THE EFFECTS OF NON-PERFORMING LOANS ON OPERATIONAL EFFICIENCY OF COMMERCIAL BANKS IN KENYA

BY

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DECLARATION

This research project is my original work and has not been presented for a degree at any other university for examination.

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

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DEDICATION

I would like to earnestly dedicate this project to my dear wife Bilha Wanjie for the support and helping out through the project and study for the degree. Special dedication to my daughter Zara Makena for laughter, cries, deleting and tearing of my printed works throughout the project, study and assignments over the course.

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LIST OF ABBREVIATIONS AND ACRONYMS

AQ - Asset Quality

CA - Capital Adequacy

CAMEL - Capital Adequacy, Asset Quality, Management efficiency, Liquidity

CBK – Central Bank of Kenya

CBR – Central Bank rate

EDF - Expected Default Frequencies

IMF – International Monetary Fund

KBRR – Kenya Bank's Reference Rate

LGD - Loss Given Default

LLP - Loan Loss Provisions

LM - Liquidity management

NIMs - Net Interest Margins

OE - Operational Efficiency

PBT – Profit before Tax

ROA - Return on Assets

SME – Small and Medium - Sized Enterprises

WB – World Bank

ABSTRACT

Nonperforming loans are considered as one of the major pain points for commercial banks loan assets portfolio. They have a cumulative effect on the total earnings of the banks. This leads to reduction of income and consequently effect on liquidity. Liquidity problems lead to working capital problems which in turn affects operations of the firms. The objective of this research was to study and investigate the effects of non-performing loans on operational efficiency of the Kenyan commercial banks. The basic questions that guided the study were; What are the major causes of NPLs in Kenyan banks, and

To what extent do nonperforming loans affect operational efficiency of commercial banks in Kenya

The research adopted an investigative and exploratory design that sought to analyse and correlate the effects of non-performing loans to the daily operational efficiency of Commercial Banks in Kenya. Secondary data from financial statements of 43 commercial banks and the central bank analysis was used to analyse and come up with conclusions and recommendations. Regression analysis was used to correlate and analyse the data.

The findings from analysis show that there is a negative relationship between operational efficiency and NPLs for commercial banks in the country. The major recommendation was that, banks should employ appropriate measures to reduce levels of NPLs and in turn will reap from reduced operational inefficiencies. This study did however not conclusively research on the effects of NPLs on operational efficiency of commercial banks and Kenya, and therefore suggest for further research to be done in the area, to exhaustively relate the effects.

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Nonperforming loans have been one single largest cause of irritation to the banking industry across the globe (Sontakke and Tiwari, 2013). NPLs eat into the expected interest income of commercial banks and therefore affect the net income of the organisations. Various research and literatures show, there has been a significant increase in problem of NPLs facing banks both in emerging and matured economies (Tendia *et al.* 2012). Financial performance of banks is highly dependent on interest income as it is the major source of income compared to non-interest income generating activities. Comparing the statement of income of different banks in Kenya and around the world over years, interest income is the substantial profit generating item. Therefore, NPLs have great impact on a high percentage of income generating variable.

This study will be guided by the Stakeholder Theory, Adverse selection theory and the Moral Hazard theory. These theories explain how credit risk, information symmetry and prudence, affect lending decisions and determine the levels of NPAs of banks. Bad and doubtful debts have been a concept of study for several years, to establish their cause, drivers, treatment in financial books and the possible remedies. Different studies have had different findings, though most show that, NPAs and operational efficiency have a negative relationship.

For the last two decades, Kenyan banks have experienced increase in levels of nonperforming loans. From 1998 to 2015, the average value for NPLs in Kenya during that period was 16.3%; with a minimum of 4.43% in 2011 and a maximum of 34.9% in 2003. Globally, the average of NPLs stands at 7.1% of gross loans (The Global Economy, 2016). In 2014 and 2015, the World Bank (WB) and IMF issued warnings to Kenyan Banks over exposure and danger of bad loans (World Bank Report, 2015). NPLs are majorly based on fraudulent

management operations, absurd lending and creative accounting to conceal bad loans and other inconsistencies (Central Bank Report, 2016).

1.1.1 Nonperforming Loans

According to World Bank, NPLs can be defined as the value of nonperforming loans divided by the overall value of a loan portfolio (which includes nonperforming loans before the deduction of specific loan-loss provisions). The amount of loan that is recorded as nonperforming ought be the gross value of the loan as recorded on the balance sheet, and not only the amount that is overdue. NPLs are therefore, those loans that are considered not recoverable, and they affect the lending traits of different banks depending on historical impacts and the measures put in place to regulate lending per bank and across the industry (Doriana 2015).

NPLs are measured in relation to total loans and interest income. They are the ratio of non-serviced loans to gross total loans. NPLs can be used to measure the quality of outstanding loans for banks. If the NPL ratio is small, it indicates smaller losses for the bank, whereas if it is large (or increasing), the NPL ratio can mean losses for the bank is larger as it writes off bad loans (Wangui, 2010).

NPLs occur due to a variety of reasons, including business losses or bankruptcy. It is generally agreed that a debt is considered a bad debt for such reasons as; overdue interest and/or principal; and if the credit institution considers that the borrower does not have the ability to pay the debt (Ward, S. 2011).

1.1.2 Operation Efficiency

Operation Efficiency determines the going concern of any entity since it determines how earnings are generated. It is a subjective measure of how well a firm uses its assets in

operation to generate revenues. Operation Efficiency of banks is therefore a measure of the results of a bank's policies and operations in monetary terms (Djiogap & Ngomsi, 2012).

Operation efficiency can be measured in different dimensions relating to cost and profitability. Basically, operational efficiency is how good the Return on Assets, net income/profitability, Liquidity/Working capital, Cashflows, Return on Equity, Dividends per share and much more are. Operational efficiency measure helps in assessing how a business will achieve its goals and objectives as well as targeted growth rate, assisting in effective planning and improvement of business in general (Vatansever & Hepsen 2013).

The statement of cash flows, the income statement, and statement of changes in equity among others, convey the numbers that show financial performance. Good numbers and high profitability can reveal how efficient a firm is managed and operating.

1.1.3 Nonperforming Loans and Operation Efficiency

From the finding in the definition of NPLs above and the various studies from the theory of nonperforming loans, it is clear that they eat into the final net income of all organisations. To the ideal, if all entities that have receivables as an asset in the statement of financial position were to receive all the receivables in totality, then the profits would be much higher than they are actually realised.

Operation efficiency is viewed from both the cost and profitability perspective. The relationship between NPLs and Operational Efficiency is negative; the higher the NPLs, the less effective operation is. This is viewed from the losses to the net income due to reduced interest income and loss of principle perspective, as well as the cost of extending the loans. NPLs are a derivative of extended loans which should generate income through interest income. Analysts agree that interest rate regime put in place in a banking system should be expected to determine the earnings/financial performance of the entire banking sector, whose

core source of income is interest income (CBK, January, 2003). Knowing that NPLs are those extended facilities that are not being serviced per loan agreement, then, there is subsequent financial loss to financial institutions through the loss of interest income on the loans as well as non-payment of principle amount.

As per World Bank report (2000-2014), the percentage of non-performing loans to total loans stood at an average of 16.91%.With a minimum of 4.43% and a maximum of 34.9%. This indicator is spread across banks with some having greater figures than others. In Kenya, the percentage of NPLs to Total loans has been ranging from 5% to 8%. These figures reflect in the statements of financial position negatively by reducing revenues.

NPAs are written off, and this is charged against revenues in the statement of income. It is necessary to account for bad debts in order to ensure that assets of an entity are not overstated, over and above the reasonable amount expected to be recovered, which is in line with the prudence concept (Wood and Sangster 2010).

1.1.4 Commercial Banks in Kenya

There are 42 licensed commercial banks in Kenya, with over 15 deposit taking microfinance banks and over 150 Sacco's that play closely similar role to commercial banks (Central bank website, 2016). The growth in number of commercial banks in Kenya has been enormous over the years due to the allure of high interest income in the banking industry. The spread between deposit rate and lending rates has been big.

NPLs on Kenyan banks have been fluctuating over years, majorly based on prevailing country economic conditions and inflation. NPLs in Kenya were highest in year 2003 standing at 34.9% of total loans and lowest in 2011 standing at 4.43%. From 2011 to 2016, the number has been going up by a marginal percentage of around 8% p.a. (The World Bank report, December 2015).

On 29th July 2016, the national assembly of Kenya passed a bill to cap interest rates in the country to a maximum of 4% above the Central bank rate (CBR). The president of the Republic of Kenya assented to the bill in August 2016 and all Banks adhered to the bill from September 2016. This will see a significant decline in interest income for banks which is a major source of earning. This will therefore have effect on financial performance and consequently on operations of banks. However, but it is expected to reduce the number of NPAs since the loans are affordable.

1.2 Research Problem

Nonperforming loans can reasonably be expected to enter default. Once a loan is considered nonperforming, the lender has the right to attempt to recover the principle. NPLs can be attributed to management efficiency in terms of evaluating borrowers and determination of quality/riskiness of loans extended. All the losses arising from NPLs are summed up to the final financial performance of an entity. Carrying nonperforming assets (NPAs)/NPLs, on the balance sheet places three distinct burdens on lenders. The non-payment of interest or principal reduces cash flow for the lender, which can disrupt budgets and decrease earnings. Loan loss provisions, which are set aside to cover potential losses, reduce the capital available to provide subsequent loans. Once the actual losses from defaulted loans are determined, they are written off against earnings which consequently sum up in the final financial performance (Umar and Sun, 2016).

In Kenya, the rate of NPLs had been going down from the all time high; year 2003 till 2011, but from then, they have been rising gently onwards. This has called for banks' operations changes to reduce effects on financial performance. In 2015 for example, standard Chartered Kenya issued profit warning due to NPLs that totalled to Ksh14.69 billion, and actually reported a 39% decline in profits. National Bank of Kenya reported a 3 billion Loss in 2015 financial reports due to NPLs of Ksh11.76 billion; Chase Bank Kenya was put under

receivership as a result of absurd lending to its directors and high provisions for the debts. It's bad debts had tripled in that year to Ksh11.87 billion. Bank of Africa reported Ksh1.02 billion losses in the same financial year as its NPLs quadrupled to Ksh 9.7 billion. These are a sample of Kenyan banks that have seen their operations greatly affected by NPAs (Business daily, April 1, 2016).

Research and studies have been done globally by various researchers and scholars including; Blanco and Gimeno (2010) for South African banks, Calice (2012) on Tunisian Banking sector, Kolapo (2012) for the Nigerian Banks, Asantey & Tengey (2014) for Ghana Banking industry, Cucinelli (2015) on Italian Banks, Umar and Sun (2016) on Chinese banks; et al, all to determine the extent of NPLs effect operation efficiency of commercial banks. The major finding is that NPLs negates the profitability of financial institutions and therefore affecting their operation efficiency as well as having other far reaching implications

Several local studies and research on NPLs have also been carried out including; Ngugi, (2001), Kithinji and Waweru, (2007), Wangai, Bosire & gathogo (2012), Ombaba (2013), Gaitho (2014), et al. The studies sought to identify the causes and effects of NPLs on performance of financial institutions in Kenya. Some common findings are that NPLs have a negative effect on operational efficiency, and also they affect the economy, explaining why CBK sets guidelines that enable financial institutions mitigate NPLs.

Global research and studies represent a different setting from the Kenyan banking industry, while the variables used in local studies are diverse and hence do not clearly elaborate the major variables and causes of NPLs as well as the level of effect on operations of banks. These gaps necessitated this study that seeks to identify and elaborate the effects of non-performing loans on operation efficiency of Kenyan commercial banks.

1.3 Research Objectives

This study sought to determine the effects of nonperforming loans on operational efficiency of commercial banks in Kenya.

1.4 Value of the Study

The major beneficiaries of this study were; the banks' management, the borrowers and external stakeholders interested in knowledge of levels of NPLs and/or operations efficiency of commercial banks in Kenya. The findings are of help to managers and directors of banks in identifying trends and causes of NPLs in the country. Study helped in understanding the importance of proper loans analysis, appraisal and grading to ensure best quality loans are extended. This aids them in making decisions on ways to reduce NPLs and help in reduction of losses relating to the same.

2.1 Introduction

This chapter discusses theoretical framework relating to the study, the applicable theories and their proponents. The general determinants of operational efficiency and financial performance of commercial banks and an overview of banking system in Kenya are discussed. Empirical studies on NPLs and operational efficiency and gaps emanating from these studies are also discussed. Then the conceptual framework of the study is illustrated and a summary of literature outlined.

2.2 Theoretical Framework

This section of literature review discusses the theories that relate to the research question. The section therefore has three theories closely relating to and explaining the concept of NPLs and operation efficiency of commercial banks. The theories that relate to this study are; The Stakeholder Theory, Adverse selection and the Moral Hazard theory.

2.2.1 The Stakeholder Theory

Stakeholders' theory, which as originally developed by Freeman (1984) was to be used as a managerial instrument. It has however since evolved to become a theory of the firm that has high explanatory potential. The stakeholder theory is like a conceptual framework of business ethics and organizational management which addresses moral and ethical values in the management of a business or other organizations. Stakeholder theory majorly focuses on equilibrium of the interests of the stakeholders as the core determinant of corporate policy. The theory has a large contribution to risk management coming up as an addition to implicit contracts theory as well as other forms of contracts, including financing and sales (Cornell and Shapiro, 1987). In various industries, consumer trust and particularly high-tech services, and the specifically involved companies being able to maintain offering of such services in the future, can substantially contribute to company

value. The value of these implicit claims is however highly sensitive to probable costs of financial distress and/or bankruptcy. This is because management practices on corporate risks can front the lowering of these expected costs, raising the company value (Klimczak, 2005). The stakeholder theory therefore provides a diversified insight into feasible rationale for risks management such as bad debt]. The theory has however not been tested directly yet. A hypothesis investigating financial distress only provides indirect evidence (Judge, 2006)

Stakeholder theory is relevant to the study as it highlights such effects as insider lending and directors' fraudulent and absurd acquisition of loans. For example, the case of Chase bank Kenya 2016, where one director of the bank borrowed Ksh7.9 billion without security.

2.2.2 Adverse Selection Theory

Acording to Pagano and Jappelli (1993), it is important for banks to share information as it reduces adverse selection and improves banks information on credit applicants. The theory explains asymmetric information concept, showing how it is not easy to distinguish between good and bad borrowers (Richard 2011), which can lead to adverse selection and moral hazards issues. According to the theory, in a market setting, the party that possesses extra information on specific thing to be transacted (in this case the lender) has a bigger hand for optimal negotiation for favourable terms in the transaction compared to the party with lesser information (in this case, the borrower) (Auronen, 2003). Therefore, the party with less information about the same specific item in lieu of transaction is most likely to make either right or wrong decision pertaining to the transaction. Adverse selection has led to significant growth in non-performing loans for banks (Bester, 1994; Bofondi and Gobbi, 2003).

This theory is relevant to the study since it relates to how highly a firm can charge interest rates that are non-favourable to borrowers concealed as lending risk. This contributes to NPLs because of the burden of payment by clients.

2.2.3 Moral Hazard Theory

From economic definition, Moral hazard is a situation in which one party gets involved in a risky event knowing that it is protected against the risk and the other party will incur the cost (Holmstrom, 2014). It is brought about by information asymmetry between the involved parties.

On a lending perspective, the moral hazard problem implies that, unless there are imminent future consequences, a borrower has the spur to default credit applications. In financial markets/ banking sector, there is a risk that the borrower might engage in activities that are undesirable from the lender's point of view because they make him less likely to pay back a loan. This is so likely because, the borrower knows that someone else will pay for the mistake he makes (Down, 2012).

During a lending contract, lenders have do not have sufficient information to assess and believe the level of wealth which borrowers will have accumulated by the due date that the debt should be repaid, as opposed to the time of application. When the lenders have no ability to assess the level of wealth of the borrowers, it will be tempting for the latter to default on the borrowing. To reduce this, lenders cover the risk by increasing the rates, which eventually leads to breakdown of the market (Alary and Goller, 2001). In economics therefore, the incentive that a borrower has to act in a riskier and non-favourable way to the lender is described as Moral Hazard.

2.3 Determinants of Financial Performance of Commercial Banks

The determinants of bank performance are classified into two; bank specific (also internal) factors and external (macroeconomic) factors (Al-Tamimi, 2010; Aburime, 2005). The internal factors are specific to a particular bank and do affect the bank's performance individually. They are influenced by management and board internal decisions. They include;

Capital adequacy, Asset quality, Management efficiency and Liquidity Management (CAMEL). This framework (CAMEL) is frequently applied by scholars to proxy the bank specific factors (Dang, 2011).The external factors are beyond the control of individual banks, they are sector and/or industry-wide or country-wide factors and are beyond the control of banks internally, though they affect the profitability of banks. They include, inflation, political instability, Interest rates among others (Flamini et al. 2009).

2.3.1 Bank Specific Factors/Internal Factors

As explained above, the internal factors are bank specific variables which influence the profitability of a specific bank. These factors are within the scope of control for individual banks, and they differ from bank to bank. These include, but not limited to; capital size, size of deposit liabilities, size and composition of credit portfolio, labour productivity, state of information technology, risk level, management quality, bank size and ownership (Eston, 2016).

2.3.1.1 Capital Adequacy

Capital is the amount of owner's equity fund available to support the bank's business and act as a buffer in case of adverse situation (Athanasoglou et al. 2005). Banks capital creates liquidity for the bank since customer deposits are fragile and prone to bank runs. Moreover, larger equity capital for the banks reduces chances of financial distress (Diamond, 2000). Capital adequacy is the level of capital required by the banks to curtail such risks as credit, market and operational risks they are exposed to.

Capital adequacy is judged on the basis of CAR (Capital Adequacy Ratio) (Dang 2011). Capital adequacy ratio illustrates the internal strengths for a bank to survive during loss crisis. It also has a direct effect on the profitability of banks since it determines the expansion ability to risky but profitable portfolios (Sangmi and Nazir, 2010).

2.3.1.2 Asset Quality

The bank's asset is another bank specific variable that affects the profitability of a bank. The bank asset includes among others loans portfolio, current asset, fixed asset, and other investments. Asset quality often improves with age and size of a bank (Athanasoglou et al., 2005). Loans are the major assets that generate income to banks. The quality of a loan portfolio therefore highly determines the profitability of a bank. Good quality Assets reduces losses relating to NPLs, considering the fact that, the highest risk facing banks is the losses arising from delinquent loans (Dang, 2011).

2.3.1.3 Management Efficiency

Efficiency is one of the key internal factors that determine profitability of an entity. It is represented by different financial ratios such as loan growth rate, total asset growth, and earnings growth rate. Operational efficiency is the backbone of management efficiency. Good management of operating expenses plays a major role in the strength of income statement. Performance of management is more often expressed in qualitative representations, through subjective assessment of management systems, control systems, organizational discipline, quality of staff, and others.

2.3.1.4 Liquidity Management

Liquidity is an additional internal factor that determines a bank's performance level. It refers to the capability of a bank to fulfil its short term obligations, mainly of depositors. According to Dang (2011) sufficient liquidity is positively correlated to banks' profitability. Some of the ratios that can explain liquidity strength are; customer deposit to total assets ratio and total loans to customer deposits.

In Kenya, several banks have failed and others put under receivership over years. From Continental Bank, Trade Bank and Pan African Bank, to most recent cases of Dubai Bank,

Imperial bank and Chase bank, Insider lending and director's imprudent appropriation of loans and other funds have led to their failure.

2.4 Empirical Review

NPLs have been a subject of study for several decades. Various studies and research have been carried out in regards to various dimensions of NPLs including Causes, Effects, practices and factors leading to NPLs. When SAPs (Structural Adjustment Programs) were introduced in the late 1980's, the worldwide banking sector has henceforth experienced key transformations in the operating environment. Countries have flexed regulatory controls on interest rates, condensed government involvement and opened their markets to international banks (Ismi, 2004)

2.4.1 International Empirical Review

Khemraj (2007) studied related situation in Indonesia, found out that, NPLs accounted for about 75% of total loan assets that led to the collapse of above sixty banks. The study found that most banks had liquidity problems due to non-performing loans. The study further found positive relationship between loan growth and non-performing loans. The study recommended that commercial banks should put in place effective methods of screening borrowers (Khemraj, 2007)

Kosmidou (2008) did study in regard to NPLs and performance of Greece commercial banks. The study used linear regression analysis model on 23 commercial banks from Greece using data for the years 1990 to 2002. ROA was used as the ratio to represent loan loss reserve to gross loans stand-in for profitability and asset quality respectively. The study results showed a significant negative impact of asset quality to profitability of bank.

Azeem & Amara (2013) study Impact of profitability on quantum of NPLs in Pakistani Banks. The Data of one business cycle of sixteen Pakistani banks were collected from 2006

to 2012. The sample comprised of sixteen public and private banks with different sizes. Three models were adopted to check the relationship between profitability and nonperforming loans. Model one represented return on asset as dependent variable while nonperforming loans were taken as independent variable. Model two represented Return on Equity as dependent variable while non-performing loans were taken as independent variable. Model three represented Stock Return as dependent variable while non-performing loans were taken as independent variable. The general results of the study showed that profitability and non-performing loans have negative relationship. However, the study was weak because, data of non- performing loans in Pakistan was only available from six years (2006 to 2012) and for a short panel of 16 Banks only

2.4.2 Local Empirical Review

Study by Kiyotaki & Moore (2008) evaluated the impact of nonperforming loans on profitability of Kenyan banks. The study used a case study of KCB for the period between 2009 and 2013 The study used time series data from quarterly reports of Kenya Commercial bank and Central Bank of Kenya for the period between 2007 and 2009.Estimation of parameter for the model was done using ordinary least square method with aid of E-views software package (Dinger, 2009). The main findings of the study are as follows; there is a negative relationship between profitability of commercial banks and non-performing loans, a significant negative relationship exists between GDP and nonperforming loans. There also exists a positive relationship between profits and GDP. The study recommends that the banks should introduce more effective ways screening of borrowers (Bhunia, 2011). The study does however nor clearly pronounce quantifiably the effects of NPLs on Financial performance.

Mausya (2009), studied the impact of non-performing loans on the Performance of the banking sector in Kenya, an MBA project submitted to University of Nairobi and in his findings, indicated that commercial banks are negatively affected by raising levels of non-

performing loans through provisioning made and interest in suspense. She outlines that majority of such factors include under staffing, under qualified staff among others for years 2004-2008. In the study, a sample of thirteen banks is used to show how these factors affect the performance of these banks where the performance is represented by the profit before tax of the 13 sampled banks. Their findings indicate that commercial banks will be negatively affected by raising levels of non-performing loans through provisioning made and interest in suspense.

Olweny & Shipho (2011) studied the effects of banking sectoral factors on the profitability of commercial banks in Kenya. The main objective of their study was to evaluate the effects CAMEL factors, income diversification and operational cost efficiency on the profitability of commercial banks in Kenya. Another objective was to determine the effects of market structure factors; market concentration and foreign ownership on the profitability of commercial banks in Kenya. Financial statements of 38 commercial banks in Kenya between 2002 and 2008 were obtained from Banking Survey 2009 and CBK. Upon analysisng using the multiple linear regressions method, it was found that all the CAMEL factors had a statistically significant impact on profitability, while the market factors had no significant impact. Their study showed that Asset Quality and affected financial performance had impact on operations of banks.

Macharia (2012) studied the relationship between the level of NPLs and the financial performance of commercial banks in Kenya an MBA project submitted to University of Nairobi. Multi linear analytical model was used to determine the relationship between the NPLs and the financial performance of commercial banks. The relationship between these ''bad loans'' and the financial performance represented by ROA was regressed. After determining the level of NPLs across the banks and the total outstanding shares, the relationship between these variables was obtained. This involved regressing the NPLs with

the ROA of the firm for entire period of the study. NPLs were the independent variable in the regression equation while ROA was the dependent variable. The study regression results indicated that there is no relationship between profits, amount of credit and the level of non-performing loans. The results revealed that bulk of profits for commercial banks are not influenced by the levels of credit extended or nonperforming loans. This suggested that other variables besides credit and NPLs impact on profits.

Study by Ongore and Gemechu (2013) on the determinants of Financial Performance of Commercial Banks in Kenya; saw that asset quality, majorly the loans portfolio was the major source of income for banks. They found out that, the quantity of NPAs have great impact on financial performance of banks. Stating that, the greater level of NPLs, the greater the impact on the financial earnings of banks.

Their empirical study showed that asset quality, capital adequacy and management efficiency considerably affect the performance of commercial banks in Kenya. They found out that the relationship between bank performance and asset quality was negative while that for capital adequacy and management efficiency was found to be positive. The indication was that, poor asset quality/high NPLs to total asset linked to poor bank performance.

2.5 Conceptual Framework

The conceptual framework is developed from the research question and presented diagrammatically as shown below. The conceptual framework shows the connection/relationship between NPAs and other bank specific factors (independent variables) to the financial performance (dependent variable) of commercial banks in Kenya.

Independent Variables   **Dependent Variables**

Non Performing Loans

Interest rates

Bank Specific factors
(CAMEL)

Macro & Micro
economic determinants

Operational Efficiency
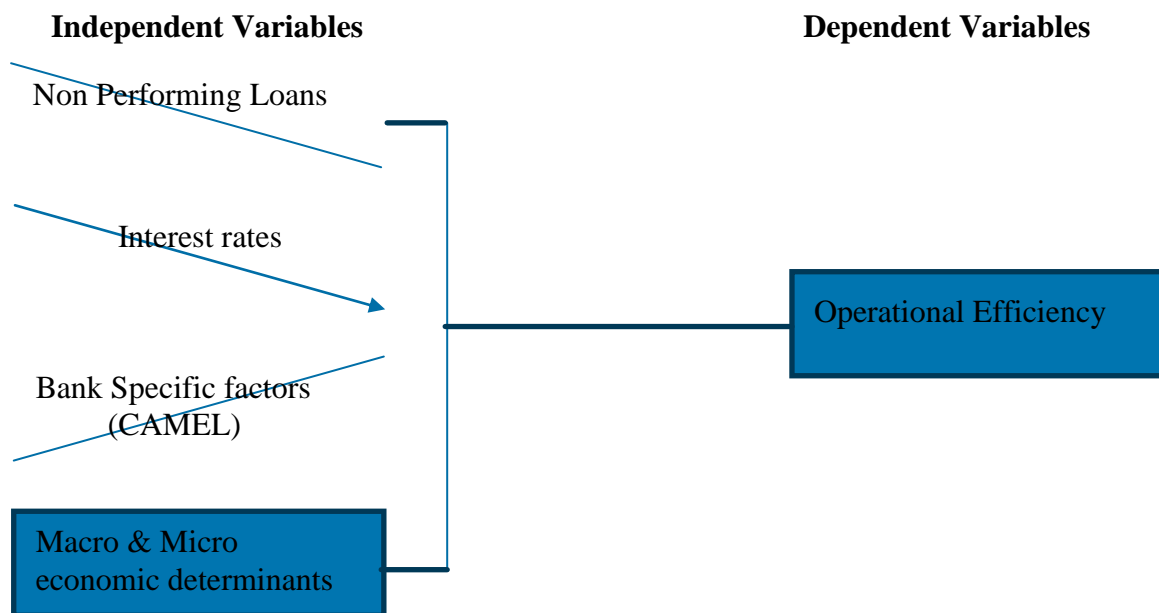
The diagrams shows that operations efficiency and banks performance are determined by independent variables including; NPAs, Interest rates, bank specific factors (CAMEL) and external Macro and Micro economic factors. Of these determining factors, banks have some control on only NPLs and the CAMEL factors.

The higher the level of NPLs, the more reduced the earnings of a bank. This affects its overall performance and cautions its future lending leading to operations issues. Bank specific factors play a major role in final performance and stability of banks earnings which in turn operations efficiency. Micro & Macro-economic determinants are external sector-wise factors that affect performance of banks in general.

2.6 Summary of Literature Review

From the studies above, it is evident that there exist theoretical concepts and empirical studies that touch on effects of nonperforming Loans on operations and profitability of Commercial banks in Kenya. Stakeholder theory, Adverse Selection Theory and the Moral Hazard theory being some of the important theories that can further the studies and applications. Empirical reviews have however given different results on how non-performing loans affect profitability and consequently operations of commercial banks in Kenya.

Studies did earlier have revolved much around how NPLs have come to exist as well as how to avoid the accumulation of such loans. Some studies used as few as 13 banks as a sample and a small duration of five years as the period of study. Previous studies also gave little attention to Stakeholder Theory, Adverse Selection theory and Moral Hazard/Asymmetric information theory on the studies. This study aims to contribute to the gap in this field of effects of nonperforming loans on profitability and operations efficiency of commercial banks in Kenya.

The study will cover all the licensed 43 commercial banks in Kenya and over a wide comparison period of ten years. The study will specifically establish the effects of non-performing loans on operations efficiency and profitability of commercial banks in Kenya. It will also focus on the following financial theories in the course of the study; Stakeholder Theory, Adverse Selection theory and Moral Hazard/Asymmetric information theory. Bank specific factors affecting profitability mainly; Capital Adequacy, Liquidity and Operational efficiency will be used in the study as controlling variables.

CHAPTER THREE; RESEARCH METHODOLOGY

3.1 Introduction

This study aimed at examining the effects and determinants of NPLs in the commercial banks in Kenya. Accordingly, this chapter discussed the methodology that was used to carry out this study. The elements discussed include; research design, the population of study, data collection, data analysis and the model of data analysis. Finally, definition of study variables with their measurement and model specifications are presented.

3.2 Research Design

This study used an exploratory research design since it examined the cause and effect relationships between dependent and independent variables. This is so because, this study was meant to deduce and explain the effects of bad loans to the operational efficiency of commercial banks in Kenya. The study covered the period between 2005 and 2015 for 43 commercial banks. Operational efficiency, was represented by cost and income, measured by Cost/Income Ratio and was taken as the dependent variable while NPLs measured by non performing loans ratio of nonperforming loans over total loans and advances was taken as independent variable. CAMEL factors affecting profitability were also considered in the analysis as controlling variables.

3.3 Population

The population for the study included all 43 Kenyan commercial banks as registered by Central Bank of Kenya; operational in the country as at 31st December 2015. Data collected was from all the 43 commercial banks since the population is small, implying that a census was more applicable than sampling.

3.4 Data Collection

The data utilized in the study is secondary data. It comprised of; Total loans, Nonperforming Loans, Provisions for NPLs, Net Income, Operational costs and NPL ratio, all acquired and/or computed from the financial statements of the commercial banks for the period year 2005 to 2015. Besides this, the ratios for computing; Capital adequacy, Operational costs efficiency and Liquidity were computed from the financial statements of the commercial banks for period under study and used as control variables. The data was collected from; The Central Bank of Kenya reports, audited published financial statements of commercial banks in Kenya, Banking Survey (East Africa) Report and the Kenya National bureau of statistics. A data collection sheet was prepared to assist in gathering the data.

3.5 Data Analysis

Quantitative data was obtained from the relevant financial statements and other sources, which were then analysed using frequency distribution, cross tabulation and percentages and other descriptive statistics using SPSS version 20.

Correlation and regression analysis was employed as the tools for investigating the relationship between the variables. Before implementing these analysis methods, mathematical models relating the different variables were setup first. In our case, the variables are; number of loans advanced, income, provisions for doubtful loans, actual bad loans. Other controlling variables majorly micro variables in the banking industry will be also considered.

3.5.1 Analytical Model

In order to determine the nature of relationship between nonperforming loans and operational efficiency of banks, multi linear regression was carried out. Operational efficiency represented by Cost/Income ratio was taken as the dependent variable, NPLs measured by

non-performing loans over total loans and advances was taken as independent variable. The expected outcome was that NPLs will negate the performance. However other variables are positively related to performance. CAMEL controlling variables are taken into consideration in the multi-linear regression as follows;

$$Y = \alpha + \beta 1 X1 + \beta 2 X2 + \beta 3 X3 + \beta 4 X4 + \varepsilon$$

Inteerpreted as:

$$Y_{it} = \alpha + \beta_1 X_{it} + \beta_2 CA_{it} + \beta_3 AQ_{it} + \beta_4 LM_{it} + \varepsilon_{ijt}$$

Where;

Y_{it} =   Operation efficiency, deduced from operational costs and profitability/income of bank 'i' at time't'. Operational Cost Efficiency measured as Cost income ratio and computed as; (Total expenses/Total Revenue).

X_{it} =   The NPLs for bank 'i' in time't' measured using NPLs ratio. Computed as total non-performing Loans over Total Loans and advances

α =   Constant factor that affect NPLs of a bank

$\beta_1 - \beta_4$ =   Coefficient Parameters

CA_{it} =   Capital Adequacy of bank i at time t - Measured as a ratio of Core Capital over Total Risk Weighted Asset. Computed as (Core Capital / Total Risk Weighted Assets)

AQ_{it} =   Asset Quality of bank i at time t – Calculated by loan loss reserves by net loans (Loan loss/ Total loans).

LM_{it} =   Liquidity Ratio of Bank i at time t - Measured as Ratio of Liquid Assets to Total Liabilities. Computed as (Quick Assets/ Total liabilities)

ε_{ijt} =   Error term where i is cross sectional and t time identifier

3.5.2 Inferential Statistics

This shows the findings of the regression analysis obtained. It shows findings on effects of NPLs on profitability of commercial banks before incorporating control variables on regression analysis, then correlations between all variables and finally the effect of

nonperforming loans on profitability when control variables are incorporated in the regression analysis.

Parametric tests will be estimated to determine the significance of the relationship using; the correlation coefficient (r), coefficient of determination (r^2) and coefficient of multiple correlation (R^2), Univariate Correlation coefficients, r, measures the strength and the direction of a linear relationship between the two variables. The coefficient of determination, r^2, determines the degree of linear-correlation of variables ('goodness of fit') in regression analysis. The coefficient of multiple correlation R^2 measures how well a dependent variable could be predicted using a linear function of a set of other variables (covariates)

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

The objective of this chapter is to present and explain the data findings based on the study objectives. The results are presented in the form of summary tables. Regression and Correlation analysis are used to analyze the data to answer the research objective.

4.2 Descriptive Statistics

Table 4.1 below summarizes the descriptive statistics of the variables included in the regression models as presented. It represents the variables of the 43 commercial banks operating in the Kenya whose financial results were available for the years 2006-2015. Regression analysis was performed with the independent variables being nonperforming loans. Operational efficiency (measured by cost to income ratio) was the dependent variable. Mean aggregates for all the study variables of all the commercial banks were obtained for each period under the study. Data obtained was transferred to SPSS as variables for regression analysis and results were obtained.

The mean value of Non- Performing Loans on commercial bank is positive (9.106), which shows that commercial banks registered a high level of non-performing loans over the period of study. The mean value of operation efficiency was also positive (12.762), showing that commercial banks operations were affected by NPLs. The mean of Asset Quality, Capital adequacy and Liquidity management is high (55.685) showing that despite the issues of nonperforming loans, commercial banks have have had positive operations efficiency support by the high value of the control variable above.

Table 4.1: Descriptive Statistics of all the Variables

	N	Minimum	Maximum	Mean		Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic	Std. Error	Statistic	Std. Error
Y	10	10.58	15.32	12.762	0.35415	1.08992	0.894	0.683	3.279	1.331
X1	10	3.62	21.22	9.106	1.93986	6.17162	1.152	0.683	0.051	1.331
X2	10	13.02	16.19	14.589	0.3664	1.149867	-0.369	0.683	-1.565	1.331
X3	10	51.6	60.16	55.685	1.14123	3.58221	-0.201	0.683	-1.443	1.331
X4	10	31.25	40.32	37.062	0.9454	2.97855	-0.941	0.683	-0.338	1.331
Valid N (listwise)	10									

Source: Research Findings

The table shows the summary of maximum, minimum, mean, standard deviation, kurtosis and skewness of data used to analyze the study variables. The mean of data variables in the 10 year period was used to derive the; minimum, maximum, mean and standard deviation, representing a time series in the study. Skewness as represented shows asymmetry and degree of deviation from normality. Kurtosis points out flattening or "peakedness" of data in the distribution.

4.3 Diagnostic Statistics

Diagnostic tests help in identifying the conformity of the data interpretation to the normal assumptions of any statistical analysis. Taking linear regression analysis as an example, basic assumption is that the residuals of predictors are distributed normally and that the predictors are not collinear. This therefore necessitates for Diagnostic tests for the same.

4.3.1 Test for Normality

Table 4.2: Test for Normality

Model Dimension	Eigen Value	Condition Index	variance proportions				
			(Constant)	NPLs	AQ	CA	LM
1	2.84	1.00	0.04	0.06	0.03	0.00	0.00
2	0.979	1.73	0.02	0.03	0.00	0.00	0.81
3	0.612	2.23	0.61	0.11	0.28	0.00	0.03
4	0.401	2.74	0.35	0.021	0.41	0.01	0.08
5	0.014	15.32	0.022	0.98	0.28	0.98	0.09

Dependent varibale: OE

From table 4.2 above, while finding out whether the variables are normally distributed, there is a conventional significance that the variables are normally distributed.

4.3.2 Test of Collinearity

In an ordinary least squares regression analysis, Variance inflation factor (VIF) quantifies the severity of collinearity. This works as a diagnostic test for the determination of multicollinearity. From table 4.3 below, the values of VIF are less than 5, implying that very little multicollinearity was exhibited by the variables.

Table 4.3: Test of Collinearity

Model		Collinearity Statistics	
		Tolerance	VIF
1	NPLs	0.934	1.081
	AQ	0.911	1.069
	CA	0.898	1.066
	LM	0.927	1.072
	Average OE	0.967	1.045

Source: Research Findings

4.4 Correlation Analysis

4.4.1 Inferential Statistics

Correlation coefficient analysis was used to determine the direction and the strength of relationship between the two main variables. The variables included; independent variable

NPLs (X_1) and OE represented by cost to income ratio as the dependent variable (Y). From Table 4.2 below it is possible to conclude that the variable (X_1) NPLs and OE (Y), have a correlation value (r) of 0.755. This means that the correlation level is strong. This means high NPLs have a directly related high effect on operational efficiency.

Coefficient of determination was used to analyse and evaluate the level of effect of NPLs (X_1) to the dependent variable (Y) OE, expressed as a percentage. Based on Table 4.2, that shows R^2 value as 0.571 or 57.1%, it can be deduced that NPLs (X_1), have accounted for 57.1% of the OE (Y) issues, while the remaining 42.9% can be said to have been influenced by other variables in CAMEL.

Table 4.4: Test Results for Coefficient of Determination and Correlation Coefficient Model

Model	R	R square	Adjusted R square	Std. error of the estimate
1	.755[a]	.571	.562	.0712473

Source: Output SPSS 21.0.

4.5 Regression Analysis and Hypotheses Testing

4.5.1 Partial Significance Test (t-test)

Partial model of t-test was used to examine the significance. This was used to partially determine the effect of NPLs and CAMEL variables on OE. Partial test results as shown on Table 4.3 between NPL and OE shows a t-value of 2.041 which is lower than (2.064) of the t-table, and a significant value of 0.044 that is below 0.05. This means that the NPLs have positive related effect (negative effect) on OE of the firms. This rejects hypothesis H1 which states that NPLs positively affects the OE.

Partial test results between the CA, AQ & LM to OE shows the t-test value of -10.914 which is greater than t-table (2.064) with a significant value of 0.000 that is below 0.05. This means that the CA, AQ & LM effects on OE are significant. Thus hypothesis H2 which states CAMEL factors positively effect on OE is acceptable.

Generally, all the variables have a significant effect on Operational Efficiency (OE) of the commercial banks in Kenya.

Table 4.5: Partial Test (T-Test)

	Model	T-count	T-table	Sig.	Description
1	(Constant)	16.078		.000	
	NPLs	2.041	2.064	.044	Significant
	CAMEL Factors	-10.914	2.064	.000	Significant

Dependent variable: OE; Source: Output SPSS 21.0

4.5.2 Simultaneous Significant Test (F-test)

Condusction of F - test helped determine the level of effect of independent variables (NPLs, CA, AQ and LM) concurrently to the dependent variable (OE). The influence level of the autonomous variables to the dependent variable OE is shown in table 4.4 below, showing, F-count was 67.139 which is greater than (3.028) of the F-table and a significance value of 0.000 which is below 0.05. This means that the independent variables (NPLs, CA, AQ & LM) simultaneously have a significant effect to dependent variable (OE).

Table 4.6: Simultaneous Test (F-Test)

ANOVA					
Model	Sum of squares	Df	Mean square	F	Sig.
Regression	.682	2	.341	67.139	.000[b]
1 Residual	.513	101	.005		
Total	1.194	103			

Dependent variable OE; Predictors: (constant), NPLs, CA,AQ,LM

4.5.3 Multiple Linear Regression Analysis

Multiple linear regression analysis was used to basically determine the level of dependence of the dependent variable to the independent variables, with the aim of estimating or predicting the average for the entire population. By regression analysis, there is depiction of the degree of influence between independent variables to the dependent variable. Table 4.5 below shows the results of multi linear regression analysis for this study.

Table 4.7: Test Results of Multiple Linear Regression Coefficients

Model	Unstandardized coefficients		Standardized coefficients	T	Sig.
	B	Std. error	Beta		
1 (Constant)	1.049	.065		16.078	.000
NPLs	-.066	.032	-.153	-2.041	.044
CA,AQ, LM	.996	.091	.820	10.914	.000

Dependent variable: OE; Source:Output SPSS 21.0

4.6 Discussion of Research Findings

From the discussions and tables as analysed, the final regression equation can be deduced relating to our analytical model;

$$Y = \alpha + \beta 1 X 1 + \beta 2 X 2 + \beta 3 X 3 + \beta 4 X 4 + \varepsilon_i.$$

Combining X2, X3 and X4, since they have similar effect on the dependent variable, our regression equation will be

$$OE = (Y) = 1.049 - 0.66X_1 + 0.996X_2$$

With explanation as below;

The constant value (α) of 1.049 represents a positive constant value which shows that if the NPLs (X_1) have a value of zero and other factors remain constant, then the OE (Y) increase by 1.049. Regression coefficient for the variable NPLs (X_1) is -0.066, indicating a negative relationship between the NPLs (X_1) and OE (Y). This means, if there is additional NPLs (X_1) per unit, assuming other variables remain constant, the OE (Y) will decrease by 0.066 and vice versa. The other regression coefficients CA, AQ & LM (represented by X_2), have a value of 0.966, which indicates a positive relationship with the dependent variable OE (Y). This means, if there increase in CA, AQ & LM (X_2) for every one unit, assuming other variables constant, the OE (Y) increases by 0.966 and vice versa.

It is therefore evident from the study that NPLs affect operational efficiency of commercial banks in Kenya. Illustrations per results analysed above, with OE represented by Cost/Income ratio while NPLs are measured by the NPLS ratio. Findings also depict that other control variable in bank specific factors (Capital Adequacy, Assets Quality and Liquidity management) have a significant influence on Operational Efficiency of commercial banks in Kenya.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents a discussion of the key findings, conclusions, limitations of the study and recommendations for further research.

5.2 Summary of Findings

The study was about the effect of nonperforming loans of operational efficiency of commercial banks in Kenya. The secondary data used in the study was a spread of 10 years (2006 to 2015) covering a population of all the 43 commercial banks licensed in Kenya. The main elements of the study were measured basing on Cost to Income ratio (Operational efficiency) visa vie actual nonperforming loans per bank. Other control variables were incorporated in the study, to ensure other factors that affect operational efficiency are catered for.

Applying multi-linear regression and using SPSS package for analysis, different dimensions of relationships were established between nonperforming loans and operational efficiency. Table 4.4 on page 26 shows there is a negative relation between nonperforming loans and operational efficiency. The higher the NPLS, the higher the cost to income ratio (negative operational efficiency): this depicts that nonperforming loans have a negative effect of operations of commercial banks in Kenya. Banks with higher NPLs had higher costs emanating from loan provisions and loan loss costs. The higher the costs, the greater the reduction in incomes, which in turn trickles down to management difficulties and operational inefficiencies.

From table 4.4 in page 27, the value representing Asset Quality, Capital Adequacy and liquidity management is positive. This shows a positive relationship between these variables and operational efficiency of commercial banks. If asset quality is high, capital for

investment choices and other requirements is available and liquidity is well managed including working capital, then the operational efficiency of any firm is smooth and positive.

The findings are in agreement with few other researches done in regard to NPLs and operational efficiency. Showing that NPLs affect such basics as Liquidity, Lending trends and volumes, Capital adequacy ratio (based on total weighted risk), Assets quality, among others, and these in turn affect running of the banks which basically is the operations.

5.3 Conclusions

Nonperforming loans greatly affect incomes/profits of banks. NPLs have also been of worry to banks in recent times, due to continued increase and effects on profits of banks. Profitability crisis in banks leads to operational problems due reduced funds for various functional divisions of the banks. The controlling variables introduced in the study also play a role in operational efficiency of the firms. Capital adequacy, Asset quality and Liquidity quotient determine how well the management of entities perform their functions. Deficiencies in any of the variables calls for corrective measures or reduced budgets in achieving set objectives as opposed to when the variables are sufficient.

From the findings in the study, it is evident that Multi linear regression model is appropriate for testing the effects of nonperforming loans on operational efficiency using non performing loans ratio as independent variable and cost to income ratio as the dependent variable. This study therefore confirmed that nonperforming loans negatively affects operational efficiency of commercial banks in Kenya. The findings are supported by Berger & Young (1997), Batra (2003), Michael et al (2006), Muasya (2009) and Kirui (2013).

5.4 Recommendations

From the earlier conceptual argument and context of the study, it is evident that NPLs have been an area of study, and their different dimensional effects on operations, financial

performance and market competitiveness of commercial banks are dynamic. Basing from the study results, it is evident that NPLs have a significant negative effect on operational efficiency. It is therefore of importance for banks to work on appropriate measures to reduce the levels of NPLs. Great efforts should be made by banks management to manage NPLs which will consequently increase operational efficiency. This requires organisation of the structure of funding sources to improve low-cost funds, giving credit to the productive sectors while applying the principle of prudence and improving competence. Results of this study can be used as guidelines for the management of the bank to control operational efficiency that will result in healthy functioning of banks.

It is also advisable, while anticipating loan losses and making of provisions, management should follow stringent policies which dictate the flexibility of lending. In this regard, management should not make higher provisions for loan losses, and this will restrict their lending traits to quality borrowers, which will consequently see a boost in loan performance.

From the study, it can also be advised that, loan to asset ratio should be reduced. Here, banks are advised not to be enticed by the high lending interest rates or quantity of borrowers in the country, and grant massive loans in quest for profitability. Quality of loan extensions and value of banks assets should be a vice for banks if they need to enhance operational efficiency. Reducing ratio of loan to asset would see banks generate reasonable profits while keeping their operations smooth.

5.5 Limitations of the Study

Some of the limitations that this study faced include; the study was guided by five variables, which cannot conclusively elaborate the effects of Non-performing Loans on Operational efficiency of commercial banks. The study did also not include all factors that affect operational efficiency of commercial banks.

Another limitation is that the study did not cover a broad perspective and explore further on more effects of Non-performing Loans on operational efficiency of commercial banks in Kenya. The study figured operational efficiency only from a perspective of Cost/Income. Operational efficiency can be defined by other variables such as debt/loss ratio Return on Assets and many more.

Another limitation of the study was use of secondary data only. Primary data could add substance to study with personal responses from bank's management stating the levels of NPLs effect on their management operations.

5.6 Suggestions for Further Research

Operational efficiency is the ability to deliver products and services cost effectively without sacrificing quality (Allen and Rai, 1996). NPLs affect this ability to deliver products and services effectively for commercial banks. This study did not exhaustively cover the effects of nonperforming loans on operational efficiency.

A study that covers more variables above the ones used in this study can give give clearer effects on operational efficiency such as a greater study involving macro-economic variables.

Further study can be done addressing Operational efficiency form other perspectives debt to loss ratio, loan loss reserve/ impaired loans ratio, Return on Investments, loan loss provision/net interest revenue ratio and much more which are a key ratios that can broadly describe operational efficiency.

Furthermore, since the study covered only 43 commercial banks in Kenya, further studies can be done incorporating a bigger population that incorporates SACCO's and deposit taking micro-finances.

REFERENCES

Albertazzi, U., & Gambacorta, L. (2009). Bank profitability and the business cycle. Journal of Financial Stability, 5(4), 393-409.

Arim, M.A., Ekpo I.C., & Mustapha A.M. (2013). Determinants of banks profitability In a developing economy: Evidence from Nigerian banking industry, Ilorin, Nigeria.

Arko, S.K. (2012). Determining the causes and impacts of nonperforming loans on the operations of microfinance institutions: A case of Sinapi Aba Trust. An executive MBA thesis. Kwame Nkruma University and Technology, Accra, Ghana

Asantey, J. O. & Tengey, S. (2014). An empirical study on the effect of bad loans on banks' lending potential and financial performance: *the case of SMEs lending in Ghana*. International Journal of Research in Business Management (IMPACT: IJRBM) ISSN(E): 2321-886X; ISSN(P): 2347-4572 Vol. 2, Issue 11, Nov 2014, 1-12

Auronen, L. (2003). Asymmetric information: theory and applications. *In Seminar in Strategy and International Business.*

Ahmad, F., & Bashir, T. (2013). Explanatory Power of Bank Specific variables as Determinants of NonPerforming Loans: Evidence from Pakistan Banking Sector, World Applied Sciences Journal, 9, 22.

Berger, N. A., & De Young, R. (1997). Problem Loans and Cost Efficiency in Commercial Banks, Washington DC. Journal of Banking and Finance, 12(6), 849-870

Central Bank of Kenya. (1989), Reforming Kenya's Financial Sector, Monthly Economic Review [online] Available: http://www.nse.co.ke/download/Reforming%20Kenya's%Financial%20Sector%2for%20Economic%20Recovery.pdf

Day, J. W. (2008). Theme: Accounts Receivable. Available at: http://www.reallifeaccounting.com Accessed 8 September 2016.

Dind L., Shandre M., & Qing H. (2001), The Link between Bank Behavior and Nonperforming Loans in China [online] Available: http://nt2.fas.nus.edu.sg/ecs/pub/wp/wp0108.pdf

Djiogap, C. F., & Ngomsi, A. (2012). Determinants of bank long term lending behaviour in the Central African Economic and Monetary Community (CEMAC). Review of Economics and Finance, Article ID: 1923-7529-2012-02-107-08, 107-114

Doriana, C. (2015). The Impact of Non-performing Loans on Bank Lending Behavior: Evidence from the Italian Banking Sector. Eurasian Journal of Business and Economics 2015, 8(16), 59-71

Fawad, A., & Taqadus, B. (2013). *Explanatory Power of Macroeconomic Variables as Determinants of Non-Performing Loans*: *Evidence Form Pakistan,* World Applied Sciences Journal 22 (2): 243-255, ISSN 1818-4952

Gadise, G. (2014). Determinants of nonperforming loans: empirical study in case of commercial banks in Ethiopia

Herry Achmad Buchory. Banking Profitability: How does the Credit Risk and Operational Efficiency Effect?. *Journal of Business and Management Sciences*. Vol. 3, No. 4, 2015, pp 118-123. http://pubs.sciepub.com/jbms/3/4/3

Hesna, G. (2014). What is the impact of a low interest rate environment on bank profitability? *Chicago Fed letter*, 324, Chicago.

http://www.theglobaleconomy.com/Kenya/Nonperforming_loans/ Accessed 18 September 2016

International Journal of Economics and Financial Issues, Vol. 3, No. 1, 2013, pp.237-252 240

Kothari, C.R. (2011). Research Methodology,2nd Edition. *Method and Techniques*. 1st Edition, Published by ACTS, Nairobi,Kenya.

Kiyotaki, N. and Moore, J. (2008). Liquidity, business cycles and monetary policy. *3rd edition,* Princeton University press, USA, Washington

Michael, Justin Nelson and G., Vasanthi & R., Selvaraju, Effect of Non-Performing Assets on Operational Efficiency of Central Co-Operative Banks (October 1, 2006). Indian Economic Panorama, Vol. 16, No. 3, pp. 33-34 & 39, October 2006. Available at SSRN: http://ssrn.com/abstract=1735329

Prosser, C. (2003). "Bad & Doubtful Debts." Available at:

www.creditprof.com.au/downloads/Bad&Doubtful.pdf   Accessed   08
September 2016

Skarica, B. (2013). Determinants of Non-Performing Loans In Central And Eastern European
Countries: *Financial Theory and Practice*. 38 (1) 37-59

Wangui, G. E. (2010). A survey of the causes of nonperforming loans of commercial banks in
Kenya; An executive MBA thesis; University of Nairobi

Ward, S. (2011). Bad Debt. Available at: http:About.com Guide, accessed 8th Sept 2016

Wangai, D. K., Bosire, N., Gathogo, G. (2012). Impact of Non-Performing Loans on
Financial Performance of Microfinance Banks in Kenya: *A Survey of Microfinance
Banks in Nakuru Town*. International Journal of Science and Research (IJSR) ISSN
(Online): 2319-7064

Wood & Sangster, (2009). Business Accounting Vol 1, Business Accounting Vol 2

APPENDICES

Appendix I: Licensed Commercial Banks In Kenya As At 31 December 2015

1. ABC Bank (Kenya)
2. Bank of Africa
3. Bank of Baroda
4. Bank of India
5. Barclays Bank
6. CFC Stanbic Bank
7. Chase Bank Kenya
8. Charterhouse Bank
9. Citibank
10. Commercial Bank of Africa
11. Consolidated Bank of Kenya
12. Cooperative Bank of Kenya
13. Credit Bank
14. Development Bank of Kenya
15. Diamond Trust Bank
16. Dubai Bank Kenya
17. Eco Bank Kenya
18. Equatorial Commercial Bank
19. Equity Bank
20. Family Bank
21. Fidelity Commercial Bank Limited
22. GT Bank (formerly Fina Bank)
23. First Community Bank
24. Giro Commercial Bank
25. Guardian Bank
26. Gulf African Bank
27. Habib Bank
28. Habib Bank AG Zurich
29. I&M Bank
30. Imperial Bank Kenya
31. Jamii Bora Bank
32. Kenya Commercial Bank
33. K-Rep Bank
34. Middle East Bank Kenya
35. National Bank of Kenya
36. NIC Bank
37. Oriental Commercial Bank
38. Paramount Universal Bank
39. Prime Bank (Kenya)
40. Standard Chartered Kenya
41. Trans National Bank Kenya
42. United Bank for Africa
43. Victoria Commercial Bank

https://www.centralbank.go.ke/images/docs/Bank Supervision Reports/Commercial Banks Directory

Appendix II: NPLs in Kenya trend (1998-2015): % of loan losses to gross loans

Kenya Non-performing loans