of the calculated equations and the dependent variable if the probability value is more than 5%. It was not beneficial to use a model that has been shown to suffer from serial correlation or autocorrelation. The coefficient estimates' variance is inflated by autocorrelation. Additionally, the standard errors are negatively impacted. A fixed effects regression with AR (1) disturbances were run to address the issue. The influence of the first-order serial correlation is removed, and the coefficient variance was stabilized by taking into account the AR (1) disturbances in the model.

3.6.3. Heteroscedasticity Test

The absence of homoscedasticity is referred to as heteroscedasticity. Panel data was used to assess the likelihood-ratio test for heteroscedasticity. The heteroscedasticity problem was addressed by the calculation of the robust standard errors. The assumed normality of the residuals was checked using the Jarque-Bera test. The Jarque-Bera test results show that the mistakes are not regularly distributed. Utilizing logarithms to transform the data addressed the issue of the residuals' non-normality.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This section presents a comprehensive summary of the research results about the influence of capital adequacy on efficiency of deposit taking Sacco's in Nairobi County. The initial presentation comprised a set of descriptive data. Additionally, the collected data was subjected to regression diagnostic checks in order to evaluate its suitability for further statistical analysis. In addition, the regression models were estimated and the findings were evaluated utilizing inferential statistics. The research utilized yearly secondary data for a five-year timeframe (2018-2022) obtained from the Saccos annual reports for the 44 deposit taking saccos.

4.2 Descriptive Statistics

Metrics such as the mean, standard deviation, maximum and lowest values, number of observations, skewness, and kurtosis are all included in descriptive statistics. The results of the research are shown in Table 4.1 of the document.

Table 4.1: Descriptive Statistics

	N	Min	Max	Mean	Std. Deviation	Skewness	Kurtosis
Efficiency of deposit taking Sacco's in Nairobi County	220	0.022	0.781	0.523	1.32718	0.754	0.042
Capital	220	.003	0.175	0.668	0.2752	0.8	1.272

Credit risk	22 0	0.19	0.83	0.4823	0.12673	0.212	0.557
Capital investment	22 0	65997 8	13451014 4	5478103 1	15.0654	0.326	0.492
Management quality	22 0	3.37	15.24	0.5468	2.72441	0.145	0.895

Researcher (2023)

According to the findings shown in Table 4.1, it was established that efficiency of deposit taking Sacco's in Nairobi County that provided loan services over the time period under consideration was 52.3%. These findings were based on an analysis of the data. The computation led to the conclusion that the efficiency had a standard deviation of 1.32718. The lowest possible efficiency of deposit taking Sacco's in Nairobi County that was reported was 2.2%, while the highest possible efficiency recorded was 4.02%. In this particular instance, there are a total of 220 observations included in the dataset, which is denoted by the value of the variable N. This data was compiled from observations made during the period of 2018 to 2022. The observation has shown that the average amount of capital ratio is 0.668, and the standard deviation is 0.2752. According to the findings of the research, the average level of credit risk across the SACCOs that were the focus of the examination was 48.23%, with a low value of 19% and a high value of 83%. The data under consideration have a mean capital investment value of 54781031, with a range that runs from a lowest recorded value of 659978 to a maximum recorded value of 134510144. The management quality presented by the l comes in at an average of 54.68%.

4.3 Diagnostic Tests

The present study utilized the relapse demonstration test to evaluate the underlying assumptions. This examination plays a significant role in determining whether any assumptions regarding the relapse have been exploited in any manner. Any violation of the assumptions can lead to the inadequacy of the utilized model.

4.3.1 Test for Multi-Collinearity

If there is a strong correlation between the two variables that are being studied within the context of a multiple regression model, then multicollinearity will be present. The level of significance of this correlation may range from modest to high. In order to determine the level of multicollinearity, we will be using the Variance Inflation Factor.

The Variance Inflation Factor (VIF) is a statistical measure employed to assess the degree of volatility in the coefficient estimates of independent variables, which can be attributed to their connection with the dependent variable.

Table 4.2: Test for Multi-Collinearity

	Collinearity Statistics Tolerance	VIF
Efficiency of deposit taking Sacco's in Nairobi County	.268	4.315
Capital	.669	1.725
Credit risk	.665	1.736
Management quality	.459	2.516
Capital investment	.319	3.618

Source; Researcher (2023)

Based on the aforementioned findings, it can be concluded that all the Variance Inflation Factors (VIFs) fall within the range of 1 to 10, indicating the absence of multicollinearity. The observed values indicate that the coefficients have been accurately estimated, therefore providing a basis for the study to place confidence in their corresponding p-values.

4.3.2 Heteroscedasticity

This happens when the blunder term of the difference is diverse over the noticed information. The heteroscedasticity is extremely fundamental in assessment of the distinction that exist in the difference of the perception to the next (Godfrey, 1996). In agreement to this study, the suspicion made is that on the off chance that the worth >0.05 , at that point there should be extremely negligible issue of the homoscedasticity. The outcomes for trial of homoscedasticity were as introduced in Table 4.3.

Table 4.3: Breusch-Pagan test for Heteroscedasticity

Source	chi2	Df	P
Heteroscedasticity	18.83	220	0.2976

Source; Researcher (2023)

The findings presented in Table 4.4 indicate that the p-value ($p=0.2976$) above the threshold value of 0.05, suggesting there is a presence of homoscedasticity.

4.3.3 Tests for Autocorrelation

Autocorrelation tests were performed to establish whether there was a relationship between blunder terms over different time periods. The Durbin Watson test was used to attempt

autocorrelation. With a Durbin-Watson measurement of 1.975, or roughly 2, it can be said that the data set did not exhibit autocorrelation.

Table 4.4: Autocorrelation Test

R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
.534 ^a	.285	.243	.1495368	1.975

Source; Researcher (2023)

- a. Predictors: capital, credit risk, management quality and capital investment
- b. Dependent Variable: Efficiency of deposit taking Sacco's in Nairobi County

4.4 Correlation Analysis

A series of correlation and regression studies were conducted to establish the effect that capital has on the overall efficiency of DTS in Nairobi County. An investigation on the influence of capital adequacy on efficiency of DTS in Nairobi County was carried out through the use of a correlation analysis.

Table 4.5: Correlation Analysis

	Efficiency	Capital	Credit risk	Management quality	Capital investment
Efficiency	1				
Capital (r)	0.88	1			

(p) Sig. (2 tailed)	0.045					
Credit risk	0.81	0.14	1			
(p) Sig. (2 tailed)	0.018	0.047				
Management quality	0.70	0.22	0.51	1		
(p) Sig. (2 tailed)	0.025	0.019	0.047			
Capital investment	0.78	0.19	0.67	0.52	1	
(p) Sig. (2 tailed)	0.031	0.029	0.046	0.014		

Source; Researcher (2023)

The study established a positive and strong relationship between capital and the efficiency of DTS in Nairobi County, which was significant as shown by Pearson’s correlation coefficient of 0.88 and ($p=0.045<0.05$). In addition, a significant and strong positive correlation between credit risk and efficiency of DTS in Nairobi County was established ($r = 0.81$; $p=0.018<0.05$). The findings of the study also established a significant and strong positive correlation between management quality and efficiency of DTS in Nairobi County ($r = 0.70$; $p=0.025<0.05$). The findings of the study further revealed a significant and strong positive correlation between capital investment and efficiency of DTS in Nairobi County ($r = 0.78$; $p=0.031<0.05$). The study established a positive and strong relationship between capital and the efficiency of DTS in Nairobi County, which was significant as shown by Pearson’s correlation coefficient of 0.78 and ($p=0.045<0.05$).

4.5 Regression Analysis

The research utilized a multivariate regression analysis to determine the predictor variables and their corresponding impact. The measurements of the multiple regressions were encoded,

entered, and calculated utilizing the Statistical Package for the Social Sciences (SPSS). The primary aim of this research is to investigate the impact of capital, credit risk, management quality and capital investment on the efficiency of deposit taking Sacco's in Nairobi County.

Table 4.6: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.844	0.712	0.693	1.263

Source; Researcher (2023)

The data that are shown in Table 4.6 reveal that there is a statistically significant association between capital, credit risk, management quality, capital investment and the efficiency of deposit taking Sacco's in Nairobi County. This is demonstrated by the fact that there is a correlation between all of these factors. The significant correlation coefficient that was found ($r = 0.844$) lends weight to this submission. According to the coefficient of determination, which is represented by the square root of the letter R, the independent variables account for about 71.2% of the observed variability in the efficiency of deposit taking Sacco's in Nairobi County.

Table 4.7: ANOVA^a

Model	Sum of Squares	df	Mean Square	F	Sig.
-------	----------------	----	-------------	---	------

1	Regression	72.252	4	18.063	17.269	0.00003
	Residual	224.89	215	1.046		
Total		302.142	219			

Source; Researcher (2023)

c. Predictors: capital, credit risk, management quality, capital investment

d. Dependent Variable: Efficiency of DTS in Nairobi County

The table shown above presents the F statistic value of 17.269 which is greater than 2.414 from a F table with d.f of (4,215), which is significant at a 5% level of significance. The statistical analysis reveals that the F statistic demonstrates significance, as evidenced by the P-value of 0.00003, which falls below the specified significance level of 0.05. This implies that the model utilized in the study evince statistical significance, thus indicating that the data can be deemed dependable for making certain conclusions.

Table 4.8: Coefficients

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	T	Sig.
(Constant)	4.036	0.451		8.949	0.001
Capital	0.867	0.179	0.146	4.844	0.002
Credit risk	0.737	0.280	0.126	2.632	0.010
Management quality	0.663	0.179	0.156	3.704	0.009
Capital Investment	0.532	0.168	0.045	3.167	0.042

Source; Researcher (2023)

The overall regression model for this study was:

$$Y = 4.036 + 0.867X_1 + 0.737X_2 + 0.663X_3 + 0.532X_4$$

According to the findings of the research, the implementation of capital contributes favourably to the overall efficiency of DTS in Nairobi County. According to the findings, there is a strong connection between a rise of one unit in capital and a matching increase of 0.7867 in the efficiency of DTS in Nairobi County. This indicates that there is a positive correlation between the two variables. A T-value of 4.844 indicated that there was a statistically significant connection between the two variables. The results of the study indicated a positive correlation between changes in credit risk and the efficiency of DTS in Nairobi County. This was shown by a coefficient of 0.737, which is an indicator of the strength of the link. The T-value of 2.632 demonstrated that there is a statistically significant connection between the two variables. The impact has been shown to be beneficial since it has also been noted that management quality has a positive influence on the efficiency of DTS in Nairobi County in Kenya. There is a favorable association between the management quality and the efficiency of DTS in Nairobi County, according to the empirical information that has been gathered. To be more specific, an increase of one unit in management quality is connected with an increase of 0.663 units in the efficiency of DTS in Nairobi County. A T-value of 3.704 demonstrated that there is a statistically significant connection between the two variables. In addition to this, it is clear that the degree of capital investment has a constructive impact on the efficiency of DTS in Nairobi County operating in the Kenyan market. An increase in capital investment of one unit has a favorable effect on the efficiency of DTS in Nairobi County, resulting in a rise of 0.532 for each unit of increase in capital investment. The T-value of 3.167 was used to assess whether or not the association could be considered statistically significant.

4.5 Discussion of Findings

Capital affects efficiency of DTS in Nairobi County, Kenya. It demonstrates that any unit increment in the capital will make efficiency of DTS in Nairobi County increase by 0.867. In tandem with the study findings, Almazari & Alamri (2017), stated that companies that invest in new equipment or technology can boost productivity, reduce costs, and increase efficiency. These kinds of investments may also improve the quality of the items produced. Capital expenditures have the potential to lower costs over time.

Because of the positive result of 0.737, it was determined that an increase in the credit risk of DTS in Nairobi County increment would lead to an improvement in the efficiency of DTS in Nairobi County. Similar to the study findings, Pradhan et al. (2017) conducted a study on the impact of capital adequacy on the financial performance of Nepalese commercial banks. The research made use of secondary data. The study's findings indicate that the key factors influencing the financial performance of Nepal's commercial banks are the efficiency of the bank's operations and the ratio of total deposits to total assets. A number of factors, including loan ratios, deposit-to-asset ratios, loan loss provisions, and equity-to-deposit ratios were found to have a significant influence of commercial bank performance.

Management quality indicated a positive effect on efficiency of DTS in Nairobi County which implies that it builds efficiency of DTS in Nairobi County by 0.663 because of a unit increment. Similarly, Ab-Rahim *et al.*, (2018) opines that a few elements that affect efficiency are capital, business size, credit risk, and management quality. The same elements highlighted by Ab-Rahim et al. (2018) will therefore be taken into account in this inquiry. The equity to total asset ratio will be used to determine capital, the loans to members to total asset ratio will be used to assess

credit risk, and the non-interest costs to total asset ratio will be used to measure management quality. Since the SACCO's total assets are used to normalize the other dependent variables under discussion, size will be calculated as the total assets logarithm.

Moreover, capital investment indicated a positive effect on efficiency of DTS in Nairobi County which implies that it expands efficiency of DTS in Nairobi County by 0.532 because of a unit increment. In tandem with the study findings, Otwani, Namusonga, and Nambuswa (2017) in comparing the one-time capital investment expenditure to the continuous, long-term cash outlay of a recurrent expense, businesses may determine that long-term discounted cash flow is preferable. By making investments in their long-term assets, businesses may potentially gain a competitive advantage. Over time, this can help the company hold onto its market share by making it more difficult for competitors to surpass it. A corporation may construct an entry barrier that rivals cannot get around or compete against if it is ready to take a chance and make a significant investment to improve its business (Jamil & Said, 2018).

CHAPTER FIVE: SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The implications of the data have been analyzed in relation to the factors outlined in chapter four, which examine the impact of capital on the efficiency of deposit taking Sacco's in Nairobi County. The formulation of conclusions and policy implications is contingent upon the aforementioned findings.

5.2 Summary of Findings

The purpose of this study was to show how the influence of capital adequacy on efficiency of deposit taking Sacco's in Nairobi County. It was a descriptive research study that looked at how capital adequacy affects the efficiency of deposit taking Sacco's in Nairobi County. The data set contains a total of 220 observations that were gathered over a period of five years (2018-2022), with the information derived from deposit taking Sacco's in Nairobi County. The data was used effectively in the application of parametric tests such as an analysis of variance, a Pearson correlation, and a regression analysis.

A one-unit increase in capital is associated with improvement in deposit taking Sacco's in Nairobi County increment, as shown by the statistics. Analysis of variance (ANOVA) was used in this study to determine whether the model under evaluation was suitable and robust. Regression analysis provides insights into the relative importance of five factors capital, credit risk, management quality and capital investment on the efficiency of deposit taking Sacco's in Nairobi County. This study analyzed in detail the impact that the variables studied had on the

efficiency of deposit taking Sacco's in Nairobi County, finding that they account for an impressively high percentage of the overall variation. There may be other factors at play in the company's financial performance that were not investigated here. The significance of the model or framework that formed the foundation of this study is emphasized.

The research found a positive and statistically significant correlation between capital adequacy and efficiency of deposit taking Sacco's in Nairobi County. The research found a significant relationship between the credit risk and efficiency of deposit taking Sacco's in Nairobi County. Given that the Pearson correlation value management quality and their efficiency of deposit taking Sacco's in Nairobi County, it's safe to say that the two are positively related. Furthermore, the capital investment levels were shown to significantly positively correlate with the efficiency of deposit taking Sacco's in Nairobi County. Because it suggests a connection between the two, this result is significant.

5.3 Conclusion

The study found that efficiency of deposit taking Sacco's in Nairobi County benefited significantly from the introduction of capital. This is what the data led us to conclude. From the data at hand, we can infer that a modest rise of one unit in capital is associated with a similar improvement in the efficiency of deposit taking Sacco's in Nairobi County operating in Kenya. This implies that capital have a strong and positive correlation with efficiency of deposit taking Sacco's in Nairobi County which is significant.

Evidence from a number of research suggests that efficiency of deposit taking Sacco's in Nairobi County is positively affected by credit risk. This implies that credit risk has a strong and positive

correlation with efficiency of deposit taking Sacco's in Nairobi County which is significant. This finding suggests that deposit taking Sacco's in Nairobi County should expect a fold boost in efficiency for every one-unit rise in management quality. This implies that management quality has a strong and positive correlation with efficiency of deposit taking Sacco's in Nairobi County which is significant.

Furthermore, it is patently evident that the capital investment available to deposit taking Sacco's in Nairobi County has a significant and positive influence on their efficiency. According to the data, there is a positive relationship between capital investment and the efficiency of the institutions that were investigated, with a unit increase in capital investment resulting in a matching increase of in an institution's efficiency. This implies that capital investment has a strong and positive correlation with efficiency of deposit taking Sacco's in Nairobi County which is significant.

5.4 Recommendations

DT SACCOS in Nairobi County should implement and adopt advanced capital allocation strategies. This includes a thorough assessment of risk profiles associated with their loan portfolios, investments, and other financial activities. This execution ensures that resources are allocated to areas that require them most, thereby improving overall operational efficiency.

SACCOS can further enhance their efficiency by diversifying their investment portfolios. This involves spreading investments across different asset classes such as equities, fixed income securities, real estate, and other financial instruments. Diversification helps to mitigate risks

associated with a concentrated investment approach. It also allows SACCOS to potentially earn higher returns while managing exposure to market fluctuations.

SACCOS should implement robust stress testing and scenario analysis protocols which in the long run are essential for SACCOS to evaluate their capital adequacy under adverse economic conditions. SACCOS can identify potential vulnerabilities and take preemptive measures to bolster their capital positions by simulating various hypothetical scenarios.

Modern technological advancements are crucial for to improve operational efficiency thus SACCOS should embrace. This includes the implementation of robust core banking systems, digital payment solutions, and data analytics tools.

SACCOS should invest in professional development of staff and board members which is vital for aiming to improve their efficiency. Training programs focused on risk management, financial analysis, regulatory compliance, and customer service can significantly enhance the capabilities of the workforce.

5.5 Limitation of the Study

The duration of this study spanned five years, which may limit the extent of its conclusiveness compared to studies conducted over far longer timeframes. A longer duration of study allows for the utilization of a greater amount of data, potentially leading to more conclusive conclusions compared to studies with shorter durations. This study does not specifically address certain aspects that have an impact on the efficiency of deposit taking Sacco's in Nairobi County. Various aspects can be identified, including competency of the employees, size of the firm and

asset tangibility among others. If these parameters had been incorporated, it is possible that the results could have varied.

5.6 Suggestions for Future Research

This research suggests that another study, similar to the one that was undertaken, should be carried out, but this time in the Eastern Africa area. This new study should entail the establishment of deposit taking Sacco's in Nairobi County in Kenya, Uganda, Tanzania, Burundi, and Rwanda, and then compare the results of those SACCOS to those of the Kenya.

REFERENCES

- Ab-Rahim, R., Md-Nor, N. G., Ramlee, S. & Ubaldillah, N. Z. (2018). Determinants of Cost Efficiency in Malaysian Banking. *International Journal of Business and Society*, 13, 3, 355 – 474.
- Aggrey, N., Eliab, L., & Joseph, S. (2010). Firm size and technical efficiency in East African manufacturing firms. *Current research journal of Economic theory*, 2(2), 69-75.
- Almazari, A. A., & Alamri, A. M. (2017). The effect of capital adequacy on profitability: a comparative study between samba and Saab banks of Saudi Arabia. *International Journal of Economics, Commerce and Management*, 5(11), 86-102.
- Amahalu, N. (2017). Determinants of audit quality: Evidence from deposit money banks listed on Nigeria Stock Exchange. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, 7(2), 117-130.
- Asuma, B. (2022). *Effect of Non-Core Business Investments on Financial Performance of Deposit-taking Saving and Credit Co-operative Societies in Kenya* (PhD, Doctoral Degree in Finance, KCA University).
- Barth, J. R., Caprio Jr, G., & Levine, R. (2016). Misdiagnosis: Incomplete Cures of Financial Regulatory Failures. In *The First Great Financial Crisis of the 21st Century: A Retrospective* (pp. 399-431).
- Barus, J. J., Muturi, W., Kibati, P., & Koima, J. (2017). Effect of capital adequacy on the financial performance of savings and credit societies in Kenya. *American Journal of Finance*, 1(4), 1-12.

- Berger, T. & Humphrey, G. (2017). Bank efficiency and financial centers: Does geographical location matter? *Journal of International Financial Markets, Institutions and Money*, 46, 188-198.
- Chioma, A. (2021). Assessing the effect of capital adequacy risk and liquidity risk management on firm value of deposit money banks in Nigeria. *African Journal of Accounting and Financial Research*, 4(1), 33-49.
- Dao, M. & Nguyen, D. (2020). Determinants of Vietnam's rice and coffee exports: using stochastic frontier gravity model. *Journal of Asian Business and Economic Studies*, 29(1), 19-34.
- Etikan, I., Musa, S. A., & Alkassim, R. S. (2016). Comparison of convenience sampling and purposive sampling. *American Journal of Theoretical and Applied Statistics*, 5(1), 1-4.
- Iskandar, Y. (2020). the Influence of Capital Adequacy Ratio, Loan-To-Deposit Ratio, and Net Interest Margin on Stock Return at Commercial Banks in Indonesia. *Jurnal Aplikasi Manajemen*, 18(3), 533-538.
- Jamil, N. A., & Said, R. M. (2018). Does capital adequacy ratio moderate the relationship between ownership structure and performance. *International Journal of Academic Research in Business and Social Sciences*, 8(10), 1305-1319.
- Jokipii, T., & Milne, A. (2011). Bank Capital Buffer and Risk Adjustment Decisions. *Journal of Financial Stability*, 7(3), 165-178.
- Laeven, L., & Levine, R. (2009). Bank governance, regulation and risk taking. *Journal of Financial Economics*, 93(2), 259-275.

- Mbaeri, M. N., Uwalake, U., & Gimba, J. T. (2021). Capital adequacy ratio and financial performance of listed commercial banks in Nigeria. *Journal of Economics and Allied Research*, 6(3), 81-88.
- Melani, E., Miharso, A., & Fuadiyah, Z. (2019). Mediating Role of Good Corporate Governance to Intellectual Capital and Firm Value. In *2nd Annual Management, Business and Economic Conference (AMBEC 2020)* (pp. 173-178). Atlantis Press.
- Milne, A., & Whalley, A. E. (2018). Bank capital regulation and incentives for risk-taking. *Cass Business School Research Paper, WBS Finance Group Research Paper*, (17).
- Mugenda, O. M., & Mugenda, A. G. (2013). *Research methods: Quantitative & qualitative approaches* (Vol. 2, No. 2). Nairobi: Acts press.
- Mutumira, M. (2019). Effect of capital adequacy on the financial performance of insurance companies in Kenya. *International Academic Journal of Economics and Finance*, 3(4), 172-185.
- Neuman R. (2010). *Research methods*. Psychology Press.
- Ngui, A., & Jagongo, A. (2017). Capital adequacy and financial performance of deposit taking savings and credit co-operative societies in Kenya. *International Journal of Social Science and Humanities Research*, 5(4), 596-604.
- Nwankwo, S. N. P. (2019). Effect of capital adequacy on commercial bank's financial performance in Nigeria, 2010-2017. *European Journal of Accounting, Finance and Investment*, 5(4), 1-21.

- Nyanyuki, M. N., Nyanga'u, A., & Onwonga, M. (2022). Evaluation of the effects of capital adequacy on financial performance of commercial banks in Kenya. *International Academic Journal of Economics and Finance*, 3 (7), 113, 126, 2.
- Ogunode, O. (2022). Capital adequacy and corporate performance of non-financial firms: Empirical evidence from Nigeria. *Cogent Business & Management*, 9(1) , 123-142.
- Otwani, M. Namusonga, G. & Nambuswa, E. (2017). Impact of Capital Adequacy on the Financial Performance of Companies Listed in Nairobi Security Exchange. *International Journal of Social Sciences and Technology*.3(9), 2506-2513
- Pasiouras, F. (2018). Financial consumer protection and the cost of financial intermediation: Evidence from advanced and developing economies. *Management Science*, 64(2), 902-924.
- Pradhan, P., Shyam, R., & Shrestha, A. (2017). The impact of capital adequacy and bank operating efficiency on financial performance of Nepalese commercial banks. *International Journal of Social Sciences* 5(2), 56-89
- Rime, B. (2001). Capital requirements and bank behaviour: Empirical evidence for Switzerland. *Journal of Banking & Finance*, 25(4), 789-805.
- Saastamoinen, A. (2015). Heteroscedasticity or production risk? A synthetic view. *Journal of Economic Surveys*, 29(3), 459-478.
- Saunders, M., Lewis, P., & Thornhill, A. (2009). *Research methods for business students*. Pearson education.
- Sinani, E., Jones, D. C., & Mygind, N. (2017). Determinants of firm level technical efficiency: A stochastic frontier approach. Copenhagen Business School.

- Torbira, L., & Zaagha, A. S. (2016). Capital adequacy measures and bank financial performance in Nigeria: A cointegration analysis. *Journal of Finance and Economic Research*, 3(1), 15-34.
- Von Thadden, E. L. (2004). Asymmetric information, bank lending and implicit contracts: the winner's curse. *Finance Research Letters*, 1(1), 11-23.
- Wambua, V. M., Waweru, K. M., & Kihoro, J. M. (2021). Influence of Capital Adequacy on the Loan Performance of Deposit Taking SACCOs in Kenya. *African Journal of Co-operative Development and Technology*, 6(1), 1-10.
- Yulianti, E., Aliamin, A., & Ibrahim, R. (2018). The effect of capital adequacy and bank size on non-performing loans in Indonesian public banks. *Journal of Accounting Research, Organization and Economics*, 1(2), 205-214.

APPENDIX I: DT-SACCOS IN NAIROBI COUNTY

1. Afya Sacco Society Ltd
2. Airports Sacco Society Ltd
3. Ardhi Sacco Society Ltd
4. Asili Sacco Society Ltd
5. Chai Sacco Society Ltd
6. Chuna Sacco Society Ltd
7. Comoco Sacco Society Ltd
8. Elimu Sacco Society Ltd
9. Harambee Sacco Society Ltd
10. Hazina Sacco Society Ltd
11. Jamii Sacco Society Ltd
12. Kencream Sacco Society Ltd
13. Kenpipe Sacco Society Ltd
14. Kenversity Sacco Society Ltd
15. Kenya Bankers Sacco Society Ltd
16. Kenya Police Sacco Society Ltd
17. Kimisitu Sacco Society Ltd
18. Magereza Sacco Society Ltd
19. Maisha Bora Sacco Society Ltd
20. Metropolitan National Sacco Society Ltd
21. Mwalimu National Sacco Society Ltd
22. Mwito Sacco Society Ltd
23. Nacico Sacco Society Ltd
24. Nafaka Sacco Society Ltd
25. Nation Sacco Society Ltd
26. Nssf Sacco Society Ltd
27. Nyati Sacco Society Ltd
28. Safaricom Sacco Society Ltd
29. Sheria Sacco Society Ltd
30. Shirika Sacco Society Ltd
31. Shoppers Sacco Society Ltd
32. Stima Sacco Society Ltd
33. Taqwa Sacco Society Ltd
34. Telepost Sacco Society Ltd
35. Tembo Sacco Society Ltd
36. Ufanisi Sacco Society Ltd
37. Ukristo Na Ufanisi Wa Anglican A Sacco Society Ltd
38. Ukulima Saco Society Ltd
39. Unaitas Sacco Society Ltd
40. United Nations Sacco Society Ltd

41. Ushuru Sacco Society Ltd
42. Wana-anga Sacco Society Ltd
43. Wanandege Sacco Society Ltd
44. Waumini Sacco Society Ltd

Source: SASRA, 2022

APPENDIX II: DATA COLLECTION SHEET

Variable	2018	2019	2020	2021	2022
Core capital					
Total deposits					
Non-performing Loans					
Institutional capital					
Total assets					
Gross Loans					
Non-interest expense					

Source: Researcher (2023)