

**EFFECT OF ASSET QUALITY ON FINANCIAL
PERFORMANCE OF COMMERCIAL BANKS IN KENYA**


IMMACULATE WACERA WANJOHI

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DECLARATION

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

Signed:  Date: 25-11-2022

IMMACULATE WACERA WANJOHI

D61/5749/2017

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

Signed:  Date: November 11, 2022

DR. JOSHUA WANJARE

DEPARTMENT OF FINANCE AND ACCOUNTING

UNIVERSITY OF NAIROBI

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DEDICATION

This research project is dedicated to my mother, Millie Khalai Bulungu, for the sacrifice she made to make sure that i got the best education and for believing in me.

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LIST OF ABBREVIATIONS

ALLL	Allowances for Loan and Lease Losses
ANOVA	Analysis of Variance
ARDL	Auto Regressive Distributed Lag
CBK	Central Bank of Kenya
CRM	Credit Risk Management
DT-SACCO	Deposit Taking Saving and Credit Cooperative
GDP	Gross Domestic Product
MFI	Micro Finance Institution
NPL	Non-Performing Loans
ROA	Return on Assets
ROE	Return on Equity
SPSS	Statistical Package for Social Sciences

ABSTRACT

Loan portfolio constitutes the largest proportion of banks' assets and therefore when loans become non-performing, they negatively impact financial performance along with overall financial activity by banks. High levels of NPLs indicate a vulnerable financial system since it influences the financial performance of banks in reducing levels of interest income, whereas low standards of NPLs indicate the presence of a sound effective financial system. It is hypothesised that deterioration in the asset quality of commercial banks negatively affects its financial performance. This study sought to investigate how asset quality influences the financial performance of commercial banks in Kenya. The independent variable for the research was asset quality measured as the ratio of NPLs to total loans. Liquidity, firm size and capital adequacy were the control variables while the dependent variable was financial performance measured using ROA. The study was guided by information asymmetry theory, financial intermediation theory as well as loanable funds theory. Descriptive research design was utilized in this research. The 39 commercial banks in Kenya as at December 2021 served as target population. The study collected secondary data for five years (2017-2021) on an annual basis from CBK and individual banks annual reports. Descriptive, correlation as well as regression analysis were undertaken and outcomes offered in tables followed by pertinent interpretation and discussion. The research conclusions yielded a 0.604 R square value implying that 60.4% of changes in banks ROA can be described by the four variables chosen for this research. The multivariate regression analysis further revealed that individually, asset quality exhibited a negative effect on ROA of banks as shown by ($\beta=-0.346$, $p=0.000$). Liquidity has a positive and significant effect on ROA of banks ($\beta=0.318$, $p=0.000$). Firm size and capital adequacy exhibited a positive and significant influence on ROA of banks in Kenya as shown by ($\beta=0.484$, $p=0.000$) and ($\beta=0.282$, $p=0.000$) respectively. The study recommends the need for banks to ensure

that asset quality management policies are crafted based on appropriate strategies for performance enhancement. The policy makers such as CBK should come up with policy guidelines to direct firms on ways to enhance their quality of assets without risking their financial performance. The study recommends the need for further studies focusing on other financial institutions in Kenya such as microfinance banks and SACCOs.

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Financial performance of commercial banks indicates improvement or decline in the economic levels of a given country owing to the significant contribution of banks to the Gross Domestic Product (GDP) (Sarpong & Winful, 2017). Despite developments around the banking industry, deterioration of asset quality as a result of rising levels of non-performing loans (NPLs) still pose the greatest risk and lowers financial performance. NPLs occur when outstanding credit facility is not repaid as expected and can eventually result to a loss if they remain uncollectable for a long period such as over one year (Central Bank of Kenya, 2021). An improvement in asset quality is theoretically hypothesized to improve financial performance (Kabui, 2020).

The information asymmetry theory by Akerlof (1970) was the anchor theory of this study as it expounds on instances where banks cannot separate the safe from risky borrowers. The study makes use of the information asymmetry theory to investigate how asset quality influences the financial performance in a bank. The financial intermediation theory by Diamond (1984), states that through intermediation, financial institutions may generate and provide tailored financial solutions to satisfy each client, and thereby, the financial intermediaries enhance credit reach but this may also increase the level of non-performing loans, provides additional support for the study. The loanable funds theory of Robertson and Ohlin (1930) also supports this study in that interest rate is hypothesized to influence asset quality which in effect influences performance of banks.

The study focused on commercial banks in Kenya. Banks facilitate payment processing as well as provide saving and borrowing facilities thereby providing cash flows in an

economy (Aloys, Mogwambo & Otieno, 2019). Despite the importance of the banking sector to the economy, some banks have experienced a number of challenges. This is evidenced by the recent collapse of Chase Bank and Imperial Bank and the struggles experienced by National Bank. Further, CBK (2021) revealed that the level of NPLs among Kenyan banks has been on the rise over the years and this implies deterioration in asset quality. Commercial banks in Kenya provide a good context to examine asset quality effect on financial performance.

1.1.1 Asset Quality

Asset quality is a measure of the total risk tied to assets owned by an individual or a corporate body (Adeyemo & Bamire, 2021). This terminology is common in the banking industry to determine the value of assets at risk and points to how much provisions banks have to make for loan losses. The asset quality comprises credit risk related to the loan and investment portfolio and includes real estate, other assets and off balance sheet items such as bank guarantees and letters of credit (Tabari, Ahmadi & Emami, 2020). According to Yin (2019), asset quality refers to the level of vulnerability of loans and advances of a financial institution to the risk of default.

The quality of assets in a financial institution is important as it strongly influences performance of any commercial bank since it leads to an increase in interest income and a reduction of the cost burden of managing bad debts respectively (Levine, 2018). According to the law banks are required set aside some finances to be used as an expense that will protect the banks from bad debts and loan default. A high NPL ratio to the gross/net asset causes the asset quality to fall. This shows there is a negative trade-off between asset quality and performance (Ombaba, 2020).

The level of asset quality in a bank is determined by the percentage of the NPLs to the total loans advanced. The higher the percentage, the lower the asset quality and the higher the credit risk that a bank will be facing (Bimo et al., 2021). This is also a reflection of the ability of the bank to spot and manage credit risks. Abata (2018) stated that, an emphasis should be placed on the evaluation of asset quality and the significance of Allowances for Loan and Lease Losses (ALLL), the intensity of counter party exposure, the issuer or borrower defaults under actual or implied contract agreements. However, other risks and factors should be considered that impact the asset value like; operating, market, reputation, strategic or compliance risks. The current study used the ratio of NPLs to total loans issued as a measure of asset quality due to its wider applicability in previous literature. The measure has been used before by Bulus and Lawal (2021) and Gupta and Sharma (2022). The Central Bank of Kenya also uses this as the measure of asset quality.

1.1.2 Financial Performance

This is the measure of how good a given firm is performing financially and indicates the return on a given variable such as assets or equity (Rozzani & Rahman, 2013). It is the measure of returns or profits that managers redistribute to shareholders or increase equities of the firm (Halkos & Salamouris, 2004). This implies that the returns are quantifiable and that the amounts improve the shareholders wealth either directly as dividends or as capital gains and equity position. As per Baba and Nasieku (2016) financial performance depicts how a corporation generates money through using assets, and as a result, it aids decision making for stakeholders.

Managers, regulators and shareholders have a keen interest in the performance of banks. Regulators are interested in safeguarding depositor's funds and ensuring soundness of

banking institutions. Managers on the other hand are interested in peer review and assessing how good their management practices, policies and procedures outperform others in the industries (Ekanayake & Azeez, 2015). They also use the findings to find out competitors' weaknesses in order to out compete them. Shareholders invest their funds in firms and expect returns for their investments hence very interested in understanding how much their investment is generating for them.

The commonly used ratio measures of financial performance are Return on Assets (ROA) and Return on Equity (ROE) (Mukasinayobye & Mulyungi, 2018). ROE gives the ratio of profit to shareholders' equity and indicates how managers are utilising equity to generate revenues. ROA is the quotient of profit to assets of the firm and indicate how well managers utilise assets at their disposal to generate profits. Shareholders are interested in understanding how their investment and assets of their firm are performing. As the owners they invest in equities with the aim of obtaining returns. ROE and ROA therefore, become useful in performance comparison between firms in the same industry as well as different industries (Arafat & Buchdadi, 2011) informing investors decisions. A higher ratio indicates high financial performance and is desirable by investors. This study focused on ROA to measure financial performance due to its wider applicability in previous literature.

1.1.3 Asset Quality and Financial Performance

Information asymmetry theory by Akerlof (1970) is crucial in understanding the need to disclose information upon issuing loans in the sector. An increase in credit risk in the market is considered to be an undisclosed aspect that influences the performance of commercial banks. The study hence seeks to evaluate how commercial banks can

appraise such aspects to lower losses and raise the performance of commercial banks by maintaining good loans which will not be declared delinquent.

The financial intermediation theory is useful in examining bank level of NPLs because they take several risk measurements using modern technology in credit which involves the efficient collection of private details, treating, screening, and monitoring borrowers (Jappelli & Pagano, 2016). Financial intermediaries are useful in lowering transactional costs brought about by information asymmetry. They hence take a central function in the effective functioning of monetary markets (Marozva, 2017).

Asset quality in the financial sector is the result of moral hazards and adverse selection owing to asymmetric information. Financial institutions' financial performance is influenced by the firm's credit risk because most of their revenue is from loans which attract interest. Nonetheless, credit risk has an effect on the institutions' efficiency. As a result, the risk must be effectively controlled (Bhattarai, 2016). From prior studies, risk is a financial institutions' efficiency predictor in finance. For example NPL which is a proxy for asset quality can destabilize a bank's general system of credit lowering its value (Afriyie & Akotey, 2017).

1.1.4 Commercial Banks in Kenya

Banks create deposits for customers in exchange for assets which they acquire from depositors of fund. This process provides assets and liabilities for banks, which should be balanced for business operations and returns. Commercial banks seek to maximize profit from assets they hold and minimize costs from liabilities they incur. In Kenya there are 41 registered commercial banks and they operate under the supervision of CBK. Registered commercial banks must maintain a minimum amount of assets in liquid in order to protect depositors' fund, and to promote efficient and stable banking

system. According to section 19 (1) of the Banking Act, all banks are supposed to meet minimum liquidity ratio of 20 percent and ensure that liquidity risk management strategies are adhered to in the banking system (CBK, 2021).

The banking sector continues to grow both in inclusiveness and efficiency supported by supervisory reforms, legal, regulatory and initiatives. The banking sector asset base has grown from Sh. 4.8 trillion as at December 2020 to Sh.5.4 trillion as at December 2021. Liquidity ratio improved from 49.7% in December 2020 to 54.5% in December 2021, above the statutory requirement of 20%. The banking sector has also remained well capitalized. It had capital adequacy ratio of 19% in December 2021, which was above the minimum prudential requirement of 14.5% (CBK, 2021). Despite the good overall financial performance of commercial banks in Kenya, there are a number of financial institutions declaring losses. Moreover, the banking failures in the last decades in developing countries and bailouts thereof motivated this study to evaluate and understand the determinants of banks' performance in Kenya.

In a report compiled by Moody in 2019, it was documented that the asset quality of commercial banks in Kenya has been deteriorating as reflected by increasing amount of NPLs. The report showed that in April 2019, Kenya's ratio of NPL to total loans rose to 12.9 from 12.4 percent in March 2019. The statistics showed that Kenya was the fourth nation in Africa with a high ratio of NPL to total loans, the rest being Angola at 24, the Democratic Republic of Congo at 21 and Ghana at 19 percent at the same time period. The above statistics show that in East Africa, Kenya had the worst NPL performance in the region (Moody, 2019). The evidence proves that the increasing amount of NPLs is a crucial issue. Therefore, determining the stability of commercial banking institutions is important in promoting the country's financial stability.

1.2 Research Problem

Loan portfolio constitutes the largest proportion of banks' assets and therefore when loans become non-performing, they negatively impact financial performance along with overall financial activity by banks. High levels of NPLs indicate a vulnerable financial system since it influences the financial performance of banks in reducing levels of interest income, whereas low standards of NPLs indicate the presence of a sound effective financial system (Kabui, 2020). It is hypothesised that deterioration in the asset quality of commercial banks negatively affects its financial performance (Joleski, 2017).

The level of NPLs among Kenyan banks has been on the rise over the years and this implies deterioration in asset quality. In the year 2020, normal loans accounted for 75 percent while NPLs accounted for 25 percent (watch loans 10.5 percent, substandard loans 3.2 percent, doubtful loans 8.3 percent, and loss at 3 percent) (CBK, 2021). NPLs rose in December 2020 to shillings 436.1 billion from shillings 336.6 billion the previous period; indicating a 29.6% increase. As a result of these changes, NPL ratio deteriorated to 14.5% from 12.5%. Deterioration in asset quality is expected to lower the financial performance and this will be the focus of the current study.

Several studies have been carried out on asset quality and commercial bank's performance in developing economies and have yielded inconsistent results. Ikpesu and Oke (2022) examined the effect of capital adequacy and asset quality on banking sector performance in Nigeria. The study revealed that capital adequacy and asset quality both affect bank performance positively in Nigeria. Maula and Jaya (2022) investigated the earning asset quality, financial leverage, and company size influence the financial performance of Islamic Commercial Banks from 2016 and 2020. The study revealed

that asset quality has a significant negative effect on performance of banks. Ayuni and Anggraeni (2022) conducted a research to determine the role of liquidity, asset quality, sensitivity, efficiency and financial performance on capital in state banks. The study revealed that asset quality has a significant effect on financial performance in state banks. Although these studies focused on asset quality as the primary variable, they focused on different geographical and demographic economies thus presenting a contextual gap.

Locally, Mohamed (2022) sought to investigate the effect of credit risk rating on firm value of listed Commercial banks in Kenya. The study finding indicated asset quality had insignificant positive effect on firm value among Kenya commercial bank. The effect of asset quality on financial performance was not taken into account and therefore a conceptual gap. Ndiritu (2021) aimed at establishing how the bank sector asset quality is affected by the rate of interest. The findings suggested bi-directional causality between bank asset quality and interest rate in Kenya. This research presents a conceptual gap as the effect of asset quality on financial performance was not established. Gitau (2021) investigated how credit risk impacts financial performance of Dairy cooperatives in Kisii, Nyamira, Bomet and Kericho Counties, Kenya. From the findings, it was noted that credit risk has a substantial impact on financial performance of dairy cooperatives. The study however focused on cooperatives and its findings might not hold among banks.

Contextual and conceptual gaps also arise from the above studies. Asset quality and bank's performance has largely been studied in developed countries and understudied in Kenya. The findings of these studies may not be replicated in commercial banks in Kenya, hence providing a contextual gap. Conceptual gap arise from the fact that the local studies adopted have measured asset quality differently which resulted in different

findings, thus making the relationship between asset quality and financial performance of banks inconclusive. This study sought to address these gaps by answering the research question: What is the effect of asset quality on financial performance of commercial banks in Kenya?

1.3 Research Objective

To determine the effect of asset quality on financial performance of commercial banks in Kenya

1.4 Value of the Study

The study will contribute to building existing theories by accessing theoretical propositions such as the information asymmetry theory, the financial intermediation theory and the loanable funds theory whose key idea is aligning the bank operations in order to achieve high financial performance. The study will highlight the role played by asset quality in banks as far as financial performance is concerned.

The study will enable commercial banks to understand the effect of asset quality on bank's financial performance. This knowledge will help banks to come up with strategies that embrace asset quality and financial performance. The knowledge acquired from this study will also help banks to assess and manage both operational and market risks and take appropriate action toward improved financial performance.

The findings of the research will be important to central bank as the regulator and policy maker in formulating supervisory guidelines in the banking industry in order to sustain operations of commercial banks. The study will highlight how asset quality determine financial performance of financial institutions, thus enhancing policy guidelines to commercial banks by the regulator on the minimum requirements on these factors.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

The theories that underpin asset quality and financial performance are explained in this chapter. It also reviews the prior empirical research, identifies knowledge gaps, and

summarizing with a conceptual framework and hypotheses illustrating the anticipated link between the variables under research.

2.2 Theoretical Framework

This section surveys the theories that underpin the study of asset quality and financial performance. Theoretical reviews enclosed are information asymmetry theory, financial intermediation theory, and loanable funds theory.

2.2.1 Information Asymmetry Theory

Akerlof (1970), Spence (1973), and Stiglitz (1976) were the authors of the theory of information asymmetry, and they shared the 2001 Nobel Memorial Prize in Economics for their analysis of markets containing asymmetric information (Ledyard, 2018).

When making decisions and engaging in transactions, asymmetric information refers to one party having more or extra information than the other. Power imbalance emanates from imperfect information. When negotiating your wage, for instance, neither you nor your employer will be aware of the maximum your employer is willing to offer or the lowest income you are prepared to take. Sound economic judgments require accurate information. Market failure can result from an imbalance in a market (Schrand, 2017).

In an imperfect world, business risk management has been justified for several reasons, according to financial theories. Major arguments in favor of company risk management activities comprise convex tax scheduling (Mayers & Smith, 1982), expensive financial despair (Smith & Stulz, 1985), and expensive exterior finance (Froot, Scharfstein & Stein, 1993), even though shareholders may diversify on their own. Another justification for managers choosing to hedge is managerial risk aversion (Tufano, 1996), which enables them to improve their welfare. The concept that some leaders utilize results for hypothesis—which is characterized as constantly accepting results

stance established on a market perspective—is supported by several considerations. There are a variety of arguments that can be made in favor of this belief, even though these approaches to risk management stress on the bases organizations should hedge (i.e., employ agreements to lower some extent of risk)

The research makes use of the data asymmetry hypothesis in an attempt to comprehend credit risk control's impact on the performance of commercial banks. The commercial banks are monetary mediators and thus they risk advancing loans to clients who might fail to honor their obligation due to moral hazard on the borrower part as well as an adverse selection on the commercial bank part. The study hypothesizes that improvement in asset quality enhances profitability which results in a rise in financial performance.

2.2.2 Financial Intermediation Theory

The theory by Diamond (1984), takes a central part in the financial intermediation function particularly in the banking industry to overpower the data asymmetry that lies between borrowers and lenders, hence their constant interaction assists lenders in producing creditworthy information to borrowers. Information that is provided gives creditors and loan officers a strong incentive in assessing and appraising credit to those that require it. Modern theories state that the business of financial intermediation is pegged on economic flaws arising in the 1970s with limited subsidies (Jappelli & Pagano, 2016). The existence of the intermediaries is based on their ability to lower transaction and information costs from asymmetries (Tripe, 2003). Different market sector participants such as banks, SACCOs, fund managers, insurance companies, and other agencies contribute useful credit information that determines the market value of assets and securities (Klein, 1992).

The biggest criticism of the financial intermediation theory is its inability to give recognition to the role of lenders in the process of risk management (Levine et al., 2000). Scholtens and Van Wensveen (2000) stated that they don't recognize risk management as an important element in the monetary industry and emphasize the participation costs idea. They suggested future developments in the financial intermediation theory to understand challenges in the financial services sector.

The theory is useful in examining bank value because they take several risk measurements using modern technology in credit which involves the efficient collection of private details, treating, screening, and monitoring borrowers (Jappelli & Pagano, 2016). Financial intermediaries are useful in lowering transactional costs brought about by information asymmetry. They hence take the main function in the effective functioning of financial markets. The theory is suitable for understanding how asset quality relates with financial performance.

2.2.3 Loanable Funds Theory

Robertson and Ohlin (1930) developed the loanable funds' theory. With this strategy, the supply and demand of loanable money dictate the interest rate. All kinds of credit, including loans, bonds, and savings deposits, are referred to as loanable funds (Wicksell & Robertson, 2003). The loanable funds theory adds bank credit to the traditional theory, which only used savings and investments to ascertain interest rates. The total quantity of credit open in a thrift may surpass the private savings because the banking sector can make credit out of nothing. Consequently, in addition to the propensities for saving and investing, the balance (or market) interest rate is also impacted by the outcome or collapse of fiat capital and credit.

According to proponents of the loanable funds' approach, increasing savings via reduced consumption and deficits would result in increased credit availability, lowering interest rates, greater investment, a larger capital stock, and greater future income (Lindner, 2020). They used the supply and demand of loanable capital to justify the rate of interest. Firms looking to invest are the ones placing the demand. The number of lucrative ventures rises as the rate of interest falls. As a result, the demand curve for money will be on a downward slope.

Savings provide the majority of the loanable funds. Individuals will need a rewarding interest if they are going to save money to make up for the present-day consumption they are giving up. Individuals will be incentivized to hold and lend whenever the interest rate is high. Individuals will be deterred from saving and lending in case the interest rate is low. The supply curve for loanable funds, therefore, has an upward slope. The willingness to borrow is represented by the demand for bank loans, while the willingness to lend is represented by the supply curve for bank loans. The amount loaned is directly correlated with the interest rate, while the amount borrowed is inversely correlated with it (Mishkin, 2004). To comprehend how interest rate affects asset quality and how this affects performance of commercial banks, the loanable funds will be utilized. The theory has been critiqued for ignoring the effect of government controls such as interest rate capping (Lindner, 2020).

2.3 Determinants of Financial Performance

There are numerous determinants affecting a firm's financial performance that can be discovered inside or outside the company. Firm-specific internal variables include asset quality, liquidity, firm size and capital adequacy. External factors such as inflation,

GDP, political stability, and interest rates might also affect company FP (Athanasoglou et al., 2018).

2.3.1 Asset Quality

This indicates a bank's asset risk and stability. It estimates the asset quality magnitude among the characteristics that impact banks' health. The value of assets under the control of a bank is heavily dependent on credit risk, and the quality of the assets owned by the bank heavily relies on specific risks, level of NPLs, and debtors cost to the bank. This ratio should be at the lowest level. If lending is susceptible to risk in a well-functioning bank, the indicator in this case would be the applied interest margins. A low ratio shows an insufficient risk cover by the margins (Athanasoglou et al., 2018).

A bank's assets primarily consist of a loan portfolio, current as well as fixed assets, and other investments. The quality of assets mostly improves with the age and bank size (Athanasoglou et al., 2018). The primary assets that generate income for banks' are loans. The loan portfolio quality hence determines bank performance. Good quality assets reduce losses arising from NPLs, and this subsequently impacts performance (Dang, 2017).

2.3.2 Liquidity

Liquidity refers to a company's ability, in this case, a commercial bank, to pay its debts that are accrued in a year by using cash and quickly convertible short-lived assets into cash without the risk of default. Therefore, it happens in the event of the capacity to satisfy debt obligations to creditors without liquidating their other assets (Sanjay, 2018).

Insufficient liquid assets, as per Bikker and Vervliet (2018), make it difficult for businesses to finance their operations and make investments. Companies having this level of liquidity are able to cover unforeseen liabilities and commitments that must be

paid. According to Almajali et al. (2018), a bank's liquidity has a significant impact on the loan amounts it can afford to make to customers; as a result, bank's should maintain more liquid assets and less short-term liabilities.

2.3.3 Firm Size

Firm size determines by how much legal as well as financial elements affect a bank. Since large companies collect cheap capital and produce huge income, bank size is closely linked to capital adequacy (Amato & Burson, 2017). The book value of the bank's total assets is usually used to determine its size. Additionally ROA is positively associated with bank size showing that huge banks can accumulate economies of scale hence reducing operating costs while increasing loan volumes (Amato & Burson, 2017). Firm size is related to capital ratios, according to Magweva and Marime (2016), and profitability rises with size.

Amato and Burson (2017) mentioned that a firm's size is dependent on the assets owned by the organization. It can be argued that the more the assets owned by a bank the more the investments it can make which generate bigger returns compared to smaller firms with less assets. Additionally, a larger firm can have more collateral which can be used as security for more credit facilities related to smaller ones (Njoroge, 2018). Lee (2019) argued that the assets under control of an entity impacts profitability level of the firm from one period to another.

2.3.4 Capital Adequacy

Also called the capitalization ratio, the adequacy ratio shows how equity and total assets are related. It shows the ability of a bank to remain solvent by regulating risks. Bikker and Vervliet (2018) in an investigation showed a negative relation between capital adequacy and performance. In imperfect capital markets, institutions with sufficient

capital ought to reduce borrowing to back a specific asset class, hence lowering the predicted bankruptcy costs hence incur less financing costs.

A financial institution with sufficient capital signals the market that a superior performance is to be anticipated. According to the findings of Athanasoglou et al. (2018), capital holdings are positively correlated with bank financial performance, demonstrating the financial stability of Greek banks. Tee (2017) a positive causal relationship between capital contributions and financial performance was also demonstrated.

2.4 Empirical Review

The link between asset quality and financial performance has been established by local and international studies; the objectives, methods, and results of these earlier studies are examined in this segment.

2.4.1 Global Studies

Ikpesu and Oke (2022) sought to examine the effect of capital adequacy and asset quality on banking sector performance in Nigeria using annual panel data from the period 2010 to 2019. The study employs the system generalized method of moments in analysing data obtained from audited financial statements of twelve banks listed on the floor of the Nigeria stock exchange for the period 2010 to 2019. The twelve banks used control about 95% share of the market. The outcome of the study revealed that capital adequacy and asset quality both affect bank performance positively in Nigeria. Thus, suggesting that capital adequacy and asset quality enhance and stimulate banking sector performance in the country. The study presents a contextual gap as it was conducted in Nigeria whose social and economic setting is different from Kenya.

Maula and Jaya (2022) aims to see earning asset quality, financial leverage, and company size influence the financial performance of Islamic Commercial Banks from 2016 and 2020. A descriptive quantitative statistical technique is used in this type of research. With Eviews software version 10, the data was used as panel data with analysis capabilities in the form of panel data regression. The study employed a purposive sampling technique to select a sample of 10 Islamic commercial banks. The research found that concurrently had a substantial impact on Islamic commercial banks' financial performance. However, the partial test results reveal that the quality of earning assets and company size have such a considerable negative impact on Islamic commercial banks' financial performance, but financial leverage has no impact on financial performance. The study presents a contextual gap as it was conducted in Ghana. Further, some balance sheet items such as capital adequacy and NPLs were not considered.

Ayuni and Anggraeni (2022) conducted a research to determine the role of liquidity, asset quality, sensitivity, efficiency and financial performance on capital in state banks. This study used secondary data taken from first period quarterly of 2018 until the fourth quarterly of 2019 of government banks. This study used census that consisted of 9 banks. The data were processed by using SPSS 21. The result of this study revealed that asset quality and performance simultaneously have significant effect on capital of state banks. The research was performed among state banks in Malaysia whose operational setting is different from those of banks in Kenya where the current study will be conducted.

In their research, Singh, Basuki, and Rahmat (2020) on the effect of size on NPLs and profitability: empirical evidence from Nepalese commercial banks concluded that bank

size positively influences NPLs and NPLs negatively affects financial performance as measured by ROA. The study used financial performance as the dependent variable while ROA, bank asset size were independent variables. Secondary data was acquired from major commercial banks from 2015-2019 and a multiple regression analysis method used. The use of ROA as measure of performance provides a conceptual gap. The current study will use ROE and establish the relationship with size. Contextually the study was conducted in foreign countries and hence the results might be different when applied to Kenya.

Dayasagar (2019) analyzed credit risk practices impact on performance of Mahila cooperative banks in Kalaburagi district, India. The objectives were establishing how credit risk identification, analysis, monitoring and reduction impacted the performance of women cooperative banks. Based on the results, credit analysis, mitigation and identification had substantial positive impact on performance. It was hence recommended that women cooperative banks should implement stricter credit analysis techniques and adopt credit-monitoring practices. The research was performed in India whose economic as well as social cultural environment is diverse from Kenya where the current study will be conducted.

2.4.2 Local Studies

Mohamed (2022) sought to investigate the effect of credit risk rating on firm value of listed Commercial banks in Kenya. Descriptive research design was employed on a population sample of eleven publicly listed retail banks using census. Secondary data was collected from CBK and other public financial reports on a target of 11 retail banks over the 12 – year period from 2019 to 2020. The collected data was analyzed using a multivariate panel regression model while SPSS Version 23.0 was used to generate the

relevant regression tests. The study finding indicated asset quality had insignificant positive effect on firm value among Kenya commercial bank. The effect of asset quality on financial performance was not taken into account and therefore a conceptual gap.

Ndiritu (2021) aimed at establishing how the bank sector asset quality is affected by the rate of interest. Bank sector loan assets served as a proxy to bank sector assets. Specifically, this paper sought to examine the nature of causality and to determine the relationship on interest rate and the bank asset quality. The study also examined the effect in short and long term. To achieve the study objective, the study utilized monthly data over the period January 2015 to February 2020. The study adopted Granger causality and ARDL bound test to establish the nature of causality and the correlation between the interest rate and bank sector asset quality. The long- and short-run impact of the rate of interest was examined using the ARDL model. The findings suggested bi-directional causality between bank asset quality and interest rate in Kenya. This research presents a conceptual gap as the effect of asset quality on financial performance was not established.

Gitau (2021) investigated the influence that credit risk had on performance of Dairy cooperatives in Kenya. The research adopted a descriptive panel design in which secondary data was utilized. Census sampling was chosen as a method of obtaining a sample and secondary data from a period spanning ten years from 2019 to 2018 obtained. A secondary data collection sheet was used in collecting data that was analyzed via multiple panel regression models. Results depicted that credit risk significantly impacted the return on investment, which measured performance of dairy marketing cooperatives tests for significance also indicated that the variables were

statistically substantial. The study focused on dairy cooperatives and therefore a contextual gap due to operational differences.

Orichom and Omeke (2020) examined how capital adequacy, efficiency, credit risk management, and performance of microfinance institutions were related with a focus on the agency theory. A cross-sectional was used in examining 64 MFIs in the country. Correlation and multiple regression were employed in the study of the data. Conclusions showed that CRM improves performance. Second, capital adequacy and efficiency were not significant to performance. Hence, credit risk appraisal, monitoring, and mitigation were crucial in the achievement of the performance of the institutions. It was however noted that capital adequacy did not substantially impact performance. The recommendation was that managers should institute risk preventive and control methods to lower credit risks and attain positive performance among MFIs. The study presents a conceptual gap as the effect of asset quality was not taken into account.

Otanga, Mule and Momanyi (2020) examined the effect of credit risk management on financial performance of DT-SACCOs in Western Kenya. Correlational research design was adopted and a census of the 19 DT-SACCOs for the period 2020 to 2017 was selected, yielding 95 data points. The findings show that CRM has a negative significant effect on financial performance indicating that a reduction in nonperforming loan ratio improves financial performance. The study presents a conceptual gap as the focus was on CRM while the current study focuses on asset quality.

2.5 Conceptual Framework

The projected relationship between the variables is depicted in Figure 2.1. The predictor variable was asset quality given by the ratio of NPLs to total loans. The control variables

were liquidity, firm size and capital adequacy. Financial performance was the response variable given by ROA.

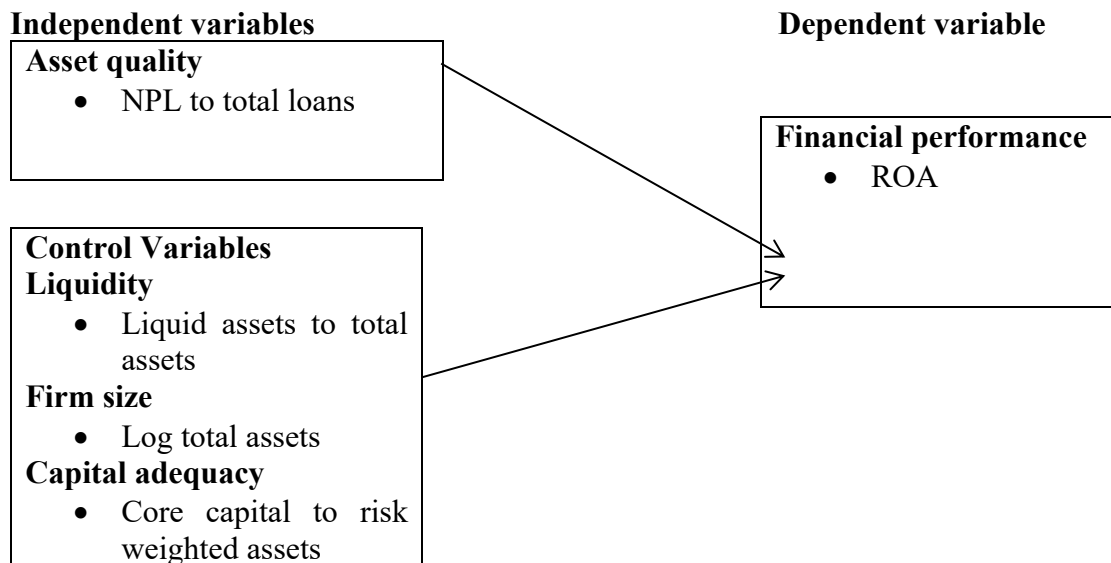


Figure 2.1: The Conceptual Model
Source: Researcher (2022)

2.6 Summary of the Literature Review and Research Gaps

Theoretical analyses demonstrated the anticipated link between asset quality and financial performance of banks. Significant financial performance influencers have been examined. Different findings have been drawn about the connection between asset quality and performance from the studies that have been analyzed. The discrepancies across the studies can be attributed to the various ways that researchers operationalized asset quality, demonstrating that the operationalization model affects the conclusions.

Contextual and conceptual gaps also arise from the above studies. Asset quality and bank's financial performance has largely been studied in developed countries and understudied in Kenya. The findings of these studies may not be replicated in commercial banks in Kenya, hence providing a contextual gap. Conceptual gap arise from the fact that the local studies adopted have measured asset quality differently which resulted in different findings, thus making the relationship between asset quality

and financial performance of banks inconclusive. The current research was founded on these gaps.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

The chapter describes the approaches utilized in accomplishing the study objective which was to establish how asset quality affects financial performance of commercial banks in Kenya. Particularly, the chapter highlights; the design, data collection, as well as analysis.

3.2 Research Design

To ascertain the relationship between asset quality and banks' financial performance, a descriptive approach was used. This design was suitable since the researcher was particularly interested in the phenomenon nature (Khan, 2018). Additionally, it was adequate for describing how the occurrences are related to one another. Additionally, this design validly and accurately represented the variables, providing satisfactory answers to the research questions (Cooper & Schindler, 2018). The design has been used before by previous authors such as Ikpesu and Oke (2022) and Otanga et al. (2020).

3.3 Population

Population for this study comprised all the 39 out of 41 operating banks in Kenya and regulated by the CBK as at December 2021. This is because 2 commercial banks were under receivership as at end of 2021. The population list is attached in appendix I.

3.4 Data Collection

Secondary data was relied on in this investigation. Data was extracted from CBK and published reports of banks for 5 years between 2017 and 2021. The period of 5 years was considered enough to acquire enough data for regression analysis. A data collection sheet (appendix II) was utilised as a data capture and collection tool. Data for banks

that were in operation for the entire period under study was considered. Any bank with incomplete data set (due to closure, merger or major acquisition) was eliminated from further analysis. The specific data collected included total assets, total liabilities, core capital, net income, NPLs, total loans, liquid assets, and risk weighted assets.

3.5 Diagnostic Tests

The linear regression is based on a number of assumptions including no autocorrelation, no or little multi-collinearity, homoscedasticity and multivariate normality.

The diagnostic tests performed are outlined in Table 3.1

Table 3.1: Diagnostic Tests

Test	Meaning	Statistical method	Interpretation	Data Diagnosis
Autocorrelation	Occurs when the residuals lack independence from each other.	Durbin-Watson statistic	When the test outcomes fall within critical values ($1.5 < d < 2.5$) there is no autocorrelation	Correlogram (Auto Correlation Function-ACF plot) Review model specifications
Heteroscedasticity	When data lacks similar variance as assumed by standard linear regression model	Breusch Pagan Test	Data split into high and low value. If data differ significantly, there is an element of heteroskedasticity	Non-linear transformation or Apply weighted least squares estimation method
Multivariate Normality Test	When linear regression analysis for all variables is multivariate normal	Goodness of fit test Shapiro-Wilk test	Shapiro-wilk prob.> 0.05. If the test is not significant, the distribution is possibly normal.	Data that was not normally distributed was adjusted for using log transformation

3.6 Data Analysis

The data was examined by employing SPSS software version 24. The findings were

presented quantitatively using tables and graphs. For every variable, computation of measures of central tendency, standard deviation and dispersion was done using descriptive statistics. Inferential statistics relied on correlation and regression. Correlation determined the magnitude of the relation between the study variables and a regression determined cause and effect among variables. A multivariate regression linearly determined the relation between dependent and independent variables.

3.6.1 Analytical Model

The equation shown below was appropriate:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Where: Y = Financial performance given by net income to total assets

β_0 = y intercept of the regression equation.

$\beta_1, \beta_2, \beta_3, \beta_4$ = are the regression coefficients

X_1 = Asset quality as measured by the ratio of NPLs to total loans

X_2 = Liquidity as measured by the ratio of liquid assets to total assets

X_3 = Firm size as measured by the natural logarithm of total assets

X_4 = Capital adequacy as given by the ratio of total core capital to risk weighted assets

ε = error term

3.6.2 Tests of Significance

Parametric tests established significance of the overall model and variables. ANOVA was used to do the F-test, which established the model's relevance, and a t-test, which determined the significance of each variable.

CHAPTER FOUR: DATA ANALYSIS RESULTS AND FINDINGS

4.1 Introduction

This chapter presents descriptive statistics and the results and interpretations of various tests namely; test of normality, Multicollinearity, heteroskedasticity tests, autocorrelation and stationarity test. The chapter also presents the results of Pearson correlation and regression analysis.

4.2 Descriptive Statistics

This section presents the descriptive findings from the collected data. The descriptive results include mean and standard deviation for each of the study variables. The analyzed data was obtained from CBK and individual Banks annual reports for a period of 5 years (2017 to 2021). The number of observations is 175 (35*5) as 35 Banks provided complete data for the 5 year period. The results are as shown in Table 4.1

Table 4.1: Descriptive Results

	N	Minimum	Maximum	Mean	Std. Deviation
ROA	175	-.246	.074	.01109	.039835
Asset quality	175	.001	.762	.17231	.137518
Liquidity	175	.002	2.865	.33524	.333243
Firm size	175	8.540	13.539	10.80026	1.349468
Capital adequacy	175	-.550	1.095	.19711	.131961
Valid N (listwise)	175				

Source: Field Data (2022)

4.3 Diagnostic Tests

The most suitable linear fair estimators were sampled before undertaking linear regression (BLUE). This study employed normality, homoscedasticity, multiple-collinearity, and autocorrelation tests. The Shapiro-Wilk test was used to estimate the

normality of data utilized in the analysis. The Breusch-Pagan test for homoscedasticity was employed to decide if the independent variables employed in the study have constant variance, while to establish multi-collinearity, Variance Inflation Factors (VIF) statistics were embraced. Autocorrelation was tested using the Durbin-Watson d statistic. Stationarity test were carried out using Levin-Lin Chu unit root test.

4.3.1 Normality Test

The normality of data can be tested using a variety of methods. The most commonly utilized approaches include the Shapiro–Wilk test, Kolmogorov–Smirnov test, skewness, kurtosis, histogram, P–P Plot, box plot, Q–Q Plot, mean and standard deviation. The most extensively used normality tests are the Kolmogorov–Smirnov test and the Shapiro–Wilk test. The Shapiro–Wilk test is better for small sample sizes ($n < 50$ samples), while it can also be used on more extensive samples selections, whereas the Kolmogorov–Smirnov test is better for $n > 50$ samples. As a result, the study used the Kolmogorov–Smirnov test as the numerical method of determining normality. For both of the above tests, the null hypothesis says that the data are obtained from a normal distribution population. When P-value is below 0.05, null hypothesis is rejected and the data are said to be not normally distributed.

Table 4.2: Test for Normality

	Kolmogorov-Smirnov	P-value
ROA	0.789	0.083
Asset quality	0.874	0.091
Liquidity	0.892	0.101
Firm size	0.975	0.128
Capital adequacy	0.923	0.120

Source: Research Findings (2022)

From Table 4.2 results, all the study variables have a p value more than 0.05 and therefore were normally distributed.

4.3.2 Multicollinearity Test

Multicollinearity occurs when the independent variables in a regression model are significantly linked. Multicollinearity was assessed using the VIF and tolerance indices. When the VIF value is higher than ten and the tolerance score is less than 0.2, multicollinearity is present, and the assumption is broken. The VIF values are less than 10, indicating no problem with multicollinearity.

Table 4.3: Multicollinearity

Variable	Collinearity Statistics	
	Tolerance	VIF
Asset quality	0.672	1.488
Liquidity	0.598	1.672
Firm size	0.734	1.362
Capital adequacy	0.671	1.490

Source: Research Findings (2022)

4.3.3 Heteroskedasticity Test

The residual variance from the model must be constant and unrelated to the independent variable in linear regression models calculated using the Ordinary Least Squares (OLS) method(s). Homoskedasticity refers to constant variance, whereas heteroscedasticity refers to non-constant variance (Field, 2009). The study used the Breusch-Pagan/Cook-Weisberg test to check if the variation was heteroskedastic. The null hypothesis implies constant variance, indicating that the data is homoscedastic. The results are as shown in Table 4.4.

Table 4.4: Heteroskedasticity Results

Breusch-Pagan / Cook-Weisberg test for heteroscedasticity

chi2(1)	=	0.3418
Prob > chi2	=	0.1629

Source: Research Findings (2022)

Table 4.4 reveals that the null hypothesis was not rejected since the p-value was 0.1629, which was statistically significant ($p > 0.05$). As a result, the dataset had homoskedastic variances. Since the P-values of Breusch-Pagan’s test for homogeneity of variances were greater than 0.05. The test therefore confirmed homogeneity of variance. The data can therefore be used to conduct panel regression analysis.

4.3.4 Autocorrelation Test

Serial correlation, also known as autocorrelation, makes the standard errors of coefficients appear to be less than in linear panel data models, resulting in higher R-squared and erroneous hypothesis testing. Autocorrelation was tested using Durbin-Watson test. Error terms of regression variables are uncorrelated if Durbin-Watson test is equivalent to 2 (i.e. between 1 and 3). The closer the value to 2 is; the better. The results are as shown in Table 4.5.

Table 4.5: Test of Autocorrelation

Durbin Watson Statistic
2.117

Source: Research Findings (2022)

The results in Table 4.7 show that the Durbin-Watson statistic was 2.117. This shows that the error terms of regression variables are uncorrelated as the Durbin-Watson statistic was close to 2.

4.3.5 Stationarity Test

The research variables were subjected to a panel data unit-root test to establish if the data was stationary. The unit root test was Levin-Lin Chu unit root test. At a standard statistical significance level of 5%, the test was compared to their corresponding p-values. In this test, the null hypothesis is that every panel has a unit root, and the alternative hypothesis is that at least one panel is stationary. Table 4.6 shows Levin-Lin Chu unit root test results.

Table 4.6: Levin-Lin Chu unit-root test

Levin-Lin Chu unit-root test			
Variable	Hypothesis	p value	Verdict
ROA	Ho: Panels contain unit roots	0.0000	Reject Ho
Asset quality	Ho: Panels contain unit roots	0.0000	Reject Ho
Liquidity	Ho: Panels contain unit roots	0.0000	Reject Ho
Firm size	Ho: Panels contain unit roots	0.0000	Reject Ho
Capital adequacy	Ho: Panels contain unit roots	0.0000	Reject Ho

Source: Research Findings (2022)

As demonstrated in Table 4.6, this test concludes that the data is stationary at a 5% level of statistical significance since the p-values all fall below 0.05.

4.4 Correlation Results

To determine the degree and direction of link between each predictor variable and the response variable, correlation analysis was carried out. The correlation findings in Table 4.7 display correlation nature between the research variables in relation to magnitude and direction. The correlation results disclose that asset quality and ROA have a negative as well as significant correlation ($r=-0.572$) at 5% significance level. The relationship between liquidity and ROA was positive and significant ($r=0.154$) at 5 % significance level. The results also disclose that firm size has a moderate positive as well as significant link with ROA of banks in Kenya ($r=0.533$) at 5 percent

significance level. Capital adequacy had positive as well as significant relation with ROA ($r=0.352$) at 5% significance level.

Table 4.7: Correlation Results

		ROA	Asset quality	Liquidity	Firm size	Capital adequacy
ROA	Pearson Correlation	1				
	Sig. (2-tailed)					
Asset quality	Pearson Correlation	-.572**	1			
	Sig. (2-tailed)	.000				
Liquidity	Pearson Correlation	.154*	-.210**	1		
	Sig. (2-tailed)	.042	.005			
Firm size	Pearson Correlation	.533**	-.381**	.165*	1	
	Sig. (2-tailed)	.000	.000	.029		
Capital adequacy	Pearson Correlation	.352**	-.385**	.038	-.106	1
	Sig. (2-tailed)	.000	.000	.621	.163	

** . Correlation is significant at the 0.01 level (2-tailed).
 * . Correlation is significant at the 0.05 level (2-tailed).
 c. Listwise N=175

Source: Research Findings (2022)

4.5 Regression Results

To determine the extent to which ROA is described by the chosen variables, regression analysis was used. In Table 4.8, the regression's findings are displayed.

Table 4.8: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.777 ^a	.604	.595	.025356

a. Predictors: (Constant), Capital adequacy, Liquidity, Firm size, Asset quality

Source: Research Findings (2022)

From the conclusions as epitomized by the R^2 , the studied independent variables explained variations of 0.604 in ROA among banks in Kenya. This suggests that other factors not incorporated in this study account for 39.6% of the variability in ROA among banks in Kenya, while the four variables account for 60.4% of the variations.

Table 4.9: ANOVA Analysis

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	.167	4	.042	64.864	.000 ^b
Residual	.109	170	.001		
Total	.276	174			

a. Dependent Variable: ROA

b. Predictors: (Constant), Capital adequacy, Liquidity, Firm size, Asset quality

Source: Research Findings (2022)

The data had a 0.000 significance level, according to Table 4.9's ANOVA results, which suggests that the model is the best choice for drawing conclusions about the variables.

Table 4.9: Regression Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
1 (Constant)	-.129	.020		-6.355	.000
Asset quality	-.100	.017	-.346	-5.804	.000
Liquidity	.038	.006	.318	6.404	.000
Firm size	.014	.002	.484	8.832	.000
Capital adequacy	.085	.017	.282	5.149	.000

a. Dependent Variable: ROA

Source: Research Findings (2022)

The coefficient of regression model was as below;

$$Y = -0.129 - 0.346X_1 + 0.318X_2 + 0.484X_3 + 0.282X_4$$

Where:

$Y = \text{ROA}$; $X_1 = \text{Asset quality}$; $X_2 = \text{liquidity}$; $X_3 = \text{Firm size}$ $X_4 = \text{Capital adequacy}$

4.6 Discussion of Research Findings

The objective of this research was to establish the effect of asset quality on ROA of banks in Kenya. The study utilized a descriptive design while population was the 39 banks in Kenya. Complete data was obtained from 35 banks in Kenya and which were considered adequate for regression analysis. The research utilized secondary data which was gotten from CBK and individual banks annual reports. The specific attribute of asset quality considered was NPLs to total loans. The control variables were liquidity, firm size and capital adequacy. Both descriptive as well as inferential statistics were used to analyze the data. The results are discussed in this section.

Multivariate regression results revealed that the R square was 0.604 implying 60.4% of changes in ROA of banks are due to four variables alterations selected for this study. This means that variables not considered explain 39.6% of changes in ROA. The overall model was also statistically significant as the p value was 0.000 which is less than the significance level of 0.05. This implies that the overall model had the required goodness of fit.

The multivariate regression analysis further revealed that individually, asset quality exhibited a negative effect on ROA of banks as shown by ($\beta=-0.346$, $p=0.000$). Liquidity has a positive and significant effect on ROA of banks ($\beta=0.318$, $p=0.000$). Firm size and capital adequacy exhibited a positive and significant influence on ROA of banks in Kenya as shown by ($\beta=0.484$, $p=0.000$) and ($\beta=0.282$, $p=0.000$) respectively.

These conclusions concur with those of Gitau (2021) who investigated the influence that credit risk had on performance of Dairy cooperatives in Kenya. The research adopted a descriptive panel design in which secondary data was utilized. Census

sampling was chosen as a method of obtaining a sample and secondary data from a period spanning ten years from 2019 to 2018 obtained. A secondary data collection sheet was used in collecting data that was analyzed via multiple panel regression models. Results depicted that credit risk significantly impacted the return on investment, which measured performance of dairy marketing cooperatives tests for significance also indicated that the variables were statistically substantial.

The research findings also concur with Ayuni and Anggraeni (2022) who conducted a research to determine the role of liquidity, asset quality, sensitivity, efficiency and financial performance on capital in state banks. This study used secondary data taken from first period quarterly of 2018 until the fourth quarterly of 2019 of government banks. This study used census that consisted of 9 banks. The data were processed by using SPSS 21. The result of this study revealed that asset quality and performance simultaneously have significant effect on capital of state banks.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The key aim of the research was determining how asset quality influences the profitability of banks in Kenya. This section includes a summary of the findings from the previous chapter as well as the conclusions and limitations of the study. Additionally, it makes recommendations for potential policy measures. The chapter provides recommendations for further research

5.2 Summary

The objective of this research was to establish the effect of asset quality on ROA of banks in Kenya. The study utilized a descriptive design while population was the 39 banks in Kenya. Complete data was obtained from 35 banks in Kenya and which were considered adequate for regression analysis. The research utilized secondary data which was gotten from CBK and individual banks annual reports. The specific attribute of asset quality considered was NPLs to total loans. The control variables were liquidity, firm size and capital adequacy. Both descriptive as well as inferential statistics were used to analyze the data. The results are summarized in this section.

The correlation results disclose that asset quality and ROA have a negative as well as significant correlation at 5% significance level. The relationship between liquidity and ROA was positive and significant at 5 % significance level. The results also disclose that firm size has a moderate positive as well as significant link with ROA of banks in Kenya at 5 percent significance level. Capital adequacy had positive as well as significant relation with ROA.

Multivariate regression results revealed that the R square was 0.604 implying 60.4% of changes in ROA of banks are due to four variables alterations selected for this study. This means that variables not considered explain 39.6% of changes in ROA. The overall model was also statistically significant as the p value was 0.000 which is less than the significance level of 0.05. This implies that the overall model had the required goodness of fit.

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5.3 Conclusions

The study purpose of the research was to find out the association between asset quality and ROA among banks in Kenya. The findings indicated that asset quality had a negative as well as significant impact on ROA. This may imply that banks with high asset quality have low levels of ROA. Asset quality management is therefore necessary to achieve the targeted performance. The study concludes that asset quality affects ROA among banks in Kenya in a negative manner.

Additionally, the outcomes revealed that liquidity has a significant positive effect on ROA. This implies that firms with low levels of liquid assets compared to their assets end up having a lower ROA. This can be explained by the inability of illiquid firms to take advantage of investment opportunities when they arise.

It was established that the influence of firm size on ROA among commercial banks in Kenya was positive and statistically significant. The results therefore imply that bigger banks are likely to perform better compared to small banks. This can be explained by the fact that bigger banks have more developed structures that help them to manage operations better while at the same time they are able to enjoy the goodwill that comes with size.

The study conclusions revealed that capital adequacy had a positive as well as significant effect on ROA. This may mean that the banks that have adequate capital are able to meet their obligations when they fall due and are also able to take advantage of investment opportunities that might arise in the course of doing business and therefore high levels of ROA compared with firms that has less capital adequacy.

5.4 Recommendations for Policy and Practice

The research findings reveal that asset quality had a negative as well as significant impact on ROA. The research therefore commends that the administrators of banks should work on reducing the level of non-performing loans. This can be achieved by coming with effective asset quality management methods that will enable the bank distinguish between good and bad borrowers.

Further, liquidity was discovered to possess a significant and positive impact on ROA. The research therefore commends that management of banks in Kenya should ensure that they do not over commit their assets by giving excess loans as this will likely lead to reduced ROA. The banks should come up with effective liquidity management strategies. Regulators should ensure that the banks do not led beyond a certain set limit of their asset base.

The research findings revealed that firm size has a positive and significant effect on the financial performance of a bank. The study recommends the need for management of the commercial banks and policy makers in the banking industry should come up with policies guiding the banks on how to manage their assets as this will go a long way in enhancing their profitability.

From the study findings, capital adequacy was found to enhance ROA of banks, this study recommends that banks should keep adequate capital levels to sustain their obligations when they fall due whereas simultaneously time enjoying short term investment chances which may arise. The policy makers should set a limit of the capital adequacy level that banks should have as too much capital adequacy is also disadvantageous as it comes with opportunity costs.

5.5 Limitations of the Study

The focus was on various factors which are thought to influence financial performance of Kenyan banks. The research focused on four explanatory variables in particular. However, in certainty, there is presence of other variables probable to influence ROA of banks including internal like corporate governance attributes and management efficiency whereas others are beyond the control of the firm like interest rates as well as political stability.

In this study, a five-year period from 2017 to 2021 was selected. There is no proof that comparable results will remain the same across a longer time frame. Moreover, it is impossible to predict if the same outcomes would persist until 2021. Given that additional time contains instances of big economic transitions like recessions and booms, it is more dependable.

The quality of the data was the main restriction for this study. It is not possible to conclusively conclude that the study's findings accurately reflect the current reality. It has been presumed that the data utilized in the study are accurate. Due to the current conditions, there has also been a great deal of incoherence in the data measurement. The study made use of secondary data rather than primary data. Due to the limited availability of data, only some of the ROA drivers have been considered.

The data analysis was performed using regression models. Because of the limitations associated with using the model, like inaccurate or erroneous findings resulting from a change in the variable value, the researchers would not be able to generalize the conclusions precisely. A regression model cannot be performed using the prior model after data is added to it.

5.6 Suggestions for Further Research

This study focused on banks in Kenya. Further studies can focus on a wide scope by covering other financial institutions in Kenya to back or contradict the results of the current study. Further, this study focused on NPLs to total loans as a measure of asset quality. Future studies should focus on other asset quality measures that were not considered in this study.

The current research scope was restricted to five years; more research can be done past five years to determine whether the results might persist. Thus, inherent future studies may use a wider time span, that can either support or criticize the current research conclusions. The scope of the study was additionally constrained in terms of context where banks were examined. Further studies can be extended to other financial firms to establish if they complement or contradict the current study findings. Researchers in the East African region, the rest of Africa, and other global jurisdictions can too perform

the research in these jurisdictions to ascertain if the current research conclusions would persist.

The research only used secondary data; alternate research may use primary data sources such in-depth questionnaires and structured interviews given to practitioners and stakeholders. These can then affirm or criticize the results of the current research. This study used multiple linear regression and correlation analysis; future research could use other analytic techniques such factor analysis, cluster analysis, granger causality, discriminant analysis, and descriptive statistics, among others.

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APPENDICES

Appendix I: Commercial Banks in Kenya

1. ABSA Kenya Plc
2. Access Bank (Kenya) Plc
3. African Banking Corporation Ltd
4. Bank of Africa Kenya Ltd
5. Bank of Baroda Ltd
6. Bank of India
7. Citibank N.A Kenya
8. Consolidated Bank of Kenya Ltd
9. Co-operative Bank of Kenya Ltd
10. Credit Bank Ltd
11. Development Bank of Kenya Ltd
12. Diamond Trust Bank (K) ltd
13. DIB Bank Kenya Ltd
14. Ecobank Kenya Ltd
15. Equity Bank Kenya Ltd
16. Family Bank Ltd
17. First Community Bank Ltd
18. Guaranty Trust Bank (Kenya) Ltd
19. Guardian Bank Ltd
20. Gulf African Bank Ltd
21. Habib Bank A.G Zurich
22. HFC Limited

23. I&M Bank Ltd
24. KCB Bank Kenya LTD
25. Kingdom Bank Ltd
26. Mayfair CIB Bank Ltd
27. Middle East Bank Ltd
28. M-Oriental Commercial Bank Ltd
29. National Bank of Kenya Ltd
30. NCBA Bank Kenya Ltd
31. Paramount Bank Ltd
32. Prime Bank Ltd
33. SBM Bank (Kenya) Ltd
34. Sidian Bank Ltd
35. Spire Bank Ltd
36. Stanbic Bank Kenya Ltd
37. Standard Chartered Bank (K) Ltd
38. UBA Bank Kenya Ltd
39. Victoria Commercial Bank Ltd

Source: CBK (2021)

Appendix II: Research Data

Bank	Year	ROA	Asset quality	Liquidity	Firm size	Capital adequacy
African Banking Corporation Ltd	2021	0.005	0.156	0.088	10.393	0.093
Bank of Africa Kenya Ltd	2021	-0.015	0.398	0.300	10.713	0.080
Bank of Baroda (K) Ltd	2021	0.035	0.124	0.715	12.022	0.198
Bank of India	2021	0.036	0.047	0.729	11.227	0.351
Absa Bank Kenya Ltd	2021	0.022	0.074	0.247	12.842	0.172
Citibank N.A Kenya	2021	0.052	0.028	0.622	11.575	0.228
NCBA Bank Kenya PLC	2021	0.014	0.139	0.169	13.105	0.156
Consolidated Bank of Kenya Ltd	2021	-0.020	0.240	0.205	9.464	0.090
Credit Bank Ltd	2021	0.000	0.115	0.005	10.050	0.163
Co-operative Bank of Kenya Ltd	2021	0.034	0.168	0.334	13.116	0.191
Development Bank of Kenya Ltd	2021	0.001	0.337	0.041	9.754	0.386
Diamond Trust Bank (K) Ltd	2021	0.013	0.119	0.244	12.651	0.229
Ecobank Kenya Ltd	2021	0.000	0.163	0.002	11.456	0.072
Equity Bank Ltd	2021	0.021	0.120	0.223	13.412	0.141
Family Bank Ltd	2021	0.015	0.149	0.149	11.414	0.162
First Community Bank Ltd	2021	0.011	0.361	0.234	9.996	0.044
Guaranty Trust Bank (Kenya) Ltd	2021	0.016	0.208	0.246	10.350	0.254
Guardian Bank Ltd	2021	0.005	0.128	0.086	9.733	0.201
Gulf African Bank Ltd	2021	0.015	0.176	0.194	10.536	0.155
Habib Bank A.G Zurich	2021	0.017	0.122	0.359	10.211	0.130
I & M Bank Ltd	2021	0.036	0.126	0.555	12.555	0.193
Jamii Bora Bank (Kingdom Bank)	2021	-0.004	0.762	0.077	10.329	0.202
KCB Bank Kenya Ltd	2021	0.031	0.123	0.311	13.539	0.173
Middle East Bank (K) Ltd	2021	0.010	0.103	0.187	9.308	0.127
National Bank of Kenya Ltd	2021	0.003	0.354	0.035	11.751	0.066

Bank	Year	ROA	Asset quality	Liquidity	Firm size	Capital adequacy
M Oriental Bank Ltd	2021	0.003	0.234	0.051	9.472	0.261
Paramount Bank Ltd	2021	0.009	0.171	0.175	9.339	0.189
Prime Bank Ltd	2021	0.016	0.109	0.321	11.663	0.255
Standard Chartered Bank (K) Ltd	2021	0.022	0.146	0.262	12.694	0.153
Spire Bank Ltd	2021	-0.246	0.708	0.278	8.540	-0.550
Sidian Bank Ltd	2021	0.003	0.115	0.047	10.419	0.154
Stanbic Bank Kenya Ltd	2021	0.020	0.142	0.284	12.673	0.189
Trans-National (Access Bank Plc)	2021	-0.198	0.046	2.413	9.225	0.180
UBA Kenya Bank Ltd	2021	0.003	0.407	0.053	9.839	0.291
Victoria Commercial Bank Ltd	2021	0.013	0.066	0.223	10.542	0.216
African Banking Corporation Ltd	2020	0.006	0.177	0.101	10.264	0.107
Bank of Africa Kenya Ltd	2020	-0.067	0.399	0.229	10.692	0.041
Bank of Baroda (K) Ltd	2020	0.038	0.084	0.705	11.873	0.193
Bank of India	2020	0.045	0.089	0.798	11.044	0.318
Absa Bank Kenya Ltd	2020	0.032	0.066	0.358	12.832	0.188
Citibank N.A Kenya	2020	0.058	0.041	0.602	11.478	0.253
NCBA Bank Kenya PLC	2020	0.020	0.125	0.354	13.050	0.177
Consolidated Bank of Kenya Ltd	2020	-0.044	0.295	0.423	9.381	0.131
Credit Bank Ltd	2020	0.014	0.101	0.169	9.978	0.169
Co-operative Bank of Kenya Ltd	2020	0.045	0.111	0.439	13.016	0.190
Development Bank of Kenya Ltd	2020	0.074	0.341	0.734	9.639	0.509
Diamond Trust Bank (K) Ltd	2020	0.032	0.083	0.581	12.568	0.223
Ecobank Kenya Ltd	2020	0.003	0.198	0.080	11.230	0.109
Equity Bank Ltd	2020	0.051	0.090	0.471	13.137	0.164
Family Bank Ltd	2020	0.017	0.152	0.176	11.275	0.193
First Community Bank Ltd	2020	0.010	0.397	0.185	9.840	0.038

Bank	Year	ROA	Asset quality	Liquidity	Firm size	Capital adequacy
Guaranty Trust Bank (Kenya) Ltd	2020	0.017	0.185	0.267	10.278	0.311
Guardian Bank Ltd	2020	0.015	0.095	0.269	9.704	0.193
Gulf African Bank Ltd	2020	0.006	0.147	0.081	10.467	0.153
Habib Bank A.G Zurich	2020	0.016	0.112	0.321	10.120	0.184
I & M Bank Ltd	2020	0.047	0.123	0.648	12.446	0.193
Jamii Bora Bank Ltd	2020	-0.133	0.565	0.293	9.124	0.142
KCB Bank Kenya Ltd	2020	0.049	0.074	0.458	13.421	0.170
Middle East Bank (K) Ltd	2020	0.007	0.141	0.114	9.044	0.161
National Bank of Kenya Ltd	2020	-0.007	0.415	0.098	11.627	0.072
M Oriental Bank Ltd	2020	0.005	0.189	0.101	9.425	0.284
Paramount Bank Ltd	2020	0.008	0.176	0.185	9.254	0.196
Prime Bank Ltd	2020	0.023	0.117	0.449	11.597	0.264
Standard Chartered Bank (K) Ltd	2020	0.042	0.139	0.440	12.619	0.156
Spire Bank Ltd	2020	-0.066	0.515	0.092	8.833	-0.310
Sidian Bank Ltd	2020	0.002	0.206	0.027	10.183	0.214
Stanbic Bank Kenya Ltd	2020	0.028	0.118	0.350	12.587	0.184
Trans-National Bank Ltd	2020	-0.006	0.300	0.063	9.140	0.232
UBA Kenya Bank Ltd	2020	0.007	0.230	0.115	9.686	0.323
Victoria Commercial Bank Ltd	2020	0.019	0.049	0.321	10.493	0.221
African Banking Corporation Ltd	2019	0.006	0.227	0.093	10.211	0.137
Bank of Africa Kenya Ltd	2019	0.004	0.362	0.072	10.801	0.114
Bank of Baroda (K) Ltd	2019	0.042	0.090	0.750	11.720	0.197
Bank of India	2019	0.039	0.070	0.726	11.046	0.307
Barclays Bank of Kenya Ltd	2019	0.032	0.074	0.376	12.694	0.182
Citibank N.A Kenya	2019	0.066	0.030	0.615	11.358	0.341

Bank	Year	ROA	Asset quality	Liquidity	Firm size	Capital adequacy
NCBA Bank Kenya PLC	2019	0.034	0.078	0.421	12.356	0.007
Consolidated Bank of Kenya Ltd	2019	-0.027	0.253	0.251	9.464	0.182
Credit Bank Ltd	2019	0.019	0.083	0.193	9.787	0.200
Co-operative Bank of Kenya Ltd	2019	0.043	0.112	0.423	12.920	0.138
Development Bank of Kenya Ltd	2019	0.011	0.287	0.316	9.637	0.309
Diamond Trust Bank (K) Ltd	2019	0.033	0.072	0.537	12.559	0.194
Ecobank Kenya Ltd	2019	0.003	0.217	0.049	10.905	0.126
Equity Bank Ltd	2019	0.056	0.074	0.494	12.991	0.164
Family Bank Ltd	2019	0.006	0.173	0.062	11.111	0.220
First Community Bank Ltd	2019	-0.016	0.462	0.281	9.791	0.053
Guaranty Trust Bank (Kenya) Ltd	2019	0.012	0.189	0.178	10.139	0.316
Guardian Bank Ltd	2019	0.022	0.099	0.318	9.692	0.181
Gulf African Bank Ltd	2019	0.009	0.109	0.098	10.414	0.163
Habib Bank A.G Zurich	2019	0.017	0.090	0.331	9.977	0.183
I & M Bank Ltd	2019	0.038	0.146	0.489	12.342	0.193
Jamii Bora Bank Ltd	2019	-0.038	0.696	0.685	9.211	0.305
KCB Bank Kenya Ltd	2019	0.050	0.069	0.499	13.340	0.185
Middle East Bank (K) Ltd	2019	0.000	0.400	0.003	8.587	0.348
National Bank of Kenya Ltd	2019	0.005	0.476	0.072	11.654	0.021
M Oriental Bank Ltd	2019	0.010	0.096	0.150	9.261	0.182
Paramount Bank Ltd	2019	0.015	0.173	0.315	9.199	0.194
Prime Bank Ltd	2019	0.021	0.074	0.449	11.498	0.270
Standard Chartered Bank (K) Ltd	2019	0.040	0.163	0.413	12.559	0.158
Spire Bank Ltd	2019	-0.033	0.440	0.253	9.129	-0.251
Sidian Bank Ltd	2019	-0.022	0.209	0.267	10.140	0.228
Stanbic Bank Kenya Ltd	2019	0.031	0.107	0.416	12.546	0.168
Trans-National Bank Ltd	2019	-0.010	0.242	0.118	9.234	0.205

Bank	Year	ROA	Asset quality	Liquidity	Firm size	Capital adequacy
UBA Kenya Bank Ltd	2019	0.002	0.128	0.034	9.638	0.360
Victoria Commercial Bank Ltd	2019	0.017	0.031	0.328	10.384	0.238
African Banking Corporation Ltd	2018	0.008	0.216	0.127	10.119	0.124
Bank of Africa Kenya Ltd	2018	0.001	0.315	0.010	10.900	0.148
Bank of Baroda (K) Ltd	2018	0.053	0.061	0.771	11.473	0.209
Bank of India	2018	0.047	0.021	0.801	10.944	0.238
Barclays Bank of Kenya Ltd	2018	0.037	0.071	0.375	12.512	0.205
Citibank N.A Kenya	2018	0.065	0.045	0.670	11.495	0.291
NCBA Bank Kenya PLC	2018	0.031	0.061	0.533	12.344	0.109
Consolidated Bank of Kenya Ltd	2018	-0.033	0.251	0.344	9.507	0.040
Credit Bank Ltd	2018	0.012	0.086	0.131	9.579	0.226
Co-operative Bank of Kenya Ltd	2018	0.043	0.071	0.413	12.855	0.206
Development Bank of Kenya Ltd	2018	0.004	0.216	0.115	9.700	0.211
Diamond Trust Bank (K) Ltd	2018	0.031	0.076	0.466	12.506	0.169
Ecobank Kenya Ltd	2018	-0.027	0.386	0.488	10.887	0.126
Equity Bank Ltd	2018	0.057	0.067	0.484	12.915	0.198
Family Bank Ltd	2018	-0.020	0.202	0.212	11.143	0.227
First Community Bank Ltd	2018	0.013	0.400	0.207	9.762	0.095
Guaranty Trust Bank (Kenya) Ltd	2018	0.009	0.103	0.129	10.227	0.317
Guardian Bank Ltd	2018	0.014	0.109	0.235	9.668	0.176
Gulf African Bank Ltd	2018	0.008	0.080	0.097	10.352	0.163
Habib Bank A.G Zurich	2018	0.022	0.104	0.393	9.837	0.201
I & M Bank Ltd	2018	0.041	0.139	0.454	12.122	0.222
Jamii Bora Bank Ltd	2018	-0.059	0.212	0.571	9.461	0.407
KCB Bank Kenya Ltd	2018	0.049	0.083	0.450	13.228	0.162
Middle East Bank (K) Ltd	2018	-0.008	0.444	0.143	8.541	0.292

Bank	Year	ROA	Asset quality	Liquidity	Firm size	Capital adequacy
National Bank of Kenya Ltd	2018	0.007	0.406	0.081	11.608	0.035
M Oriental Bank Ltd	2018	0.011	0.105	0.146	9.266	0.373
Paramount Bank Ltd	2018	0.010	0.123	0.204	9.163	0.201
Prime Bank Ltd	2018	0.026	0.057	0.426	11.244	0.190
Standard Chartered Bank (K) Ltd	2018	0.033	0.126	0.359	12.561	0.158
Spire Bank Ltd	2018	-0.141	0.342	2.865	9.319	0.145
Sidian Bank Ltd	2018	-0.033	0.211	0.372	9.868	0.235
Stanbic Bank Kenya Ltd	2018	0.023	0.076	0.300	12.386	0.182
Trans-National Bank Ltd	2018	0.005	0.217	0.056	9.239	0.237
UBA Kenya Bank Ltd	2018	0.002	0.046	0.023	8.780	0.515
Victoria Commercial Bank Ltd	2018	0.033	0.001	0.517	10.165	0.284
African Banking Corporation Ltd	2017	0.010	0.189	0.146	10.018	0.147
Bank of Africa Kenya Ltd	2017	0.000	0.288	0.004	10.933	0.162
Bank of Baroda (K) Ltd	2017	0.047	0.089	0.958	11.325	0.208
Bank of India	2017	0.046	0.014	0.794	10.775	0.321
Barclays Bank of Kenya Ltd	2017	0.040	0.065	0.335	12.467	0.211
Citibank N.A Kenya	2017	0.058	0.029	0.672	11.546	0.296
NCBA Bank Kenya PLC	2017	0.036	0.071	0.615	12.259	0.120
Consolidated Bank of Kenya Ltd	2017	-0.020	0.198	0.193	9.541	0.079
Credit Bank Ltd	2017	0.013	0.081	0.128	9.409	0.265
Co-operative Bank of Kenya Ltd	2017	0.052	0.047	0.439	12.766	0.200
Development Bank of Kenya Ltd	2017	0.006	0.257	0.157	9.706	0.300
Diamond Trust Bank (K) Ltd	2017	0.036	0.039	0.526	12.405	0.175
Ecobank Kenya Ltd	2017	-0.061	0.196	0.245	10.761	0.216
Equity Bank Ltd	2017	0.060	0.070	0.453	12.847	0.185
Family Bank Ltd	2017	0.009	0.131	0.070	11.148	0.289

Bank	Year	ROA	Asset quality	Liquidity	Firm size	Capital adequacy
First Community Bank Ltd	2017	-0.003	0.323	0.032	9.613	0.116
Guaranty Trust Bank (Kenya) Ltd	2017	0.022	0.074	0.067	10.296	0.330
Guardian Bank Ltd	2017	0.021	0.082	0.245	9.596	0.175
Gulf African Bank Ltd	2017	0.028	0.097	0.308	10.209	0.195
Habib Bank A.G Zurich	2017	0.037	0.029	0.524	9.743	0.247
I & M Bank Ltd	2017	0.053	0.049	0.532	12.008	0.238
Jamii Bora Bank Ltd	2017	-0.031	0.204	0.118	9.663	0.332
KCB Bank Kenya Ltd	2017	0.056	0.076	0.490	13.132	0.188
Middle East Bank (K) Ltd	2017	-0.019	0.297	0.375	8.563	0.294
National Bank of Kenya Ltd	2017	0.001	0.437	0.015	11.626	0.103
M Oriental Bank Ltd	2017	0.004	0.120	0.048	9.202	0.389
Paramount Bank Ltd	2017	0.011	0.125	0.220	9.151	0.203
Prime Bank Ltd	2017	0.036	0.046	0.522	11.087	0.198
Standard Chartered Bank (K) Ltd	2017	0.051	0.113	0.467	12.430	0.189
Spire Bank Ltd	2017	-0.070	0.159	1.150	9.533	0.184
Sidian Bank Ltd	2017	0.003	0.170	0.025	9.946	0.277
Stanbic Bank Kenya Ltd	2017	0.034	0.059	0.396	12.230	0.237
Trans-National Bank Ltd	2017	0.015	0.127	0.147	9.256	0.246
UBA Kenya Bank Ltd	2017	0.009	0.022	0.085	8.631	1.095
Victoria Commercial Bank Ltd	2017	0.036	0.022	0.562	10.017	0.309

