THE INFLUENCE OF MANAGER'S DEMOGRAPHIC INFORMATION ON THE RELATIONSHIP BETWEEN FINANCIAL DETERMINANTS INDICATORS AND FINANCIAL PERFORMANCE OF COMMERCIAL BANKS IN KENYA

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The Influence of Manager's Demographic Information on the Relationship between Financial Determinants Indicators and Financial Performance of Commercial Banks in Kenya

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DECLARATION

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

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DEDICATION

I dedicate this work to my lovely husband Michael Okumu Ujunju, my children: Agnes Tunai, Bethsheba Naliaka, Milcah Nabwire, Eileen Nasimiyu, Martin Mati and Felistus Nafuna, my late parents Stephen Khaemba Makokha and Agnes Nanjala Mikachi. My uncle Wakinina Mumelo, my brothers and sisters: Geoffrey Lukoa, Geoffrey Mulumia, Martin Barasa, Grace Nekesa and Christine Nasimiyu who supported my journey to success. May almighty God bless you.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APENDICES

ABBREVIATIONS AND ACRONYMS

CCM	Credit Control Manager
CEO	Chief Execute Officer
CRB	Credit Reference Bureau
CBK	Commercial Bank of Kenya
CIS	Credit Information Sharing
RMP	Risk Management Practice
CS	Collateral Security
MRM	Moderated Regression Model
RM	Risk Manager
FP	Financial Performance
SIST	Sang'alo Institute of Science and Technology
PD	Portfolio Diversification
MPT	Modern Portfolio Theory
CAMEL	Capital adequacy, Asset quality, Management efficiency, Earnings performance and Liquidity.

DEFINITION OF TERMS

Information Asymmetry Theory: Situations in which some agent trade possesses information while other agents involved in the same trade do not (Fama, 1965)

Adverse Selection: Where individuals are about to agree on a trade, but one of them happens to have some information that the other(s) do not have (Matthew &Thompson, 2008)

Efficient Frontier: It is a curve representing all portfolios that maximize the expected return for a given level of risk (Manganell, 2002)

Market Efficiency: Price which investor pays for financial asset (stock, bond, other security) fully reflects fair or true information about the intrinsic value of this specific asset or fairly describe the value of the company – the issuer of this security (Scholtens & Wensveen, 2008)

Portfolio Diversification: This is the risk management strategy of combining a variety of assets to reduce the overall risk of an investment portfolio (Pandey, 2010)

Collateral Security: This is an Asset forming the security of loan (Kerage, 2013)

Credit Information Sharing: Having a common pool of information (database) to facilitate information transfer to all banks to minimize multi loaning (Kerage, 2013)

Financial Performance: This is described as the Financial (profitability) of the commercial banks (Athanasoglou *et.al,* 2006)

Risk Management: Integrated framework for managing uncertainties: credit risks, market risk, operational risks to maximize revenue or returns. (Pandey, 2010).

Modern Portfolio Theory: is a theory on how risk-averse investors can construct portfolios to optimize or maximize expected return based on a given level of market risk, emphasizing that risk is an inherent part of higher reward (Markowitz, 1959)

Financial determinants indicators: these refers to the following independent variables- credit information sharing, risk management practices, portfolio diversification and collateral security (Makokha, 2016)

Demographic information: These refer to moderating variables (experience, education level and earning per month) which influence the relationship between determinants and financial performance.

Research Design: Overall plan for obtaining answers to the research questions or for testing the research hypothesis (Cooper & Schindler, 2006)

ABSTRACT

The purpose of this study was to examine the determinants of Commercial banks financial performance in Kenya. Specifically the study sought to examine the influence of credit information sharing on Commercial Banks financial performance, investigate risk management practices on Commercial Banks financial performance, evaluate the influence of portfolio diversification on Commercial Banks financial performance; investigate the effect of collateral security on Commercial Banks financial performance and determine the moderating influence of managers' demographic information on the relationship between determinants and commercial banks financial performance. Mixed method which comprised of quantitative and qualitative designs was applied in this study. Quantitative and qualitative data were collected through questionnaires. Target population was 39 licensed Commercial Banks in Kenya from which one hundred and seventeen (117) managers were purposely selected to form sample size. Cronbach Alpha test of 0.961 was obtained indicating the reliability of the research instrument. Content and criterion validity were ensured through incorporating the experts' suggestions in the final document. Data was analyzed using descriptive statistics and inferential statistics which included correlation analysis, bivariate regression analysis and multiple regression analysis after testing for normality, multicollinearity and performing factor analysis. The study findings established a strong positive correlation between credit information sharing and financial performance, a strong positive significant correlation was found between risk management practices and financial performance, a strong positive significant relationship between portfolio diversification and financial performance and a strong positive significant relationship between collateral security and financial performance. On combination of the four determinants, a strong positive significant correlation was established between the determinants (credit information sharing, risk management practices, portfolio diversification and collateral security) and dependent variable (financial performance). This indicated that the determinants influenced financial performance to a greater extent when combined. On introduction of demographic information the influence on the financial performance was enhanced. Further, the arrangement of the determinants according to their effect on financial performance indicated that, portfolio diversification had more effect on performance followed by risk management practices, collateral security and credit information sharing. I recommend the commercial banks to adopt these findings since they will enhance their profits and ensure sustainability. That on implementation of the determinants the banks should employ competent (experienced and skilled) manpower to install operational risk management framework, enhance product diversification, credit information sharing to avoid multiple loaning and non-performing loans and collateral security adopted should motivate earlier repayment of credit facility and avoid recoveries. Further study should be conducted to establish whether salary and other personal emoluments affect the relationship between the determinants and financial performance in Kenya.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Financial institutions play a vital role in the operation of an economy by channeling funds from savers to borrowers for investment which enables economic growth of a country. Otuori (2013) and Oloo (2009) explained that, Commercial banks contribute positively to economic growth of a country by channeling surplus funds to their most productive uses. Kamau (2009) noted that banks dominated the financial sector therefore financial intermediation in the country depends heavily on commercial banks. Athanasoglou, Delis and Staikorous (2006) explained that good performing banks have higher profitability which in turn rewards the shareholders for their investment and increases confidence level for additional investment hence increasing economic growth. Ongore and Kusa (2013) indicated that banking environment in Kenya has for the past decade, undergone many regulatory and financial reforms which have brought about expansion in their operations.

Ongore and Kusa (2013) examined CBK annual reports and highlighted that not all banks were profitable despite the overall profitability experienced in the banking sector for the past 10 years that attracted other macro and micro banking institutions. Oloo (2011) echoed that commercial banks still declared losses despite of the good overall performance. Onjala (2012) explained that increase in the number of banks has fueled competition over customers. This has therefore caused banks to establish the financial determinants that influence financial performance of commercial banks to remain in business hence informing this study.

Banking literature categorizes the determinants of financial performance into internal (endogenous) factors and external (exogenous) factors. Internal factors are controlled by the management and that the performance of banks can be improved by varying those factors while external factors are those factors that banks management has no

control over but occurs within the environment that the bank operates (Athanasoglou, Delis & Staikorous, 2006).

According to Mohan (2012), internal factors reflect differences associated with policies and decisions of banks management with regard to sources and uses of funds while external factors are those that management has no control over and occurs within the environment that the bank operates. Understanding of the financial determinants indicators of financial performance has attracted attention of academic research, bank management and the government (Athanasoglou *et al*., 2006).

Several authors around the world inspected the financial determinants indicators and financial performance in commercial banks, Duraj and Moci (2015) studied on factors influencing banks profitability in Albania, period 1999 to 2014 using multiple regression on 16 commercial banks similarly Alemu and Negasa (2015) studied on performance of commercial banks in Ethiopia, using panel data of banks over the period 2002 to 2013 supported by Fredrick (2015) studied on factors affecting performance of commercial banks in Uganda, for the period 2000 to 2011 using linear multiple regression. Further Ayano and Ponnala (2016) studied on financial performance in Ethiopia where they established that financial performance was affected by the internal factors.

Yadollahzadeh (2013) studied the performance of commercial banks in Iran for nine banks over the period of 2006 to 2010 by using panel data regression method and found that performance was affected by internal factors. Francis (2013) studied the determinants of commercial banks profitability in Sub Saharan African countries where he noted that performance of the bank was affected by both internal and external factors.

Abebe (2012) studied on determinants of financial performance of commercial banks in Ethiopia using panel data of banks over the period 2002 to 2013 the independent variables were capital structure, income diversification, operating cost, effective rate of tax real GDP and inflation while ROA and NIM were used to measure performance. Cekrezi (2015) studied on factors affecting performance of

commercial banks in Albania using panel data of sixteen (16) commercial banks with domestic and foreign capital using cross sectional time series data where he established that both external and internal factors affect performance.

Several studies have also been done in Kenya pertaining to determinants of commercial banks financial performance. Tsuma and Gichinga (2016) studied on financial performance of fifteen (15) large banks from 2001 to 2010 using panel data. Olweny and Shipho (2011) studied on profitability of forty three commercial banks using panel data for the period 2002 to 2008. Onjala (2012) studied on the basic specific factors affecting the commercial banks financial performance on forty three banks (43) using panel data for the period 2001 to 2010.

Ongore and Kusa (2013) studied on the both internal and external factors as indicators of financial performance and ownership identity as a moderating variable in determining financial performance of commercial banks using panel data for the period 2001 to 2010 for forty three commercial banks in Kenya. Even though different studies have been conducted on the determinants of commercial banks financial performance, their results are not conclusive as far as the effects of the financial determinants indicators are concerned and financial performance.

Despite of these studies, Wamiori, Namusonge and Sakwa (2016) stated that there are several other determinants ranging from high risk, credit information sharing and collateral security that affect financial performance in Kenya today. In light of the above facts the aim of this research was to examine the influence of managers' demographic information on the relationship between financial determinants indicators and financial performance of commercial banks in Kenya.

1.1.1 Credit information sharing

Commercial banks transfers' resources from unproductive to productive users/uses hence need for information flow. Okelo, Namusonge and Iravo (2015) observed that borrowers have more information than lenders therefore may use for their personal advantage. In Kenya, Central Bank gazette and operationalized Credit Refence

Bureau Regulations in 2009 to govern the licensing, operation and supervision of Credit reference Bureau as a medium for exchange of credit information (Kerage & Ndede, 2013). Kerage and Jagongo (2014) measured credit information sharing using non-performing loans, operational cost, level of interest and volume of lending.

1.1.2 Risk management practices

Risks are uncertain/threats that derail the company from achieving the set goals. Risk management is the general strategy of proactively managing uncertainties or threats. Commercial banks experience several threats while undertaking financial intermediation function (Kannan & Thangavel, 2008). Gakure, Ngugi and Waithaka (2012) indicated that risk management practice involves risk assessment and measurement. Commercial banks that implement risk management practice harnesses several opportunity to attract more customers and increased efficiency that affects profitability (Oluwafemi, Obawale & Oladunjoye, 2014).

1.1.3 Portfolio Diversification

This refers to investing in different products and locations. Pandey (2010) indicated that diversification is one of the general techniques for reducing investment risk and maximizing returns. Drucker and Puri (2009) indicated that diversified banks benefit from leveraging managerial skills and abilities across products and geographical regions. Commercial banks make several investments ranging from geographical innovations, combination of assets, variety of loan products and variety of deposit accounts.

1.1.4 Collateral Security

Commercial banks approve credit facility on the basis of the security pledged. Larossi (2009) indicated that 90% of firms in different sectors of the economy reported that collateral is a requirement for loan approval since it increased the banks confidence of issuing a loan.

Baker (2009) noted that the lender has the right to obtain the collateral from the borrower in lieu of payment if he defaults on the loan. Collateral items can range from property plant and equipment (motor vehicle, property, cars and houses, accounts receivables and inventory (Wallace, 2013).

1.2 Problem statement

Despite of the implemented number of to improve the financial performance of commercial banks, banks still declare deficit on the outcome of operation in Kenya today. Wamiori, Namusonge and Sakwa (2016) indicated that there were several determinants that influence commercial banks financial performance. The annual report (CBK, 2016) indicated a net deficit of KES 4,640M for the year ended 30 June 2016 compared to net surplus of KES 49,725M for the year ended June 2015. This is evident that more studies should be conducted to establish other determinants of financial performance.

Many studies examined the determinants of financial performance in many countries around the world Ayano and Ponnala (2016) for Ethiopia banks, Cekrezi (2015) for Albian, Duraj and Moci (2015) for Albania, Fredrick (2015) for Uganda, established a significant effect on capital adequacy, Asset quality, Market efficiency, earnings ability and liquidity as determinants of financial performance. In Kenya studies by Tsuma and Gichinga (2016) established a significant relationship between capital adequacy, credit risk, inflation and interest rate and financial performance in commercial banks. Mauko, Muturi and Magwambo (2016) studied on effect of interest rates, credit risk management and foreign exchange risk management and established a significant influence on financial performance. Kiaritha and Muoni and Mung'atu (2015) studied on determinants of financial performance on competition, internal politics, operational costs, savings culture and investment policies and established a significant impact on financial performance in Kenya, Maina and Muturi (2013) established significant effect of financial structure and operational efficiency and an insignificant effect on banks liquidity on financial performance of commercial banks in Kenya. These studies indicate clearly that the factors: credit information sharing, risk management practice, portfolio diversification and

collateral security that affect financial performance were not covered. Besides, the studies did not look at effect of demographic information on the relationship between determinants and financial performance.

The past studies, Ayano and Ponnala (2015); Alemu and Ponnala (2016); Alemu and Negasa (2015); Tsuma and Gichinga (2016); Olweny et al (2011); Maina et al (2013); Onjala (2012) and Ongore et al (2013) used panel data. The current study applied mixed research design that involved the in-depth collection of information about people's attitude and opinions about a particular phenomenon under study. Therefore, the study aimed at examining the influence of Managers' demographic information on the relationship between financial determinants indicators and financial performance of commercial banks in Kenya.

1.3. Research Objective

This highlights both general and specific objectives under study as follows.

1.3.1. General Objective

The general objective of this study examined the influence of Manager's demographic information on the relationship between financial determinants indicators and financial performance of commercial banks in Kenya.

1.3.2. Specific objectives

The specific objectives of the research includes:-

1. To determine the effect of credit information sharing on financial performance of Commercial Banks in Kenya.
2. To examine the influence of risk management practices on financial performance of Commercial Banks in Kenya
3. To investigate the effect of portfolio diversification on financial performance of Commercial Banks in Kenya

4. To evaluate the influence of collateral security on financial performance of Commercial Banks in Kenya
5. To determine the influence of Managers demographic information on the relationship between determinants and Financial Performance of Commercial Banks in Kenya

1.4 Research Questions

The research questions used in this study included:

1. Does credit information sharing affect financial performance of Commercial Banks in Kenya?
2. To what extent does a risk management practice affect financial performance of Commercial Banks in Kenya?
3. Does portfolio diversification affect financial performance of Commercial Banks in Kenya?
4. Does collateral security affect financial performance of Commercial Banks in Kenya?
5. What is the influence of Managers demographic information on the relationship between determinants and Financial Performance of commercial banks in Kenya?

1.5 Research Hypotheses

The following null hypotheses were developed based on review of related literatures on the financial performance of Commercial Banks to be tested.

H_{01}. Credit information sharing has no significant effect on financial performance of Commercial Banks in Kenya

H_{o2}. Risk management practices has no significant effect on financial performance of commercial banks in Kenya

H_{o3}. Portfolio diversification has no significant effect on financial performance of commercial banks in Kenya

H_{o4}. Collateral security has no significant effect on financial performance of commercial banks in Kenya

H_{o5}. Managers' demographic information has no effect on the relationship between determinants and financial performance of commercial banks in Kenya

1.6 Significance of the Study

The study will enable managers of commercial banks to understand the importance of keeping updated information about the client at all times and know why the credit reference bureau was established. The managers will understand the importance of proactively managing risk and maintaining the risk management framework. The study will create awareness to the government on which investments to impose tax to generate revenue and which ones to zero-rate and exempt from taxation. The government will find appropriate monetary and fiscal policies to enhance banks financial performance in order to achieve higher economic growth. The study will provide new knowledge on the effect of demographic information on the relationship between determinants and financial performance in commercial banks in Kenya.

1.7 Scope of the Study

Despite the many factors that exists example capital adequacy, asset quality, management efficiency, earning quality, liquidity, bank size, technology, human capital, loan performance, gross domestic product (GDP), bank concentration, inflation, regulation, income diversification, effective tax rate that affects Commercial Banks performance as studied by other scholars: Ongore and Kusa (2013), Onjala (2012), Alemu and Ponnala (2015) and Ayano and Ponnala (2016).

The current study was limited to portfolio diversification, credit information sharing, risk management practices, collateral security as independent variables and

Managers' demographic information as moderating variable. The target population consisted of forty three licensed commercial banks operating in Kenya (CBK, 2014).

1.8 Limitations of the Study

Respondents took a lot of time to respond and some had lost the questionnaires. The constant follows up and replacement of the lost questionnaires solved this problem. The respondents feared to disclose information due to competitors' threats. The respondents were reassured that the information collected was for academic purposes only as evidenced by the University introductory letter and the benefits obtained thereafter. Further, some managers failed to respond to a number of items and left blank spaces. To solve this problem the researcher communicated easily by reading unanswered questions to get verbal responses and subsequently filling the black spaces.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter discussed the key theories underlying financial determinants, developed a conceptual framework, reviewed variables under study (determinants indicators) expounded on the research gap and summarized the literature review.

2.2 Theoretical Framework

A theory is a systematic explanation of the relationship among phenomena and provides a generalized explanation to an occurrence (Dawson, 2009). Relevant theories to this study include; Information Asymmetry Theory, Risk Management Theory Modern Portfolio Theory and Securitization Theory.

2.2.1 Information Asymmetry theory

There exists an information asymmetry in commercial banks between a privileged borrower and lenders of finances (Akerlof, 1970). Borrowers may choose to misuse their privileged opportunity to borrow finances from financial institutions for investment by not disclosing their eligibility. The commercial banks are under pressure to distinguish between good quality and bad quality borrower. In information asymmetry prices are distorted and do not achieve optimality in the allocation of resource based on the notion that the borrower access information than the lender about the risks of the project for which they receive funds (Scholtens & Van Wensveen, 2008). Okelo, Namusonge and Iravo (2015) echoed that borrowers have an informational advantage over lenders because borrowers have more information about the investment projects they want to undertake.

Kamau, Namusonge and Bichanga (2016) stated that borrowers exploit lenders by managing financial reporting disclosers to their advantage and it is individual for lenders to detect the manipulation practices by borrowers due to lack of inter

personal skills. Kerage (2013) explained that information asymmetry deals with the study of decisions in transactions where one party has more or better information than the other. Okelo et al (2015) indicated that information asymmetry result in credit rationing where borrowers are arbitrarily denied loans as lenders decrease the amount of loans that are offered.

Market efficiency requires that the adjustment to new information occurs very quickly as the information becomes known (Lee, 2006). The social media has made the markets more efficient and quickly information is disseminated. Okelo, Namusonge and Iravo (2015) supported that three forms of market efficiency under efficient market hypothesis are weak form of efficiency; Semi- strong form of efficiency; Strong form of the efficiency. Under the weak form of efficiency stock prices are assumed to reflect any information that may be contained in the past history of the stock prices. So, if the market is characterized by weak form of efficiency, no one investor or any group of investors should be able to earn over the defined period of time abnormal rates of return by using information about historical prices available for them and by using technical analysis (Pandey, 2010). Under the semi-strong form of efficiency all publicly available information is presumed to be reflected in stocks' prices.

Lee (2006) noted that market with a semi strong form of efficiency encompasses the weak form of the hypothesis because the historical market data are part of the larger set of all publicly available information. The market characterized by semi-strong form of efficiency means the information contains both past (private) and current (public) information only (Pandey, 2010). The strong form of efficiency consists of stock prices that fully reflect all information, including private or inside information public and future information (Mathews and Thompson, 2008).

The theory indicates that failure to share credit information brings in moral hazards. This was evident when the borrowers of finances had more information compared to the lenders. This theory therefore cautions that for proper flow of resources from unproductive to productive resources credit information sharing comes handy.

2.2.2 Corporate Risk Management Theory

This theory was developed by the Pyle (1975) who emphasized on the need for risk management framework for the survival of the financial institution. Otwori, (2013) explained that the theory financial institutions encounter several risks example credit, liquidity and operation risks influence the bank's profitability therefore need to manage them in order to realize a profit. Further Mwiya (2010) observed that without implementing risk management strategy profitability of a company was unthinkable (Mwiya, 2010). The researcher observed that risk management was every stakeholder's responsibility therefore proper risk management framework. The stakeholders comprised of government, lenders and borrowers having interests' organization (Muthuva & Memba, 2016).

The corporate risk management theory was relevant to the study because it considers that organizations have several risks therefore need for risk management framework that enables installation of proper risk management practice.

2.2.3 Modern Portfolio Theory

Modern Portfolio Theory (MPT) proposes how rational investors use diversification in order to optimize investments. Markowitz (1952) stated that most investors are cautious when investing thus they take the smallest possible risk in order to obtain the highest possible return Kiaritha, Mouni and Mung'atu (2015) indicated that modern portfolio theory gives efficient combinations of assets to maximize portfolio expected returns for given level of risk or minimize risk for a given level of expected return. Kiaritha *et. al* (2015) captured that the combination of assets becomes possible when individual assets return move in opposite directions.

Markowitz (1959) explained investment in more than one stock enables investors obtain benefits of diversification and a reduction in volatility of the whole portfolio. Omisore, Munirat and Nwufo (2012) in their study in Kenya argued that risk diversification lowers the level of risk even if the assets' returns are not negatively or positively correlated. Berger, Hasan and Zhou (2010) captured four dimensions of

diversification to be loans, deposits, assets, geography and established that they are associated with reduced profits and high costs. Olweny and Shipho (2013) added that income diversification affects banks' profitability significantly. The modern portfolio theory gives insights about the combination of the assets or securities to maximize expected return.

The theory was applied to portfolio diversification determinant to explain the circumstances under which an organization can invest to maximize its returns. Markowitz (1991) stated that investors' goal is to match portfolios to a level of risk tolerance while limiting or avoiding inefficient portfolios. This was supported by (Hagstrom, 2001).

2.2.5 Securitization Theory

Securitization theory seeks to explain the politics in which the assets or property are placed aside as a collateral after some agreement has been made. Waever (2004) stated that a security issue becomes one after labeling that a threat has occurred. Currently for security to work three steps are currently required which are identification of existential threats; emergency action; and effects on inter-unit relations by breaking free of rules (Buzan, Waever and wilde, 1998). This theory was relevant in evaluating the influence of collateral security on commercial banks financial performance. This is informed by the decision that for property to be taken as a collateral or security there must be an identified threat (need of credit facility) the type of emergency action taken is taking the pain of parting with the collateral property for some years until the credit facility is repaid in full which amounts to finally losing custodianship.

In summary all theories discussed above have a bearing on commercial banks financial performance concept. The conceptual framework variables were guided by the theories as follows credit information sharing was anchored on asymmetric information theory which indicated that borrowers possess more information compared to lenders and supported by efficient market hypothesis theory, information is categorized into weak meaning only past information is provided,

semi strong meaning past and present information and strong meaning past, present and future information. Therefore sharing of available information by borrowers and lenders leads to good performance of commercial banks (Kerage, 2013; Ayuma, Namusonge & Iravo, 2015). Risk management practices were anchored on risk management theory and stakeholder theory. Risk management theory provided a framework of how risks are managed and it stresses on individuals responsibility to manage risk (Mwiya, 2010: Muthuva & Memba, 2016). The portfolio diversification variable was guided by the modern portfolio theory. The theory provided that the commercial banks should invest in combined assets that are efficient portfolios (Kiaritha *et al,* 2015). The collateral security was anchored on the securitization theory which provided that borrowers are in need of credit facility and therefore should part with their valuable property by transferring the custodianship until the credit facility is repaid in full security example title deeds and a logbook.

2.3 Conceptual Framework

This was a scheme of variables which the researcher operationalized in order to achieve the set objectives (Mugenda & Mugenda, 2003). Independent variables are variables that a researcher manipulates in order to determine its effect of influence on another variable and (Kombo & Tromp 2006). Independent variable also called explanatory variables is the presumed change in the cause of changes in the dependent variable while dependent variable attempts to indicate the total influence arising from the influence of the independent variable Mugenda and Mugenda, (2003). These are illustrated in figure 2.1 below showing the three types of the variables. The independent variables in this study are Credit Information Sharing, Risk Management Practices, Portfolio Diversification and collateral security. The dependent variable was financial performance measured by profitability and market share and the moderating variable was managers' demographic information measured by experience, education level and earnings per Month.

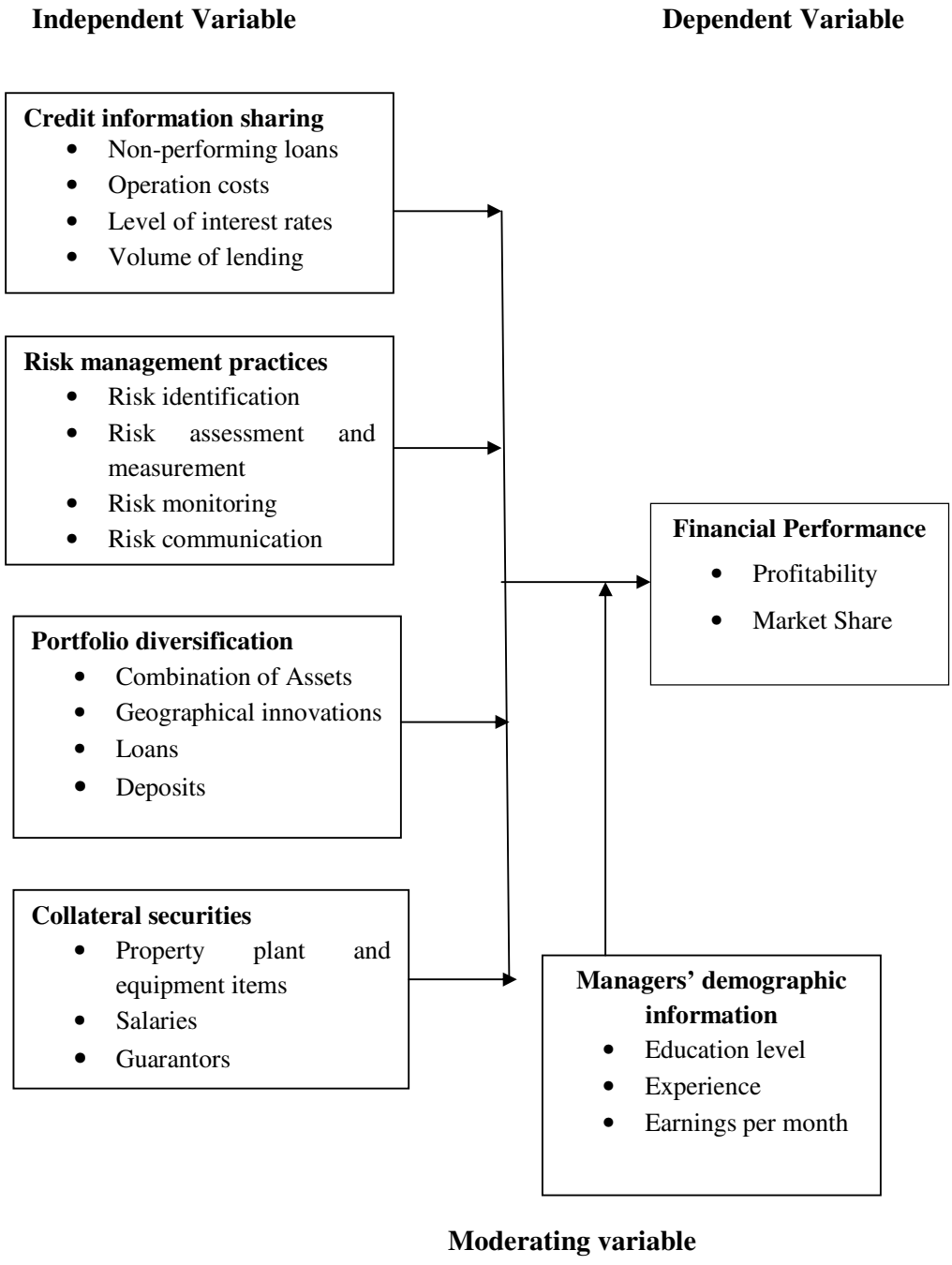

Figure 2.1: Conceptual Framework

2.4 Review of Variables

The review of variables comprised independent variables, dependent variables and moderating variables. Many scholars in Kenya: Ongore and Kusa (2013), Onjala (2012), Olweny and Shipho (2011) and Maina and Muturi (2013) while Ayano and Ponnala (2016) for Ethiopia studied on Capital adequacy, Asset quality, Market efficiency, Earnings ability and Liquidity and macroeconomics factors (CAMEL) as determinants of commercial banks financial performance. However, they did not consider the effect of credit information sharing, risk management practices, portfolio diversification, and collateral security (determinants) of commercial banks financial performance hence informing the current study. Independent variables consisted of the credit information sharing, risk management practices, portfolio diversification and collateral security collectively known as determinants, dependent variable consisted of commercial banks financial performance measured by profitability and moderating variable consisted of managers' demographic information measured by tenure.

2.4.1 Credit Information Sharing

Banks are at the centre of credit intermediation process between borrowers and lenders. They facilitate the transfer of resources from unproductive to productive users. To undertake these function commercial banks need efficient information flow from lenders to borrowers (Kerage & Adede, 2013). Brown, Jappelli and Pagano, (2006) observed that collection and maintaining of current credit information about the customers is the work of credit reference bureaus.

Information asymmetry theory stated that borrowers have more information than lenders and may use to their advantage Okelo, Namusonge and Iravo (2015). Matthews and Thompson, (2008) observed that information sharing is the best predictor of future and past behaviour of the customers. Information sharing enables the credit markets to make lending and borrowing decisions from an informed point of view. This creates an imbalance of power in transactions, which can sometimes cause the transactions to go awry (Yun, 2009).

Kerage and Jagongo (2014), studied on how credit information sharing affected performance of commercial banks in Kenya and he adopted census survey of all commercial banks licenced under the Banking Act (Cap 488 laws of Kenya). The variables under study were as follows; independent variable; Non performing loans portfolio, level of interest rates, volume of lending, operating cost and the dependent variable was Return of Assets (ROA). The results indicated that independent variables were significant and the model revealed a negative association between banking performance and Non-performing Loans, interest rate and operating cost.

Jappeli and Pagano (2005) in their working paper No. 136, captured four effects of information sharing on credit market performance as improvement in the banks' knowledge of applicants' characteristics and permit a more accurate prediction of their repayment probabilities. Reduces the informational rents that banks could otherwise extract from their customers, operate as a borrower discipline device and eliminates borrowers' incentive to become over-indebted by drawing credit simultaneously from many banks without any of them realizing.

Kiage, Willy and Musyoka (2015) studied on influence of positive credit information sharing determinants on the financial performance of commercial Banks in Kenya; a survey of commercial banks in Kisii Town. They examined the following variables to be cost of sharing, privacy protection of positive credit information on financial performance and influence of competition among commercial banks. They established that no switching cost from one bank to the other are involved and therefore people could move from one bank to another (Gehrig & stenbacka, 2005). Kiage *et al*. (2015) in his study on positive information sharing established an increase on net interest income of the banks. These findings contradicted with those of lin *et.al* (2012) who noted that there was no effect on the net interest income of the banks. Concerning the privacy protection he established that the rights of customers should be protected which was consistent with the findings of Villar and Alejandro (2003). On the other hand, the operating costs negatively affected profitability and this was consistent with (Kerage & Jagongo, 2014).

To alleviate the problems of information asymmetry the central bank of Kenya gazetted and operationalized Credit Reference Bureau Regulations in 2009 to govern the licensing, operation and supervision of Credit Reference Bureaus by the Central Bank of Kenya to act as a medium for exchange of credit information (Kerage & Ndede, 2013). The banks currently request for a clearance certificate from CRB before advancing any credit facility to their clients

2.4.2 Risk Management Practices

Risks are uncertainties or threats that may derail a company from achieving the set goals (Kannan & Thangavel, 2008). Risk management is the identification, assessment and prioritization of risks followed by coordinated application of resources to minimize, monitor and control the probability of unfortunate events (Njogo, 2012). Risk management practices in banking sector have greater impact not only the bank but also on the economic growth (Tandelilin, Kaaro & Mahadwartha, 2007). Oluwafemi, Obawale, and Oladunjoye, 2014) observed that banks with better implemented risk management practices may harness some advantages example increased reputation and opportunity to attract more wide customers in building their portfolio of funds resources and experience increased efficiency and profitability. Ariffin and Kassim (2009) stress the importance of good risk management practices to maximize firms' value.

Adeusi, Akeke, Adebisi and Oladunjoye (2013) in their study in Nigerian banks confirmed that there was a significant relationship between performance and risk management and recommended prudent management of risks in order to protect the interest of investors. Soyemi, Ogunleye, Ashogbon and O., F., I (2014) in their study in Nigeria established that risk identification as a risk management practice is critical and therefore identified the risks to be credit liquidity, operating and capital risk and that had a significant relationship on financial performance. Asemeit *et al*. (2012) observed other risk to be added were interest rate, competition and liquidity.

Further Gakure, Ngugi, and Waithaka (2012) in his Kenyan study mentioned another risk management practice to be risk assessment and measurement. He found a

significant relationship between risk assessment and financial performance of commercial banks.

Risk assessment involves analysis of acceptable or tolerance levels of risks, evaluation of risk, likelihood of the risk happening and the severity in case the risk occurs. Risk assessment and measurement may assist the banks management categorise risks into high risk, moderate and low risks and this becomes beneficial when allocating resources. High-risk areas have given priority and maximum allocation of resources compared to low risk areas.

Al-Tamimi and Al-Mazrooei (2007) observed the next step after risk assessment and measurement to be risk monitoring. Risk monitoring can be used to make sure risk management practices are in line as planned and it also helps bank management discover mistake at early stage and consider revising. Risk communication is the final stage of risk management practice where all the information concerning risks is passed to all the stakeholders of the information to ensure implementation or correction of the current risk framework.

Selma, Abdelghani and Rajhi (2013) studied on risk management tools practiced in Tunisian Commercial banks. He developed nine prepositions basing on the Hanim tafri et al (2011) methodology. He identified tools and methods used in managing credit risk, market risk, liquidity risk and operational risk by Tunisian banks. Hassan (2011) provided a comparative study of Bank's Risk Management of Islamic and conventional banks in the Middle East region. The study aimed at identifying the most important types of risk facing the Islamic banks and conventional banks in the Middle East. Hussain and Al-Ajmi (2012) conducted a comparative analysis on risk management practices between the Islamic and conventional banking system in Bahrain. The deduction of the study was to understand risk and risk management, risk identification, risk assessment analysis, risk monitoring, credit risk analysis have a positive and significant effect on risk management practices in Islamic and conventional banking of Bahrain.

Nazir *et al.* (2012) explore the current risk management practices that are adopted by commercial and Islamic banks in Pakistan. The data was collected from the questionnaire to generalize the finding of comparative analysis. A regression model was used to elaborate the results which showed that Pakistani banks are efficient in credit risk analysis, risk monitoring and understanding the risk in the most significant variables of risk management. Moreover the findings of the research revealed that there was significant difference in risk management practices of the Islamic and conventional banks of Pakistan.

Mauko, Muturi and Mogwambo (2016) in Kenyan study on influence of financial risk management practices on performance of commercial banks operating in Migori County, established a significant influence on the interest rate risk management, credit risk management, foreign exchange risk management and liquidity risk management as financial risk management factors on performance in commercial banks in Kenya. Zahangiralam and Masukujjaman (2011) studied on risk management practices in Bangladesh variables considered were types of risks facing a bank, procedure and techniques used to minimize the risk exposure. He reveal that credit risk occupies first rank and weighted average score being 4.08; followed by market risk; operational risk; interest rate risk; foreign exchange risk; equity risk; liquidity risk; money laundering risk; marketing risk & human resource risk. This study therefore examined the influence of risk management practices on financial performance of commercial banks in Kenya.

2.4.3 Portfolio Diversification

A portfolio is a combination of individual assets or securities. Kiaritha, Mouni and Mung'atu (2015) explained that modern portfolio theory gives efficient combinations of assets to maximize portfolio expected returns for given level of risk or minimize risk for a given level of expected return. Kiaritha *et al.* (2015) captured that the combination is made possible when the individual asset return and movement is in opposite directions. This implies that negatively correlated securities give high expected returns at a given level of risk or low risk at any given level of expected.

However, risk diversification lowers the level of risk even if the assets' returns are not negatively or positively correlated (Omisore *et al.,* 2012).

Berger, Hasan and Zhou (2010) in their study in Chinese banks captured four dimensions of diversification to be loans, deposits, assets, geography and established that they are associated with reduced costs and high profits. Olweny and Shipho (2013) added that income diversification affects banks' profits significantly.

The proponents considered diversification without portfolio hence the current study filled the gap by establishing the effect of portfolio diversification on commercial banks financial performance based on the mean variance theory and the portfolio theory. By the investors holding well diversified portfolio of assets and are concerned with the expected rate of return and risk of the portfolio rather than the contribution and risk of individual assets then portfolio theory is at work (Pandey, 2010).

Risks are referred to as systematic risk or undiversified risk this is a risk that is inherent in the entire system or institution (Al-Tamimi & Al-Mazrooei, 2007). It is called undiversified risk because even if an institution diversifies, this risk cannot be avoided. Second, unsystematic risk is risk associated with individual assets of any banks and can be avoided through diversification (Al-Tamimi & Al-Mazrooei, 2007). According Sullivan, (2003) if the asset values do not move up and down in perfect synchrony, a diversified portfolio will have less risk than the weighted average risk of its constituent assets. Pandey (2010) noted that diversification is one of the general techniques for reducing investment risk and maximizing returns.

According to studies on the link between diversification and performance of banks, there is no consensus thus far, with evidence supporting both arguments. Iskandar-Datta and McLaughlin, (2007); Drucker and Puri (2009), diversified banks can benefit from leveraging managerial skills and abilities across products and geographic regions gaining economies of scope through spreading fixed costs over products and regions and providing a financial supermarket to customers who demand multiple products. Wolf and Sanya, (2010) in their study of 226 listed banks

in 11 emerging economies highlight the fact that revenue diversification by banks create value. CBK (2013) supported that diversification of revenue delivers benefits for banks and makes them resilient to adverse effects on income and bank earning shocks. Mercieca (2007) argued that there were no benefits of diversification in banks. However, the scholars failed to find out if portfolio diversification is a determinant of financial performance in commercial banks. On the other hand the envisaged contradiction of the findings by the proponents encourages further research to establish this fact.

Deng and Elyasiani (2008); Laeven and Levine (2007) noted that diversified portfolio in banks can suffer from diluting the comparative advantage of management by going beyond their existing expertise inducing competition and increased agency costs resulting from value-decreasing activities of the managers who have lowered their personal risk.

2.4.4 Collateral Security

Collateral refers to assets pledged by a borrower to secure a loan so that can be seized by the lender if the borrower doesn't make the agreed upon payments (Leitner, 2006). Chen and Wang (2006) observed that collateral is a primary factor determining eternal financing and investment. Larossi (2009) observed that 90 per cent of firms in different sectors of the economy reported collateral as a requirement for loan approval and that this increased the banks confidence of issuing a loan.

Sheffrin (2003) lauded that in lending agreement collateral is a borrower's pledge of specific property to a lender, to secure repayment of a loan. The collateral serves as protection for a lender against a borrower's default that is; it can be used to offset the loan to any borrower failing to pay the principal and interest under the terms of a loan obligation. If a borrower does default on a loan that borrower forfeits the property pledged as collateral, with the lender then becoming the owner of the property (Leitner, 2006). The bank uses the legal process of foreclosure to obtain real estate from a borrower who defaults on a mortgage loan obligation.

Wallace (2013) observed that other things that can be used as collateral are equipment, accounts receivable, business inventory, and fixed assets: cars and houses. Collaterized borrowers become less risky overtime because they make greater efforts to avoid defaulting and refrain from asset substitution (Wallace 2013). Baker (2009) noted that the lender has the right to obtain the collateral from the borrower in lieu of payment if he defaults on the loan.

Bagaka and Memba (2015) studied on influence of collaterals used by small and medium microenterprises on loan performance of commercial bank in Kisii County, Kenya. The study applied descriptive design and census on the fourteen (14) commercial banks and established that most banks prefer motor vehicles on security in order to reduce the risk of default. Further most banks discourage clients from using land and buildings as collaterals.

2.4.5 Managerial Demographic Information

These are managers of an institution who are responsible for running the institution on daily basis and they make managerial decisions or routine decisions within a firm. The managerial decisions include investment in capital projects, division of earnings, management of liquidity in the firm (Pandey, 2010). Through this moderating variable the researcher wanted to establish the influence of demographic information on the relationship between determinants and financial performance. The managers' demographic information includes experience, education level and earnings per month. Kariuki, Namusonge and Orwa (2015) indicated that experienced of managers influence financial performance.

2.5 Critique of Existing Literature

Many scholars around the world: Ayano and Ponnala (2016) for Ethiopia, Nassreddine (2013) for Tunisia banks and Yadollahzadeh (2013) for Iran and Kenyan studies; Ongore and susa (2013) and Maina and Muturi (2013) and Olweny and Shipho (2011) studied on determinants of commercial banks financial performance as advanced by CAMEL and left credit information sharing, risk

management practices, portfolio diversification and collateral security. Besides the scholars used panel data, quantitative and descriptive research designs. The current study expounded on the determinants not factored in CAMEL and used mixed research designs. The researcher adopted and modified the measurement of variables as given by (Njogo, 2012: Al-Tamimi *et al.,* 2007) for risk management practices, Kerage *et al*. (2014) studied on credit information sharing, Berger, Hasan and Zhou (2010) for portfolio diversification, (Wallace 2013: Bagaka & Memba, 2015) for collateral security. The researcher further used the balanced score card to measure performance unlike other studies which applied Return of Assets and Return on Investment.

2.6 Research gaps

Many scholars: Cekrezi (2015), Mauko, Muturi and Magwambo (2016), Duraj and Moci (2015), Fredrick (2015), Alemu and Ponnala (2015) and Alemu and Negasa (2015), Ongore and Kusa (2013), Onjala (2012), Olweny and Shipho (2011), Maina and Muturi (2013) and Ayano and Ponnala (2016) studied on Capital adequacy, Asset quality, Market efficiency, Earnings ability and Liquidity (CAMEL) as the bank specific factors affecting commercial banks performance and Gross Development Product, Inflation, ownership and interest rate as macro-economic factors (external factors) affecting commercial banks performance. However, other critical factors example credit information sharing, risk management practices, portfolio diversification and collateral security were not included hence informing the current study.

Studies Ongore and Kusa (2013), Onjala (2012), Olweny and Shipho (2011), Maina and Muturi (2013) and Ayano and Ponnala (2016) majorly used panel data and quantitative research designs. The current study filled the gap by applying mixed method of research design. Further previous researches did not consider the moderating influence of managers' demographic information (education level, experience and earnings) on the relationship between determinants and commercial banks financial performance in Kenya hence filling this research gap.

2.7 Summary

The study discussed theories that are relevant to the study to be information asymmetry, corporate risk management, modern portfolio theory, and securitization theory.

The study highlighted the significance of those theories to the conceptual framework variables. The independent variables for this study were credit information sharing, risk management practices, portfolio diversification and collateral security a moderating variable was manager's demographic information The dependent variable considered ware financial performance. Besides the critique of empirical literature was done and research gaps identified.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter focuses on research design, target population, sampling and sample size, data collection methods, pilot study, data collection procedures, data analysis and presentation.

3.2 Research Philosophy

The researcher adopted the logical inductive positivism because the research sought to find the in-depth behaviour or particular characteristics, attitude and opinion about people.

3.3 Research Design

Lavrakas (2008) supported that research design is a blue print that guides the process of research from the formulation of the objectives to reporting of the research findings. Kothari (2014) research design facilitates smooth sailing of various research operations which enables research to obtain maximum information with minimum expenditure of resources. Kombo and Tromp (2009) describe a research as the review of the overall research aim and research methods.

Dawson (2009) explained that research design sets out a description and research methods. Polit and Beck (2003) described research design as overall plan for obtaining answers to the questions being studied and for handling some of the difficulties encountered during the research process. Mixed method of research design consisting both qualitative and quantitative approaches guided the study and based on logical inductive positivism that deals with what is measurable to reach conclusions about the hypothesis and address the research objectives and the research problem of this study.

Njeru, (2012) asserted that mixed method of research design is appropriate for collecting descriptive data where the researcher wants to know about people or attitudes consisting one or more variable through direct inquiry. Kariuki, Namusonge and Orwa (2015) applied this research design in their study on the determinants of corporate cash holdings among private manufacturing firms in Kenya. Qualitative research approach uses inductive reasoning to gain an in-depth understanding of respondents' behavior and the reasons of existence of such behavior (Sekaran & Bougie, 2010), while Cooper and Schindler (2006) added that primary objective of qualitative research is to provide deep interpretation of the phenomena under investigation and not to generalize.

On the other hand, quantitative research generates quantifiable data. Creswell (2013) described quantitative research as majorly concerned with observable and measurable phenomena involving people, events or things. A quantitative research makes use of variety of quantitative analysis techniques that range from providing simple descriptive of the variables involved, to establishing statistical relationships among variables through complex statistical modeling and hinges on deductive reasoning or deduction (Kariuki, Namusonge & orwa, 2015).

Cooper and Schindler (2006) explained that quantitative research requires typical research designs where the emphasis of research is to describe, explain and predict phenomena, using probability sampling and relies on larger sample sizes as compared to qualitative research designs. Namusonge (2010) explained that approach of mixed method was most suitable because it involves collecting information from the people on their habits, opinions, attitudes and any other educational or social issues. This gels well with the objective of the study of explaining the influence of demographic information on the relationship between determinants and financial performance of commercial banks.

3.4 Target Population

Hyndman (2008) as cited by Ngumi, Gakure and Njuguna (2013) describes a population as the entire collection of 'things' in which we are interested. Kothari

(2014) described population as all items in any field of inquiry and is known as the 'universe'. Target population is defined as those units for which the findings of the survey are meant to generalize (Kariuki, Namusonge & Orwa, 2015). Sampling theory requires that all possible elements in the target population be identified. The study targeted a population of 43 commercial banks licensed by Central Bank of Kenya. These banks were targeted since they are the major financial institutions that save and lend money for investment by investors. The 43 Commercial banks licensed by CBK are categorized as below (CBK 2014).

Table 3.1: Target population

Category	Number of Commercial Banks in Kenya
Tier 1	6
Tier 2	16
Tier 3	21
Total	**43**

3.5 Sample and Sampling Technique

Kothari (2014) describes sampling frame as a list of members of the research population from which a random sample may be drawn. Mugenda and Mugenda, (2003) elucidated sampling frame as a list that contains the names of all the elements in a universe. A Sample is a subset of a population, selected to participate in a study (Anderson, 2011). Sampling is a process of selecting a subset of the population in which entire population is represented. Kariuki, Namusonge and Orwa (2015) observed that the larger the size of the sample, the more precise the information given about the population.

Gay (2005) holds that for descriptive research the sample size should be 10% of population, but if the population is small (N less than 1000) then 20% may be required. This study adopted sample determination formula by Mugenda and Mugenda, (2003) as cited by Onuko (2015). The formula considers that if the target

population is less than 10,000 less samples are selected. The current study targeted 43 commercial banks which were less than 10,000 and hence the sample size was calculated as shown in the table 3.1

$$nf = \frac{n}{(1+n/N)}$$

$$nf = \frac{384}{(1+384/43)}$$

$$nf = \frac{38.67}{}$$

Where:

The sample size using the above formula was 38.67 which were approximated to 39 commercial banks. Stratified sampling was used as sampling technique because the commercial banks are grouped into strata (Tiers).

Table 3.2: Sample size

Category	**Number of commercial banks**	**Sample size**
Tier 1	6	5
Tier 2	16	14
Tier 3	21	19
Total	**43**	**39**

Purposive sampling was used to identify the specific respondents in the commercial banks of Kenya.

The respondents that were identified were from thirty nine commercial banks and they included Chief Executive Officer, Risk Manager and Credit Control Manager,

who filled in the 117 questionnaires. The distribution of the sample was as indicated in table 3.2. a bove.

3.6 Data Collection Methods

Data was collected using primary and secondary data as explained in 3.5.1 and 3.5.2.

3.6.1 Primary data

Primary data is data collected by the investigator in various field sites explicitly for a comparative study for the first time. The questionnaire contained both closed and open questions. According to Waller (2008) as cited by Kariuki *et al*., (2015) closed ended questions offered accurate information which reduced information prejudice and expenditure data analysis. Schwab (2005) defines questionnaires as measuring instruments that ask short structured and non-structured questions for individuals to answer. The questionnaires were cheap and had standardized answers that enabled compilation of data (Waller, 2008). The open ended questions were incorporated to give respondents freedom to express their views and make suggestions.

Closed-ended questionnaires might be used to find out how many people use a service, open-ended questionnaires might be used to find out what people think about a service and as there are no standard answers to these questions, data analysis is more complex (Ngumi, 2013).

3.6.2 Secondary data

Kothari (2004) defines secondary data as data that is already available, referring to the data which have already been collected and analyzed by someone else. Polit and Beck (2003) explain that secondary research involves the use of data gathered in a previous study to test new hypotheses or explore new relationships. According to Ngumi *et al*. (2013), secondary analysis of existing data is efficient and economical because data collection is typically the most time-consuming and expensive part of a research project. Secondary data was collected from CBK reports, thesis work, newspapers and newsletters and used to validate the findings from analysis of

primary data which was collected using questionnaires and interview schedule. The strategy of using both primary and secondary data to address the same study objectives were meant to improve the interpretive coherence and improve both communicative and validity of the study results.

3.7 Data Collection Procedure

The researcher first obtained an approval from Jomo Kenyatta University of Agriculture and Technology to proceed to the field to collect data. Thereafter consent to conduct the research from the National Council for Science and Technology (NACOSTI) was obtained. Secondly the researcher employed two experienced research assistants whose work was to drop and pick questionnaires from the respondents of the thirty nine sampled Commercial Banks in Kenya.

3.8 Pilot Study

Pilot study was carried out in four (4) Commercial banks which comprised of three members from each bank namely: Chief Executive Officer, Credit Controller and Risk Manager to test the validity of the questionnaire in gathering data required for purposes of the study. The chosen banks across the tiers were not included in the final study. Muchina, Namusonge and Sakwa (2015) explained that the purpose of pilot test is to refine the questionnaire so that respondents do not face challenges in answering questions. Dawson (2009) elucidated that pilot testing assisted researchers to see if the questionnaires obtained the required results.

3.8.1 Validity of the Research Instrument

Muthama, Muturi and Abuga (2016) describe validity as the ability of the research instrument that measurer what it purports to measure. In this study validity was measured in the form of content and criterion validity. Muchina, Namusonge and Sakwa (2016) describe content validity as the extent to which the measurement instrument provides adequate coverage of research questions. Content validity was ensured by subjecting the research instrument to thorough examination by two University supervisors and two randomly selected Credit controller managers who

were asked to evaluate the statements in the questionnaire for relevance and whether they were meaningful, clear and loaded (Linyiru,, Karanja & Gichira, 2015).

Criterion validity is the extent to which measurement instrument strongly correlates with some other criterion or standard that is believed to accurately measure the variable under consideration (Saunders, 2006).

3.8.2 Reliability of the Research Instrument

The study conducted a reliability test to ascertain whether the items that propose to measure the same general construct produce similar scores (Josias, 2005). Muchina *et al.,* (2015) indicated that robustness of the questionnaire and whether or not it produces consistent findings at different times and under different conditions. A single test was undertaken on the four (4) commercial banks in Kenya interviewing three managers from each bank namely: Chief Executive Officer, Risk manager and Credit Controller Manager. The study measured the reliability through the use of cronbach Alpha (α) and established 0.973. Nunnally and Bernstein (1994) explained the threshold of Alpha value to be 0.7 and that Alpha coefficient ranges in value from o to 1 and the higher the score, the more reliable the generated scale. Based on these recommendations, the research instrument was reliable and had adequate internal consistence to collect field data.

3.9 Data Analysis and Presentation

Data was cleaned, arranged, coded, and entered into the database and analyzed. First, factor analysis was done on each variable to assess the quality of questions and the strength of the determinants under study and any items that obtained a value below 0.5 on communalities was omitted from the subsequent analysis.

Factor loading was also done using principal component method and the items with values closer to 1.0 were acceptable for further analysis.

3.9.1 Quantitative Analysis

The quantitative data was analyzed using various statistical methods as adopted from Linyiru *et al*. (2015). The data was further subjected to statistical tests including the t-test, F-test and Chi-test to establish levels of significance and strength of the relationship. Besides multi regression was also used to establish causal effect of one variable upon another and establish the relationship between various variables.

3.9.2 Qualitative Analysis

Qualitative data analysis seeks to make statements on how categories or themes of data are related (Mugenda & Mugenda, 2003). Kombo and Tromp (2006) concur by stating that use of themes to analyze qualitative data is recommended. According to Denzin and Lincoln (2011), qualitative analysis involves studying things in their natural settings, attempting to make sense of, or interpret phenomenon in terms of the meanings people bring to them. The results were summarized into most occurring categories according to research objectives and analyzed using descriptive statistics such as mean, mode and percentages. The qualitative results were assimilated into the quantitative findings in discussion of the results

3.9.3 Correlation Analysis

The Pearson Correlation Coefficient (Pearson *r*) was be used in this study to examine the relationship between the variables (Jahangir & Begum, 2008).

Pearson *r* is a measure of the magnitude and direction of the linear relationship between two variables (Mugenda & Mugenda, 2003). The values of the correlation coefficient always range from -1 to +1. If it lies near to -1, it shows a strong negative correlation but if it lies near to +1 it shows a strong positive correlation (Kothari, 2014). According to Gujarati and Porter (2008), correlation should not go beyond 0.9 to avoid multicolinearity. According to Kariuki, Namusonge and Orwa (2015), multicollinerity occurs when two or more variables in the model are correlated and provide redundant information and therefore values of r greater than 0.9 were used as indicator of multicollinearity problem in this study. This study used bivariate

correlational analysis to assess the strength of direction of the relationship between the variables. According to Ngumi *et al*. (2013), when significance level is very small (less than 0.05) then the correlation is significant and the two variables are linearly related and if the significance level is relatively large, for example, 0.50 or more, then the correlation is not significant and the two variables are not linearly related.

3.9.4 Diagnostic Tests

Normality and Multicollenearity tests were performed to check the assumptions of regression analysis. Normality tests determined whether data sets are well modeled by a normal distribution, this study applied Kolmogorov-Smirnov and the decision rule was that if the p-value obtained was less than 0.05 data was said to be normally distributed. Multicollenearity was tested using Variance Inflation Factor (VIF) which was not to be more than 10 while tolerance wans not be less than 0.1 (Okelo, Namusonge & Iravo, 2015). Besides the multicollenearity was also tested using the rule of thumb correlation coefficient r>0.9.

3.9.5 Multiple Regression Analysis

Regression analysis is a constructive statistical technique that can be used to analyze the associations between a set of independent variables and a single dependent variable (Lind, 2008). According to Jackson (2009) as cited by Kariuki *et al*., (2015), multiple regression analysis involves combining several predictor variables in a single regression equation. This examined how changes in the four independent variables influenced changes in the dependent variable. Regression model fitness was estimated using coefficient of determination which helps explain how closely the predictor variable explains the variations in the dependent variable. T-test statistic was used to test the significance of each individual predictor and the P value was used to make conclusion on whether to reject or accept the null hypotheses. The level of significance of 5% was used as a benchmark. If the P value is less than 0.05 at 5% significance level, reject the null hypotheses and accept the alternative and vice versa (Linyuru *et al.,* 2015): (Kariuki *et al.,* 2015).

The following linear regression model was applied.

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

Where:

Y = Financial Performance
X1 = Credit Information Sharing
X2 = Risk Management Practices
X3 = Portfolio Diversification
X4 = Collateral Security
βo = Constant
ε = Stochastic Term
β1- β4 Regression Coefficients

3.9.6 Moderated Regression Analysis

Moderator variable is one which specifies the magnitude of the relationship between a predictor and a criterion variable (Waller, 2008). Sekaran and Bougie (2010) According to a moderating variable is one that has a strong contingent effect on the relationship between independent and dependent variable. The effect of a moderating variable on the relationship between independent and dependent variable in statistical terms is termed as interaction (Kothari, 2014). The researcher adopted a stepwise regression to derive the findings.

The following regression equation was applied

$Y = \beta 0 + \beta 1 X1 + \beta 2 X2 + \beta 3 X3 + \beta 4 X4 + \beta 1 z X1 Z + \beta 2 z X2 Z + \beta 3 z X3 Z + \beta 4 z X4 Z + \varepsilon$

Where:

Y = Financial Performance

X1 = Credit Information Sharing

X2 = Risk Management Practices

X3 = Portfolio Diversification

X4 = Collateral Security

βo = Constant

ε = Stochastic Term

$\beta 1 - \beta 4$ = Regression Coefficients

$\beta 1Z - \beta 4Z$ = βiz Regression Coefficients for moderator

3.9.7 Variables Definition and Measurement

(a) Dependent

Financial performance was considered as the dependent variable and in previous studies it was measured by Return on Equity ratio (ROE), which was explained by Khrawish (2011) that it is the ratio of Net income after taxes divided by Total Equity Capital and it represents the rate of return earned on the funds invested in the bank by its stockholders. According to Ongore *et al.* (2013) ROE reflects how effectively a bank management is using shareholders' funds. On the other hand Net Interest Margin (NIM) also used to measure performance. Gul (2011) defined NIM to mean net interest income divided by total earnings assets. Higher the Net Interest Margin reflects riskier lending practices associated with substantial loan loss provisions. Return on Assets was also used to measure performance. According to Khrawish (2011) it measures the ability of the bank management to generate income by utilizing the shareholders assets at their dispose. This shows how efficient the resources of the company are used to generate the income. Wen (2010) stated that a higher ROA shows that the company is more efficient in using its resources.

Previous studies used secondary data to measure performance of particular banks in question. This study used both primary data as well as secondary data. The primary data measured by a five point likert scale having the ratings ranging from 5 for strongly agree and 1 for strongly disagree captured the managerial views about the changes in their profitability in the past five years. From the secondary data the information collected helped confirming the results obtained from the primary data.

(b) **Independent Variables**

i. **Credit information sharing**: A structured standard questionnaire was used to solicit responses from managerial staff on the effect of credit information sharing measured by the non-performing loans, operational costs, level of interest rates and volume of lending (Kerage & Jagogo, 2014) . The tool solicited responses on a five (5)-point Likert scale with the following verbal anchors: strongly disagree, disagree, not sure, agree and strongly agree.

ii. **Risk management practices**: to achieve this objective, opinions were collected from different managers in terms of whether risks are well managed in the organization. The risk management practices were measured by risk identification, risk assessment, monitoring and communication (Asemeit &Aduda, 2012). The tool solicited responses on a five (5)-point Likert scale with the following verbal anchors: strongly disagree, disagree, not sure, agree and strongly agree.

iii. **Portfolio diversification**: primary data was solicited to establish whether the commercial banks performance is affected by portfolio investment. This was measured by combination of an asset, loans, variety of deposit accounts, geographical locations (Berger, Hasan & Zhou, 2010). The tool solicited responses on a five (5)-point Likert scale with the following verbal anchors: strongly disagree, disagree, not sure, agree and strongly agree.

iv. **Collateral Securities**: the objective was to examine whether collateral security had an influence on commercial banks performance. This was measured by Plant, property and Equipment deposited, use of salary and guarantors example employers

as security for loans. The tool solicited responses on a five (5)-point Likert scale with the following verbal anchors: strongly disagree, disagree, not sure, agree and strongly agree.

(c) Moderating Variable

Managers' demographic information: the influence of demographic information on the independent variable in relation to the performance. Areas measured include managers experience, education level and earnings per Month.

CHAPTER FOUR

RESEARCH FINDINGS AND DISCUSSION

4.1 Introduction

This chapter presents the findings and discussion of results of the study on the determinants of financial performance of Commercial Banks in Kenya. The data collected was coded, cleaned, analyzed, presented, discussed and inferences made in an attempt to address the specific objectives of the study. Descriptive and inferential statistics were used to analyze the data on each variable. Data was further presented in the form of frequency distribution tables and to facilitate description and explanation of the study findings. The inferential statistics were conducted for the purposes of testing hypothesis that were stated in chapter one and determining the relationship between independent, moderating and dependent variables.

4.2 Response rate

The researcher issued 117 questionnaires to Chief Executive Officer, Risk Manager and Credit Control Manager of Commercial banks in Kenya from which 100 questionnaires were filled in and returned however, 10 (ten) questionnaires were not properly completed and were excluded in the data analysis. This represented a response rate of 85% which was excellent and representative. Bryman and Bell (2011) state that a response rate of 50% is adequate for analysis and reporting, 60% is good and 70% is very good and above 80% is excellent. The persistent and personal calls to the respondents informing them of the study intents and personally administering questionnaires by the researcher and research assistants ensured good response rate.

4.3 Pilot results

The study measured the reliability of the questionnaire through the use of cronbach Alpha (α) which established a threshold at an alpha value of 0.7 (Nunnally &Bernstein, 1994). Alpha coefficient ranges in value from o to 1 and the higher the

score, the more reliable the generated scale is (Delafrooz, 2009). The findings as shown in Table 4.1 shows reliability test for Credit information sharing 0.912, risk management practices of 0.874, portfolio diversification 0.905 and collateral security 0.869 and financial performance 0.891. These findings indicate that internal consistency measures of the variables were acceptable and valid since the Cronbach Alpha coefficients exceeded the pre-determined threshold of 0.7 as recommended by Nully and Bernestine (1994), Linyiru (2015) and Christensen, Johnson and turner (2011). This scale was further supported by Muchina, Namusonge and Sakwa (2015) who stated that scales of 0.7 and above indicate satisfactory reliability

Table 4.1: Reliability Test

Variables	Cronbach's Alpha (α)	Items
Credit information Sharing	0.912	7
Risk Management Practices	0.874	7
Portfolio Diversification	0.905	8
Collateral Security	0.869	7
Financial Performance	0.891	7

4.4 Background Information

This section analyzes the background information which was considered important in this study. This includes the respondents' gender, highest level of education, length of service, earnings per month and age of the respondents.

4.4.1. Gender

The study sought to establish the gender of the respondents. As presented in Table 4.2, majority (56.2%) of the respondents was male, and 43.8% were female. These results were consistent with the findings of Mugambi, Njeru and Memba (2016) where they noted that alignment with one third rule of the Kenya Constitution brings about gender balance and good corporate governance in the institutions. The findings were in agreement with those of Linyiru, Karanja and Gichira (2015) who established that women were active in the informal sectors while men in formal sectors and gave a ratio of 20% to 80% .

Table 4.2: Gender

Gender	Frequency	Percent
Male	59	56.2
Female	46	43.8
Total	**105**	**100.0**

4.4.2 Education level

The study sought to establish the education level of the respondents and whether the education level can determine financial performance. The findings of Table 4.3 indicate that 57.2% of the respondents had a Bachelor's degree, 23.8% of the respondents held Masters, 13.3% of the respondents held Diploma, 3.8% Certificate and 1.9% held a PhD. These results indicate that majority of the respondents in the study were degree holders. Therefore they had requisite academic background to enable them make financial decisions as well as complete questionnaire satisfactorily. These findings were consistent with those of Linyiru, Karanja and Gichira (2015) which indicated that the faster growing banks recruit degree holders as interns.

Table 4.3: Education level

Education level	Frequency	Percent
Certificate	4	3.8
Diploma	14	13.3
Bachelors	60	57.2
Masters	25	23.8
PHD	2	1.9
Total	**105**	**100.0**

4.4.3 Work Experience

The study sought to establish the work experience the respondents had in the banking sector. The purpose was to assist the researcher in gaining insight on the bank manager's experience in financial decisions. The results found in Table 4.4 established that majority (52.4%) of the respondents held between 1-5 years, 31.4% of the respondents 5-10 years and 13.3% of the respondents of less than 1 year and 3% had worked for over 10 years' experience in the banking sector. The findings imply that most managers hold 1 to 5 years of experience. This means Commercial banks recruit the youth after accomplishing their bachelor's degree which is in align with the 2016/2017 performance contracts, where public institution are under obligation to recruit, train and pay interns for more than six months.

Table 4.4: Experience of Managers

Experience	Frequency	Percent
Less than 1 year	14	13.3
Between 1 – 5 years	55	52.4
Between 5 – 10 years	33	31.4
Over 10 years	3	2.9
Total	**105**	**100.0**

4.4.4 Earnings Per Month

The study aimed at establishing the earnings of the respondents and whether those earnings had an effect on financial performance. The results in Table 4.5 established that 49.6% of the respondents earned 50,000 - 150,000, 28.6% of the respondents earned 151,000 - 200,000, 19% of the respondents earned 251,000 - 300,000 and 2.9% of the respondents earned 350,000 and above. This results indicate that majority of respondents earned 50,000-150,000. These imply that earnings commensurate with the level of education and experience of managers in that Commercial banks in Kenya. The findings are in align with Kariuki *et al*. (2015) who indicate that the level of education, years of experience and earning of a manager should correspond to each other.

Table 4.5: Earnings per Month

Earnings	Frequency	Percent
50,000-150,000	52	49.6
151,000- 200,000	30	28.6
251,000 – 300,000	20	19.0
350,000 and above	3	2.9
Total	**105**	**100.0**

4.3.5 Age Distribution

The researcher sought to establish the age distribution of the bank managers and whether this had an effect on financial performance. The results of Table 4.6 indicate that majority (51.5%) of the respondents were within the age bracket of 26-35 years, 28.6% of the respondents were within the age bracket of 36-45 years and 10.5% of the respondents were within the age bracket of 46 and above and 9.5% were at the age of 15 – 25 years. This result indicates that majority of the bank managers were within the age brackets of 26-35years. This implies that most

managers of the Commercial banks of Kenya are youths. The findings concur with those of Table 4.1, 4.2, 4.3 and 4.4.

Table 4.6: Age Distribution

Age	Frequency	Percent
15 – 25	10	9.5
26 – 35	54	51.5
36 – 45	30	28.6
45 and above	11	10.5
Total	**105**	**100**

4.5 Descriptive Results

This section highlights the testing of sampling adequacy, factor results on the variables after which descriptive results were obtained to provide a justification for inferential tests.

4.5.1 Credit information sharing and financial performance

This was the first objective of the study on which sampling adequacy test, factor analysis and descriptive statistic were performed to determine the influence of credit information sharing on commercial banks financial performance in Kenya.

a). Sampling Adequacy

The researcher performed two tests namely Kaiser-Meyer-Olkin Measure of sampling adequacy and Bartlett's Sphericity to examine whether data collected was adequate and appropriate for inferential and other statistical tests. The data was regarded appropriate for statistical analysis if the value of KMO is greater than 0.5 (Field, 2000). Table 4.7 findings indicated that KMO test was 0.922 which was significant since it is greater than the critical level of significance of the test which was set at 0.5 (field, 2000). Besides to the KMO test, the Battler's test of sphericity

was also highly significant with 394.650 with 21 degree of freedom at P<0.05. The findings were in agreement with Linyiru et al (2015) who explained that the critical level of significance of the Battlers test of sphericity is significant at 0.5.

Table 4.7: Credit Information sharing KMO sampling adequacy Bartlett's

Statements	Coefficient
Kaiser-Meyer-Olkin Measure of Sampling Adequacy	0.922
Bartlett's Test Chi-Square	394.650
Bartlett's Test df	21
Bartlett's Test Sig	0

b). Factor Analysis

The extraction of the factors followed the Kaiser criterion where an Eigen value of 1 or more indicates a unique factor (Linyiru et al, 2015). Total variance analysis indicates that the seven (7) statements on Credit Information sharing and financial performance can be factored into one (1) factor. Total variance explained by the extracted factor is 65.63% as shown in Table 4.8.

Table 4.8: Credit Information Sharing Total Variance Explained

Items of CIS	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.594	65.632	65.632	4.594	65.632	65.632
2	0.563	8.041	73.673			
3	0.464	6.629	80.302			
4	0.398	5.692	85.994			
5	0.376	5.375	91.369			
6	0.330	4.715	96.083			
7	0.274	3.917	100.000			

Extraction Method: Principal Component Analysis. CIS (credit information sharing)

Table 4.9 findings indicate that the statements/ questions on credit information sharing attracted coefficients of more than 0.5. This was to establish whether the individual questions under the credit information were strong enough to collect the required information under study. Rahn (2010) explained that a factor loading equal to or greater than 0.5 has good stability and leads to desirable solutions. Kothari (2014) explained that factor analysis through principal component analysis, the value obtained should be closer to 1 to indicate acceptability or above 0.5 at a significance level of less than 0.05. Therefore, these results provide a justification for further statistical analysis to be conducted hence the seven (7) statements were retained for analysis.

Table 4.9: Factor loading of Credit Information sharing

	Statement	Factor loading
1	Our bank does not offer loans to those who already services loans	0.845
2	Our banks is efficient in collection of debts	0.801
3	Our bank rarely takes defaulting clients to court since establishment of credit information sharing	0.806
4	Our bank takes into consideration collateral security provided by borrower when pricing loans	0.792
5	Credit information sharing has reduced interest charged on consumer loans	0.831
6	Volume of credit facilities lend is increased due to information sharing	0.785
7	Conditions of lending are observed to the latter	0.809

Extraction Method: Principal Component Analysis.

c). Descriptive Results

The first objective was to determine the influence of credit information sharing on Commercial Banks financial performance in Kenya. Table 4.10 shows that 51% of the respondents agreed the bank does not offer loans to those who are already servicing loans. Further 52% of the respondents agreed that banks are efficient in collection of debts, 50% of the respondents agreed that banks rarely take defaulting clients to court since establishment of credit information sharing, 51% of the respondents agreed that banks take into consideration collateral security provided by borrowers when pricing loans, 51% of the respondents agreed that credit information sharing has reduced interest charged on consumer loans, 44% agreed that volume of credit facilities lend has increased due to information sharing and finally, 47% of the respondents agreed that conditions of lending are observed to the latter. The mean

score for responses for this section was 3.1300 which indicate that majority of the respondents frequently exhibited credit information sharing as per the below scale, hence making it a key driver of financial performance.

The descriptive results were measured on the scale of 1-5, with 1 indicating strongly disagree, 2-Disagree, 3-Undecided, 4-Agree and 5 indicating strongly agree. The weighted mean was computed and established using the following key. 1 strongly Disagree means the mean value never exhibited was between 1 and 1.80, 2 Disagreed means that the mean value rarely exhibited was between 1.81 and 2.60, 3 Neutral means that the mean value frequently exhibited was 2.61 and 3.40, 4 Agree means that the mean value always exhibited was between 3.41 and 4.20, 5 Strongly Agree means that the mean value never exhibited was between 4.21 and 5.0.

The standard deviation gives the variations of the responses from the mean. It provides an indication of how far the individual response to each factor varies from the mean. Linyiru et al (2015) stated that a standard deviation of more than one (1) indicates that responses are moderately distributed while less than one (1) means there was no consensus on the responses obtained. The average of 1.2883 on all the statements indicates that the respondents were moderately distributed.

Table 4.10: Descriptive results on Credit Information Sharing

	Opinion Statement	SD	D	U	A	SD	Mean	STDV
1	Our bank does not offer loans to those who already servicing the loans	12%	23%	14%	37%	14%	3.1800	1.2743
2	Our banks is efficient in collection of debts	15%	12%	21%	35%	17%	3.270	1.3016
3	Our bank rarely takes defaulting clients court since establishment of credit information sharing	9%	29%	12%	36%	14%	3.1700	1.2477
4	Bank takes into consideration of collateral security provided by borrower when pricing loans	12%	23%	14%	37%	14%	3.1800	1.2743
5	Credit information sharing has reduced interest charged on consumer loans	13%	28%	10%	32%	17%	3.1200	1.3430
6	Volume of credit facilities lend is increased due to information sharing	14%	32%	10%	34%	10%	2.9400	1.2778
7	Conditions of lending are observed	10%	31%	12%	38%	9%	3.0500	1.2098
	Average						**3.1300**	**1.2883**

d). Relationship between credit information Sharing and performance

Correlation result shows the relationship between variables (Jahangir & Begum, 2008). Table 4.11 findings showed a strong positive correlation of 0.713 between credit information sharing and financial performance. The P value was 0.000 at 1 % (0.01) level of significance. This means credit information sharing is a strong determinant of financial performance in Commercial banks in Kenya. This was consistent with the findings of Ngumi *et al.* (2013) who lauded that when significance level is very small (less than 0.010 them the correlation is significant between the two variables.

Table 4.11: Relationship between Credit Information sharing and Financial performance

Variable		Financial Performance (FP)	Credit Information Sharing (CIS)
Financial performance (FP)	Pearson Correlation	1.000	
	Sig. (2-tailed)		
Credit information sharing (CIS)	Pearson Correlation	0.713**	1.000
	Sig. (2-tailed)	0.000	

**Correlation is significant at the 0.01 level (2-tailed).

4.5.2 Risk Management Practices and performance

This was the second objective of the study on which sampling adequacy test, factor analysis and descriptive statistic were performed to examine the influence of risk management practices on commercial banks financial performance in Kenya.

a). Sampling adequacy

The data is regarded appropriate for statistical analysis if the value of KMO is greater than 0.5 (Field, 2000) and (Linyiru et al, 2015). Findings of Table 4.12 indicates that KMO test was 0.885 which was significantly high that is greater than the critical level of significance of the test which was set at 0.5 (field, 2000). Besides to the KMO test, the Bettelers test of sphericity was also highly significant with 283.715 at 21 degree of freedom and $P<0.05$. Kothari (2014) explained that the test of KMO and

Bartletts test should be at a significance level of less than 0.05 to be acceptable. These results provide justification for further statistical analysis to be conducted.

Table 4.12: Risk Management Practices KMO sampling adequacy Bartlett's Sphericity

Test	Coefficient
Kaiser-Meyer-Olkin Measure of Sampling Adequacy	0.885
Bartlett's Test Chi-Square	283.715
Bartlett's Test df	21
Bartlett's Test Sig	0

b). Factor analysis

The extraction of the factors followed the Kaiser criterion where an Eigen value of 1 or more indicates a unique factor (Linyiru, Karanja & Gichira, 2015). Total variance analysis indicates that the seven (7) statements on risk management practices and financial performance can be factored into one (1) factor. Total variance explained by the extracted factor is 57.12% as shown in table 4.13. Kothari (2014) explained that factor analysis results through principal component analysis method, should be closer to 1 to indicate acceptability.

Table 4.13: Risk Management Practices and Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Items	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.998	57.118	57.118	3.998	57.118	57.118
2	0.672	9.603	66.721			
3	0.577	8.248	74.968			
4	0.554	7.914	82.883			
5	0.505	7.217	90.100			
6	0.375	5.356	95.456			
7	0.318	4.544	100.000			

Extraction Method: Principal Component Analysis.

Table 4.14 the findings of factor loading for statements of risk management practice indicate that seven (7) attracted coefficients of more than 0.5 therefore all were retained for analysis. Rahn (2010) described factor loading to be equal to or greater than 0.5 having good stability and leads to desirable solutions. The statements under risk management practice were all retained for further analysis.

Table 4.14: Factor loading for Risk management practice

	Statement	Factor loading
1	Risk identification is done by managers	0.717
2	Roles and responsibilities for risks identified risk are clearly defined	0.712
3	Risks are evaluated in terms of both quantitative and qualitative value	0.742
4	The likelihood of frequency and severity of an event occurring is assessed and mitigated	0.797
5	Banks have mechanisms of transferring certain risks to third parties	0.758
6	Banks maintain contingent plans for any eventualities for quick recovery	0.769
7	Central bank regulates the interest rates	0.791

Extraction Method: Principal Component Analysis.

c) Descriptive results

The second objective was to examine the influence of risk management practice on commercial banks financial performance in Kenya. Table 4.15 shows that 64% of the respondents agreed that risks are identified by the manager, 67% of the respondents agreed that roles and responsibilities for risk identification are clearly defined, 54% of the respondents agreed that the banks maintains contingent plans for any eventualities for quick recovery.

Further 66% of the respondents agreed that risks are evaluated in terms of both quantitative and qualitative value, 59% of the respondents agreed that the likelihood of frequency and severity of an event occurring is assessed and mitigated on priority basis, 65% of the respondents agreed that banks have mechanisms of transferring risks to third parties, 60% of the respondents agreed that the Central Bank of Kenya regulates the interest rate. The mean score for responses for this section was 3.5529

which indicates that majority of the respondents were in agreement that risk management practices is a key driver of financial performance.

The standard deviation gives the variations of the responses from the mean. It provides an indication of how far the individual response to each factor varies from the mean. Linyiru *et al*. (2015) stated that a standard deviation of more than one (1) indicates that responses are moderately distributed while less than one (1) means there was no consensus on the responses obtained. The average of 1.3047 on all the statements indicated that the responses were moderately distributed.

Table 4.15: Descriptive results on Risk Management Practices

	Items	SD%	D%	U%	A%	SA%	Mean	STDV
1	Risk identification is done by managers	11%	13%	12%	37%	27%	3.5600	1.3129
2	Roles and responsibilities identified are clearly defined	10%	18%	5%	40%	27%	3.5600	1.3282
3	Our bank maintains contingent plans for any eventualities for quick recovery	10%	11%	25%	34%	20%	3.4300	1.2165
4	Risks are evaluated in terms of both quantitative and qualitative value	10%	17%	7%	35%	31%	3.6000	1.3484
5	Likelihood of frequency and severity of an event occurring is assessed	6%	16%	19%	39%	20%	3.5100	1.1590
6	Banks have mechanisms of transferring certain risks to 3rd parties	9%	16%	10%	24%	41%	3.7200	1.3786
7	Central bank regulates the interest rates	12%	17%	11%	30%	30%	3.4900	1.3890

d) Relationship between risk management practices and performance

Correlation analysis showed the relationship between the dependent and independent variables (Jahangir & Begum, 2008) as cited by Kariuki (2015). Table 4.16 findings showed a strong positive correlation of 0.789 between risk management practices and financial performance. The P value was 0.000 at 1 % (0.01) level of significance. This means risk management practices is a strong determinant of financial performance in Commercial banks in Kenya.

This was consistent with the findings of Ngumi *et al.* (2013) who lauded that when significance level is very small (less than 0.01) them the correlation is significant between the two variables.

Table 4.16: Relationship between risk management practices and Financial performance

Variable		Financial Performance (FP)	Risk Management Practices (RMP)
Financial Performance (FP)	Pearson Correlation	1.00	
	Sig. (2-tailed)		
Risk Management Practices (RMP)	Pearson Correlation	0.789**	1.00
	Sig. (2-tailed)	0.000	

**. Correlation is significant at the 0.01 level (2-tailed).

4.5.3 Portfolio diversification

This was the third objective of the study on which sampling adequacy test, factor analysis and descriptive statistic were performed to investigate the influence of portfolio diversification on financial performance of Commercial Banks in Kenya.

a) Sampling Adequacy

The data is regarded appropriate for statistical analysis if the value of KMO is greater than 0.5 (Field, 2000) and (Linyiru, 2015). Findings of Table 4.17 indicates that KMO test was 0.911 which is significantly greater than the critical level of significance of the test that was set at 0.5 (field, 2000). Besides to the KMO test, the Bettelers test of sphericity was also highly significant with 414.851 with 28 degree of freedom at P<0.05. Kothari (2014) explained that test of KMO and Bartletts test and factor analysis though principal component analysis method, the results obtained should be closer to 1 to indicate acceptability and at a significance level of less than 0.05. Therefore, these results provide a justification for further statistical analysis to be conducted.

Table 4.17: Portfolio Diversification of KMO sampling adequacy Bartlett's Sphericity

Test	Coefficient
Kaiser-Meyer-Olkin Measure of Sampling Adequacy	0.911
Bartlett's Test Chi-Square	414.851
Bartlett's Test df	28
Bartlett's Test Sig	0

b) Factor analysis

The extraction of the factors followed the Kaiser criterion where an Eigen value of 1 or more indicates a unique factor (Linyiru, Karanja & Gichira, 2015). Total variance

analysis indicates that the eight (8) statements on portfolio diversification and financial performance can be factored into one (1) factor. Total variance explained by the extracted factor is 60.35% as shown in table 4.18. This findings were consistent with Kothari (2014) who stated that factor analysis results through principal component analysis method, should be closer to 1 to indicate acceptability.

Table 4.18: Portfolio Diversification Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Items	**Total**	**% of Variance**	**Cumulative %**	**Total**	**% of Variance**	**Cumulative %**
1	4.828	60.350	60.350	4.828	60.350	60.350
2	0.663	8.287	68.637			
3	0.644	8.046	76.683			
4	0.527	6.584	83.267			
5	0.421	5.258	88.526			
6	0.331	4.139	92.665			
7	0.307	3.841	96.506			
8	0.280	3.494	100.000			

Extraction Method: Principal Component Analysis.

Table 4.19 the findings of factor loading for sub-construct of portfolio diversification indicate that, all statements attracted coefficients of more than 0.5 therefore all were retained for analysis. Linyiru, Karanja and Gichira (2015) and Kothari (2014) explained that factor loading greater than 0.5 has good stability and leads to desirable solutions.

Table 4.19: Factor loading for Portfolio Diversification

	Items	Factor loading
1	Our bank invests in a variety of securities at the stock market	0.835
2	Our bank provides custodianship of valuable documents	0.792
3	Our bank has many branches both foreign and domestic	0.756
4	Our bank has established mobile banking, agency banking	0.807
5	The bank established savings account that earns interest to clients	0.717
6	The bank offer credit facilities of various types e.g farming, education development	0.723
7	Our bank recruits qualified personnel	0.764
8	The bank practices corporate social responsibility	0.813

Extraction Method: Principal Component Analysis.

c) Descriptive results

The third objective was to investigate the influence of portfolio diversification on commercial banks financial performance in Kenya. Table 4.20 showed that

60% of the respondents agreed that banks invest in variety of securities at the stock market, 42% of the respondents agreed that banks provide custodianship of valuable documents, 70% of the respondents agreed that banks have both domestic and foreign branches, 63% of the respondents agreed that banks established mobile banking and agency banking, 65% of the respondents agreed that banks established different savings account that earns interest, 66% of the respondents agreed that banks offer credit facilities of various types example for farming, development and education, 66% of the respondents agreed that banks recruits qualified personnel. 69% of the respondents agreed that banks practices corporate social responsibility.

The mean score for responses for this section was 3.460 which indicated that majority of the respondents agreed that portfolio diversification influences financial

performance of commercial banks in Kenya hence giving a justification of its inclusion as a key driver of financial performance. The standard deviation gives the variations of the responses from the mean. It provides an indication of how far the individual response to each factor varies from the mean. Linyiru *et al*. (2015) stated that a standard deviation of more than one (1) indicates that responses are moderately distributed while less than one (1) means there was no consensus on the responses obtained. The average standard deviation of 1.4220 on all the statements indicates that the respondents were moderately distributed.

Table 4.20: Descriptive results on portfolio diversification

S/N	Opinion Statement	SD%	D%	U%	A%	SA%	Mean	STDV
1	Our banks invests in a variety of securities at the stock market	21%	14%	5%	33%	27%	3.3100	1.5222
2	The bank provides custodian of valuable documents	23%	30%	5%	29%	13%	2.7900	1.4163
3	Our bank has many braces in Kenya	18%	12%	0%	62%	8%	3.3000	1.3065
4	The bank has established mobile banking	21%	13%	3%	29%	34%	3.5500	1.2900
5	The bank established different savings account that earns interest	14%	5%	16%	42%	23%	3.4900	1.4736
6	We offer credit facilities of various types e.g farming	14%	14%	6%	34%	32%	3.4200	1.57108
7	Recruits qualified personnel	14%	14%	6%	34%	32%	3.6300	1.4236
8	Bank practices corporate social responsibility	18%	13%	0%	54%	15%	3.3500	1.3735
	Average						3.4600	1.4220

d) Relationship between Portfolio diversification and performance

Correlation analysis showed the relationship between the dependent and independent variables (Jahangir & Begum, 2008). Table 4.21 findings showed a strong positive correlation of 0.827 between risk management practices and financial performance. The P value was 0.000 at 1 % (0.01) level of significance. This means portfolio

diversification is a strong determinant of financial performance in commercial banks. This was consistent with the findings of Ngumi et al (2013) who lauded that when significance level is very small (less than 0.01) them the correlation is significant between the two variables.

Table 4.21: Relationship between Portfolio diversification and financial performance

Variable		Financial Performance (FP)	Portfolio Diversification (PD)
Financial Performance (FP)	Pearson Correlation	1.000	
	Sig. (2-tailed)		
Portfolio diversification (PD)	Pearson Correlation	0.827**	1.000
	Sig. (2-tailed)	0.000	

4.5.4 Collateral Security on Performance

This was the fourth objective of the study on which sampling adequacy test, factor analysis and descriptive statistic were performed to evaluate the influence of collateral security on financial performance commercial banks in Kenya.

a) Sampling Adequacy

The data is regarded appropriate for statistical analysis if the value of KMO is greater than 0.5 (Field, 2000) and (Linyiru et al, 2015). Findings of Table 4.22 indicate that KMO test was 0.873 which was significantly higher than the critical level of significance of 0.5 (field, 2000). The Betteler's test of sphericity was highly significant with 274.722 at 21 degree of freedom at P=0.000 at 5% level of

significance. These results provide a justification for further statistical analysis to be conducted.

Table 4.22: Collateral security of KMO sampling adequacy Bartlett's Sphericity

Test	Coefficient
Kaiser-Meyer-Olkin Measure of Sampling Adequacy	0.873
Bartlett's Test Chi-Square	274.722
Bartlett's Test df	21
Bartlett's Test Sig	0

b) Factor Analysis

The extraction of the factors followed the Kaiser criterion where an Eigen value of 1 or more indicates a unique factor (Linyiru, Karanja & Gichura, 2015). Total variance analysis indicates that the seven (7) statements on collateral security can be factored into one (1) factor. Total variance explained by the extracted factor is 56.123% as shown in Table 4.23.

Table 4.23: Collateral Security of Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Items	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.929	56.123	56.123	3.929	56.123	56.123
2	0.667	9.531	65.653			
3	0.662	9.456	75.109			
4	0.528	7.540	82.650			
5	0.485	6.924	89.573			
6	0.436	6.223	95.796			
7	0.294	4.204	100.000			

Extraction Method: Principal Component Analysis.

Table 4.24 findings of factor loading for statements on collateral security indicate that seven (7) items attracted coefficients of more than 0.5 therefore were retained for analysis.

Linyiru (2015) explained that a factor loading equal to or greater than 0.5 has good stability and leads to desirable solutions. This findings were consistent with Kothari (2014) who stated that factor analysis results through principal component analysis method, should be closer to 1 to indicate acceptability.

Table 4.24: Factor loading for collateral security

	Statements	Factor loading
1	Our bank attaches clients property to the credit facility taken until it is repaid in full	0.717
2	Attachment of property has increased borrowers commitment in repayment of loans	0.721
3	Defaulted loans leads to non-performing loans	0.735
4	Our bank has standard type of security requirements for different types of loans	0.756
5	Employers are considered a prerequisite for loan guarantying	0.804
6	Loaning policies are verified by the BOD	0.759
7	the banking management decides on the type of property to be attached	0.748

Extraction Method: Principal Component Analysis.

c) Descriptive Results

The fourth objective was to evaluate the influence of collateral security on financial performance of commercial banks. Table 4.25 findings indicate that 49% of the respondents agreed that the clients property is attached until the credit facility is repaid in full, 46% of the respondents agreed that the attachment of property has

increased borrowers commitment in repayment of loans, 60% of the respondents agreed that defaulted loans leads to non-performing loans.

Further 64% of the respondents agreed that the bank has standard type of security requirements for different types of loans, 51% of the respondents agreed that employers are considered a prerequisite for loan guarantor this ensures that the employer, 61% of the respondents agreed that loaning policies are verified by the Board of Directors, 43% of the responses agreed that banking management decides on the type of property to be attachment. The mean score for responses for this section was 3.117 which indicated that majority of the respondents frequently exhibited collateral security effects hence giving a justification of its inclusion as a key driver of financial performance. The weighted mean for the above responses was rated based on the previous key.

The standard deviation gives the variations of the responses from the mean. It provides an indication of how far the individual response to each factor varies from the mean. Linyiru, Karanja and Gichira (2015) stated that a standard deviation of more than one (1) indicates that responses are moderately distributed while less than one (1) means there was no consensus on the responses obtained. The average standard deviation of 1.3580 on all the statements indicates that the respondents were moderately distributed. This implies that this was an important factor of financial performance.

Table 4.25: Descriptive statistics on collateral security

S/N	Statement	SD%	D%	U%	A%	SA%	Mean	STDV
1	Our bank attaches clients property to the credit facility taken until it is repaid in full	12%	25%	14%	39%	10%	3.1000	1.2250
2	Attachment of property has increased borrowers commitment in repayment of loans	20%	29%	5%	34%	12%	2.8900	1.3846
3	Defaulted loans leads to non-performing loans	15%	18%	7%	48%	12%	3.2400	1.3036
4	Our bank has standard type of security requirements for different types of loans	17%	11%	8%	33%	31%	3.5000	1.4599
5	Employers are considered a prerequisite for loan guaranteeing	24%	22%	3%	33%	18%	2.9900	1.5008
6	Loaning policies are verified by the Board of Directors	15%	22%	2%	49%	12%	3.2100	1.3280
7	Banking management decides on the types of property to be attached	19%	24%	14%	35%	8%	2.9890	1.2941

d) Relationship between collateral security and performance

Correlation analysis showed the relationship between the variables (Jahangir & Begum, 2008 ; Kariuki, Namusonge & Orwa, 2015). Table 4.26 findings showed a strong positive correlation of 0.780 between collateral security and financial performance. The P value was 0.000 at 1 % (0.01) level of significance.

Namusonge and Sakwa (2015) interpretation of correlation coefficient is that 0.9 shows very high correlation, 0.7 and above high correlation, 0.5 and above moderate

correlation. This means collateral security is a strong determinant of in Commercial banks financial performance in Kenya. This was consistent with the findings of Ngumi (2013) who lauded that when significance level is very small (less than 0.01) them the correlation is significant between the two variables.

Table 4.26: Relationship between Collateral security and Financial performance

Variable		Financial Performance (FP)	Collateral Security (CS)
Financial Performance	Pearson Correlation	1.000	
	Sig. (2-tailed)		
Collateral Security	Pearson Correlation	0.784**	1.000
	Sig. (2-tailed)	0.000	

4.5.5 Financial Performance

This was the dependent variable of the study on which sampling adequacy test, and descriptive statistic were performed to determine the influence of collateral security on commercial banks financial performance in Kenya.

a) Sampling Adequacy

The data is regarded appropriate for statistical analysis if the value of KMO is greater than 0.5 (Linyiru, 2015). Findings of Table 4.27 indicates that KMO test was 0.906 which was significantly high that is greater than the critical level of significance of the test which was set at 0.5 (field, 2000). Besides to the KMO test, the Betteler's test of sphericity was also highly significant with 324.936 with 21 degree of freedom at P value of 0<0.05. Kothari (2014) indicated that Bartletts test should be less than 0.05. Therefore, these results provide a justification for further statistical analysis to be conducted.

Table 4.27: Financial performance of KMO sampling adequacy Bartlett's Sphericity

Test	Coefficient
Kaiser-Meyer-Olkin Measure of Sampling Adequacy	0.906
Bartlett's Test Chi-Square	324.936
Bartlett's Test df	21
Bartlett's Test Sig	0

b) Descriptive results

Descriptive analysis was performed to establish the respondents' perception concerning the financial performance of banks. Table 4.28 findings indicate that 63% of the respondents agreed banks improved its mechanism of increasing profits, 46% of the respondents agreed that banks have good liquidity position, 52% of the respondents agreed that interest received on savings increased, 56% of the respondents agreed that financial statements are audited and published on time, 55% of the respondents agreed that the overall profitability of the banks increased, 53% of the respondents agreed that banks have several sources of income, 56% of the responses agreed that banks experienced substantial profits in the past five (5) years. The mean score responses of 3.284 indicated that majority of the respondents exhibited higher profits frequently. These imply that profitability is a key factor in measuring financial performance in commercial banks. Athanasoglou *et al.* (2006) explained that good performing banks have higher profits. The weighted mean for the above responses was rated based on the key provided by Kariuki, Namusonge and Orwa (2015). Strongly Disagree meant the mean values of 1 and 1.80 were never exhibited, Disagreed meant the mean values of 1.81 to 2.60 were rarely exhibited, Neutral meant mean values of 2.61 to 3.40 were frequently exhibited, Agreed meant the mean values of 3.41 to 4.20 were always exhibited and Strongly Agree meant that the mean values of 4.21 to 5.0 ever exhibited.

The standard deviation gives the variations of the responses from the mean. It provides an indication of how far the individual response to each factor varies from the mean. Linyiru, Karanja and Gichira (2015) stated that a standard deviation of more than one (1) indicated that responses are moderately distributed while less than one (1) meant there was no consensus on the responses obtained. The average standard deviation of 1.2095 on all the statements indicates that the respondents were moderately distributed.

Table 4.28: Descriptive results of financial performance

S/N	Statement	SD %	D %	N %	A %	SA %	Mean	Std Dev.
1	Our bank has improved its mechanism of mechanisms of increasing profits	11	18	8	35	28	3.5100	1.3595
2	The bank has good liquidity position	13	17	24	32	14	3.1700	1.2477
3	Interest received on savings increased	14	23	11	28	24	3.2500	1.4097
4	Financial statements are audited published on time	12	25	7	30	26	3.3300	1.4075
5	The overall profitability of the banks increased	15	17	13	39	16	3.2400	1.3267
6	Our banks has several sources of income	16	23	8	21	32	3.3300	1.5142
7	Our banks experienced substantially five (5) years	16	24	4	37	19	3.1900	1.4120

4.6 Inferential Statistics

The section tested the assumptions of regression thus normality and multicollinearity after which statistical tests (Correlation analysis, regressions analysis and ANOVA) were performed to test the hypotheses as per the objectives.

4.6.1 Normality

Normality tests determined whether data sets are well modeled by a normal distribution (Farrel & stweart, 2006). Normality was tested and the results are given

on the Table 4.29 based on Kolmogorov–Smirnov normality assumptions basing on 100 data elements. Table 4.29 findings the distribution of financial performance was normal with a mean of 3.28 and significance of 0.000, Credit information sharing showed normal distribution with a mean of 3.13 and the p value of 0.000, Risk management practices had normal distribution with a mean of 3.55 and p value of 0.000, normal distribution was observed on portfolio diversification which had a mean of 3.35 and a p value of 0.000 and finally a normal distribution was observed on the collateral security which had a mean of 3.11 and p value of 0.000. This implied that the above determinants were normally distributed meaning, they satisfied the regression assumption of normality hence further statistics were undertaken (Kothari, 2014).

Table 4.29: Kolmogorov- Smirnov Test

	Mean	**Significance**	**Normality**	**Remarks**
Financial Performance	3.28	.000	Normal	Reject the null hypothesis
Portfolio Diversification	3.35	.000	Normal	Reject null hypothesis
Collateral Security	3.11	.000	Normal	Reject null hypothesis
Credit Information Sharing	3.13	.000	Normal	Reject null hypothesis
Risk Management Practices	3.55	.002	Normal	Reject null hypothesis

4.6.2 Multi collinearity results

Multicollinearity or excessive correlation among explanatory variables preventing identification of an optimal set of variables and this can be measured using Variance Inflation factor (VIF) not to be more than 10 while the equivalent for tolerance, not to be less than 0.1 (Okelo, Namusonge and Iravo, 2015). According to Gathungu, Iravo and Namusonge (2016) multicolinearity refers to excessive correlations of the

predictor variables and correlation is excessive if using rule of thumb r> 0.9. The findings of table 4.30 shows that the VIF of Credit information sharing is 2.938 which is less than 10 and the tolerance level of credit information sharing is 0.340 which is less than 0.1, risk management practices VIF shows 3.540<10 and tolerance of 0.283>0.1, the VIF for portfolio diversification is 2.746<10 and tolerance of 0.364>0.1 and finally the VIF for collateral security was 3.543<10 and tolerance of 0.282>0.1. These implied that there was no multicollinearity since the VIF values were all below 10 and the tolerance values were more than 0.1(Okelo, Namusonge and Iravo, 2015). Lack of multicollinearity has also been supported with the findings of table 4.31 where there was no excessive correlations represented by r>0.9 as indicated by Muchina, Namusonge and Sakwa (2015) and Gathungu, Iravo and Namusonge (2016).

Table 4.30: Multicollinearity tests

Variable	Tolerance	VIF
Credit Information Sharing	0.340	2.938
Risk Management Practices	0.283	3.540
Portfolio Diversification	0.364	2.746
Collateral Security	0.282	3.543

4.7 Correlation Results

The results aimed at determining the degree of association between two or more variables (Jahangir & Begum, 2008). According to Triola (2008) correlation exists between two variables when one is related to the other and its calculation gives correlation coefficient statistics (r) whose values lies between -1 and +1. Interpretation of the correlation matrix followed the yard stick presented by Qui (2011) and Muchina, Namusonge and Sakwa (2015) which stated that rho of 0.9 to 1 shows very high correlation, 0.7 to 0.89 shows high correlation, 0.5 to 0.69 shows moderated correlation, 0.3 to 0.49 shows low correlations and 0.0 to 0.30 shows little

if any correlations. The study dependent variable was financial performance and the independent variables were Credit information sharing, Risk management practices, portfolio diversification and collateral security. Results of Table 4.31 indicated that there was a strong positive correlation of 0.713 between Credit information sharing and financial performance of commercial banks. The P value is 0.000 implying that the relationship was significant. This means that credit information sharing is a strong determinant of the financial performance in commercial banks in Kenya. The results of Table 4.31 indicate there was a strong positive correlation of 0.789 between risk management practices and financial performance of commercial banks. The P value of 0.000 was obtained implying that the relationship was significant. Implying that the risk management practice was a strong determinant of the financial performance of commercial banks. The Table 4.31 further showed a strong positive correlation of 0.827 between the portfolio diversification and financial performance of commercial banks. The p value of 0.000 was obtained indicating that the relationship is significant. Implying that portfolio diversification is a strong determinant of financial performance of commercial banks. A strong positive relationship of 0.780 was further established in Table 4.31 between collateral security and financial performance of commercial banks in Kenya. The p value of 0.000 was obtained indicating that the relationship is significant. This meant that collateral security is an important determinant of financial performance of commercial banks in Kenya. Table 4.31 findings indicate that portfolio diversification variable had the strongest influence on financial performance followed by risk management practice, collateral security and credit information sharing.

Table 4.31: Correlation Matrix

		Financial Performance	Credit Information Sharing	Risk Management Practices	Portfolio Diversification	Collateral Security
FP	Pearson Correlation	1.000				
	Sig. (2-tailed)					
CIS	Pearson Correlation	0.713**	1.000			
	Sig. (2-tailed)	0.000				
RMP	Pearson Correlation	0.789**	0.771**	1.000		
	Sig. (2-tailed)	0.000	0.000			
PD	Pearson Correlation	0.827**	0.708**	0.728**	1.000	
	Sig. (2-tailed)	0.000	0.000	0.000		
CS	Pearson Correlation	0.780**	0.745**	0 .797**	0.758**	1.000
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	

**. Correlation is significant at the 0.01 level (2-tailed).

FP (Financial performance), CIS (Credit information sharing), RMP (Risk management practices), PD (Portfolio Diversification), CS (Collateral Security)

4.8 Regressions Results

The researcher used bivariate and multi regression analysis to determine the linear relationship between the dependent, independent and moderating variables. All the five null hypothesis stated in chapter one were tested using regression model to determine the relationship between the dependent variable which was financial performance and the predictor variables which were credit information sharing, risk management practices, portfolio diversification, collateral security and moderating

effect of demographic information on the relationship between independent and dependent variables.

4.8.1 Test of Hypothesis one

The study hypothesis one was given as follows:

H_{01}: Credit information sharing has no significant effect on the commercial banks financial performance.

H_{02}: Credit information sharing has significant effect on the commercial banks financial performance.

To test this hypothesis a bivariate regression analysis was run. The independent variable was credit information sharing and dependent variable was financial performance. Table 4.32 indicates R to represent the correlation coefficient between the observed and predicted values of financial performance and was 0.713, R^2 was the coefficient of determination and it shows the proportion of the dependent variable explained by the independent variable. R^2 of 50.9% obtained indicate the proportion of changes in financial performance that was explained by credit information sharing

Table 4.32: Credit Information sharing and financial performance model summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.713[a]	0.509	0.504	0.75815

a. Predictors: (Constant), Credit Information Sharing

Further Table 4.33 shows the regression slope coefficients representing the influence of the credit information sharing on financial performance. The t- statistic was used to test the hypothesis on the significance of slope coefficient (β) at 5 per cent level of significance. The results show that the t value was 3.942 and P = 0.000 indicating

that β was statistically significant since the p value of the t-static obtained is sufficiently low (P < 0.005). B represents the value for the regression equation for predicting the dependent variable from the independent variable. The linear regression model of credit information sharing and financial performance was $Y = \beta_o + \beta_1 X_1 + \varepsilon$ which becomes $FP = 0.958 + 0.743X_1$. The null hypothesis was rejected and alternative hypothesis accepted that credit information sharing significantly determine financial performance among commercial banks in Kenya.

Table 4.33: Credit information sharing and financial performance regression coefficients

	Coefficients				
Variable	**B**	**Std. Error**	**Beta**	**t**	**Sig.**
(Constant)	0.958	.243		3.942	.000
Credit Information Sharing	0.743	.074	0.713	10.079	.000

a. Dependent Variable: FP

The overall significance of the regression model (goodness of fit) at 5% significance was tested using ANOVA (F-test). The findings of table 4.34 indicated that the value of computed F statistic was 101.577 with a P- value of 0.000 at the 5% level of significance. The null hypothesis was rejected since the probability value (P value) obtained for F was lower (P<0.005). Thus, the model fit is acceptable implying that there is a significant positive linear relationship between credit information sharing and financial performance of commercial banks in Kenya.

Table 4.34: credit information sharing and financial performance ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	58.385	1	58.385	101.577	.000
Residual	56.329	98	0.575		

a. Dependent Variable: FP

b. Predictors: (Constant), CIS

The model, sum of squares, df, mean square, F, Sig. means as follows:

Model means allows one to specify multiple models in a single regression command

Regression, Residue, Total it looks at breakdown of variance in the outcome variable. It indicates the total variance which can be explained by the independent variables (model) and the variance which is not explained by the independent variable (error).

Sum of squares is associated with three sources of variance, total, model and residue.

Df is degrees of freedom associated with sources of variance

Mean squares are mean squares divided by df

F and Sig. this is F-statistic and P- value associated with it. F is the mean square (regression) divided by the mean square (residual)

4.8.2 Test of Hypothesis two

The study hypothesis was stated as follows:

H_{01} Risk management practice has no significant effect on financial performance of commercial banks

H_{o2} Risk management practices has significant effect on financial performance of commercial banks

Table 4.35 findings indicate that the coefficient determination of R^2 was 0.622 and implying the model explains 62.2% of the variance in the financial performance in commercial banks in Kenya and the (R) correlation coefficient of 0.789 which indicate the strength of association between the observed and predicted values of dependent variable.

Table 4.35: Risk management practice and financial performance model summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.789	0.622	0.618	.66499

a. Predictors: (Constant), Risk Management practice

Further the researcher tested the regression analysis slope coefficient representing the influence of the risk management practice on financial performance. The t- statistic was used to test the hypothesis on the significance of slope coefficient (β) at 5 per cent level of significance. The results of table 4.36 show that the t value was 12.705 and P = 0.000 indicating that β was statistically significant since the p value of the t-static obtained is sufficiently low (P < 0.005). The null hypothesis was rejected and alternative hypothesis accepted that risk management practice significantly determine financial performance among commercial banks in Kenya. B indicates the values for the regression equation for predicting the dependent variable from the independent variable. The linear regression model of risk management practice and financial performance was $Y = \beta_o + \beta_1 X_1 + \varepsilon$ which becomes $FP = 0.225 + 0.861X_1$. The beta factor indicates risk management practice is a strong predictor of financial performance and this was supported by the t of 12.705 at P=0.000 at a significance level of 5%.

Table 4.36: Risk management practice and financial performance regression coefficient

	Coefficients				
Variable	**B**	**Std. Error**	**Beta**	**t**	**Sig.**
(Constant)	0.225	.250		0.901	.370
Risk Management practice	.861	.068	.789	12.705	.000

a. Dependent Variable: Financial Performance

The researcher further performed ANOVA (F-test) to test overall significance of the regression model (goodness of fit) at 5% level of significance. Table 4.37 findings indicate that the value of computed F statistic was 161.411 with a P- value of 0.000 at the 5% level of significance. The null hypothesis was rejected since the probability value (P value) of obtained F was lower (P<0.05). Thus, the model fit is acceptable implying that there was a significant positive linear relationship between risk management practice and financial performance among commercial banks in Kenya.

Table 4.37: Risk management practices and financial performance ANOVA

Model	**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
Regression	71.378	1	71.378	161.411	.000
Residual	43.337	98	.422		

a. Dependent Variable: Financial Performance

b. Predictors: (Constant), Risk management practices

4.8.3 Test of Hypothesis three

The study hypothesis was stated as follows:

H_{01} Portfolio diversification has no significant effect on financial performance of commercial banks

H_{o2} portfolio diversification has significant effect on financial performance of commercial banks

The Regression analysis was run to test the above hypothesis and established that the coefficient determination of R^2 was 0.684 meaning that portfolio diversification explains 68.4% of the variance in the financial performance in commercial banks in Kenya as shown in table 4.38. The correlation coefficient(R) of 0.827 indicates the strength of association between the observed and the predicted values and satisfies that the portfolio diversification is a strong predictor of financial performance.

Table 4.38: Portfolio diversification and financial performance model summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.827[a]	0.684	0.681	0.60841

a. Predictors: (Constant), PD

Further regression analysis slope coefficient representing the influence of the portfolio diversification on financial performance was tested. The t- statistic was used to test the hypothesis on the significance of slope coefficient (β) at 5 per cent level of significance. The results of Table 4.39 show that linear regression model of portfolio diversification on financial performance was $Y = \beta_o + \beta_1 X_1 + \varepsilon$ which becomes $FP = 0.586 + 0.806X_1$. The beta factor indicates the effect of the portfolio diversification on financial performance which has been supported by the higher figure of t= 15.557 at P =0.000 at 5% level of significance. The null hypothesis was rejected and alternative hypothesis accepted that portfolio diversification significantly determine financial performance among commercial banks in Kenya.

Table 4.39: Portfolio Diversification and Financial Performance Regression Coefficients

Variable	B	Std. Error	Beta	T	Sig.
(Constant)	0.586	0.195		3.005	.003
Portfolio Diversification	0.806	0.055	.827	14.557	.000

a. Dependent Variable: FP

Further ANOVA (F-test) was run to find the overall significance of the regression model (goodness of fit) at 5% level of significance. The findings of Table 4.40 indicated that the value of computed F statistic was 171.443 with a P- value of 0.000 at the 5% level of significance. The null hypothesis was rejected since the probability value (P value) of obtained F was significantly low (P<0.005). Thus, the model fit is acceptable implying that there was a significant positive linear relationship between portfolio diversification and financial performance among commercial banks in Kenya.

Table 4.40: Portfolio Diversification and Financial Performance ANOVAa

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	44.397	1	44.397	171.443	.000[b]
Residual	25.378	98	.259		
Total	69.776	99			

a. Dependent Variable: Financial performance,

b. Predictors: (Constant), Portfolio Diversification

4.8.4 Test of Hypothesis four

The study hypothesis was stated as follows:

H_{01} Collateral security has no significant effect on commercial banks financial performance

H_{o2} Collateral security has significant effect on commercial banks financial performance

The Regression analysis was run to test the above hypothesis and Table 4.41 established that the coefficient determination of R^2 was 0.608 which indicate that 60.8% of changes in financial performance were caused by collateral security. The correlation coefficient (R) of 0.780 indicates the strength of association between the observed (collateral security) and predicted variable (financial performance). The findings imply that collateral security was an important predictor of financial performance in commercial banks in Kenya.

Table 4.41: Collateral Security and Financial Performance Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.780	0.608	.604	.52847

a. Predictors: (Constant), Collateral Security

Further the researcher run the regression analysis slope coefficient representing the influence of the collateral security on financial performance. The t- statistic was used to test the hypothesis on the significance of slope coefficient (β) at 5 per cent level of significance. Findings of Table 4.42 show that linear regression model of portfolio diversification on financial performance was $Y = \beta_o + \beta_1 X_1 + \varepsilon$ which becomes $FP = 0.635 + 0.851X_1$. The beta coefficient of 0.780 indicate that collateral security had strong effect on financial performance this has been supported by t= 12.487 at P

=0.000 at 5% level of significance. The null hypothesis was rejected and alternative hypothesis accepted that collateral security significantly determine financial performance among commercial banks in Kenya.

Table 4.42: Collateral security and financial performance regression coefficients

Variable	B	Std. Error	Beta	T	Sig.
(Constant)	0.635	.223		2.851	.005
Collateral Security	0.851	.0068	.780	12.487	.000

a. Dependent Variable: Financial Performance

The researcher further performed ANOVA (F-test) to test overall significance of the regression model (goodness of fit) at 5% level of significance. The findings of table 4.43 indicated that the value of computed F statistic was 155.934 with a P- value of 0.000 at the 5% level of significance. The null hypothesis was rejected since the probability value (P value) of obtained F was lower (P<0.005). Thus, the model fit is acceptable implying that there was a significant positive linear relationship between collateral security and financial performance among commercial banks in Kenya.

Table 4.43: Collateral Security and Financial Performance ANOVA

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	70.443	1	70.443	151.839	.000
Residual	44.271	98	.0.2		
Total	114.75	99			

a. Dependent Variable: Financial performance

b. Predictors: (Constant), Collateral Security

4.8.5 Multiple regression results

Multiple regression analysis was used to establish the joint effect of independent variables; credit information sharing (β, X_1), Risk management practices (β_2, X_2), Portfolio diversification (β_3, X_3) Collateral security (β_4, X_4) on dependent variable (financial performance, Y). The linear regression model used was as follows:

$$Y= \beta_o + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon$$

Table 4.44 the results showed that coefficient of determination (R^2) is 0.770 which meant that the independent variables explained 77% of the changes in the financial performance of commercial banks in Kenya. The correlation coefficient of (R) 0.878 showed the strength of association between the independent and dependent variable. The findings imply that credit information sharing, risk management practice, portfolio diversification and collateral security are strong determinants of financial performance in Commercial banks Kenya.

Table 4.44: Financial Performance Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.878	0.770	.761	.52654

a. Predictors: (Constant), Risk Management Practices, Portfolio theory, Credit Information Sharing and Collateral Security.

Table 4.45 shows that the regression analysis slope coefficient representing the influence of the independent variables: Credit information sharing, Risk management practices, Portfolio diversification and Collateral security on dependent variable: financial performance. The t-statistic was used to test the hypothesis on the significance of slope coefficient at 5% level of significance. The findings showed credit information sharing had a statistically insignificant positive relationship with financial performance of commercial banks in Kenya (t=0.386 and P=0.700> 0.05), risk management practices had a positive and significant relationship with financial performance of commercial banks in Kenya (t = 3.032, P=0.003<0.05), portfolio diversification had a positive and significant relationship with financial performance of commercial banks in Kenya (t =5.585, P=0.000<0.05), and collateral security had a positive and significant relationship with financial performance of commercial banks in Kenya (t =2.065, P=0.042<0.05). The findings of this study implied that the major determinants of financial performance of commercial banks in Kenya are risk management practices, portfolio diversification and collateral security. The linear regression equation was $Y= \beta_o + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$. B coefficient indicate the values for the regression equation for predicting the dependent variable (financial performance) from the independent variables (credit information sharing, risk management practices, portfolio diversification and collateral security). The equation was $Y= -0.40 + 0.034\ X_1 + 0.306 X_2 + 0.444\ X_3 + 0.208\ X_4$. The Beta coefficient compares the magnitude of the coefficients to see which one has more effect. Table 4.45 findings indicate that portfolio diversification has more effect followed by risk management practices, collateral security and finally credit information sharing.

Table 4.45: Financial Performance Regression Coefficients

Variables	B	Std. Error	Beta	t	Sig.
(Constant)	-0.40	0.201		-0.200	0.842
Credit information sharing	0.034	0.088	0.033	0.386	0.700
Risk management practices	0.306	0.101	0.280	3.032	0.003
Portfolio diversification	0.444	0.079	0.455	5.585	0.000
Collateral security	0.208	0.101	0.191	2.065	0.042

a. Dependent Variable: FP

The researcher dropped the insignificant variable (credit information sharing p=0.700 >0.05) and made a modified regression model consisting of risk management practices, portfolio diversification and collateral security. Table 4.46 findings indicate that risk management practices had a statistically significant positive relationship on financial performance of commercial banks in Kenya (t=3.446 and P=0.001< 0.05), portfolio diversification had a significant positive relationship on financial performance of t= 5.847 and p= 0.000< 0.05) and collateral security had a significant positive relationship with financial performance of t= 2.226 and p= 0.28<0.05. The findings further indicate the regression equation to be $Y= \beta_o + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon$ when substituted it becomes $FP= -0.062 + 0.324X_2 + 0.455\ X_3 + 0.219\ X_4$ the equation shows improvement in the prediction of financial performance from the independent variable (risk management practices, portfolio diversification and collateral security). The comparison of magnitude of the coefficients showed that portfolio diversification has more effect compared to risk management practice and collateral security.

Table 4.46: modified financial performance regression coefficients

	Unstandardized Coefficients		Standardized Coefficients		
Variable	**B**	**Std. Error**	**Beta**	**T**	**Sig.**
(Constant)	-.062	.202		-.307	.759
Risk Management practice	.324	.094	.294	3.446	.001
Portfolio Diversification	.455	.078	.462	5.847	.000
Collateral Security	.219	.098	.200	2.226	.028

a. Dependent Variable: FP

Table 4.47 findings indicate that the regression model summary for the three variables remained similar, correlation coefficient r = 0.878 and coefficient of determination R^2 =0.770. Therefore the three independent variables: risk management practices, portfolio diversification and collateral security explained 77.0% of the variances in financial performance and therefore had a strong effect on financial performance of commercial banks in Kenya.

Table 4.47: Financial Performance Model Summary

R	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
0.878[a]	0.770	0.763	0.52952

ANOVA (F-test) was used to test the overall significance of the regression model (goodness of fit) at 5% level of significance. Table 4.48 results indicate the computed F statistic as 107.251 with a P value of 0.000 at the *5%* level of significance. Rejected null hypothesis and accept alternate hypothesis since there was

significant influence of independent variables on financial performance (dependent variable) of commercial banks in Kenya

Table 4.48: Financial Performance ANOVAa

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	90.218	3	30.073	107.251	.000[b]
Residual	26.918	96	0.280		
Total	117.136	99			

a. Dependent Variable: Financial performance

b. Predictors: (Constant), Collateral Security, Portfolio Diversification, Risk Management Practices

4.8.6 Test of Hypothesis Five

The study hypothesis five was stated as follows:

H_{01} Managers' demographics information has no effect on the relationship between financial determinants and financial performance of commercial banks

H_{02} Managers demographics information has effect on the relationship between financial determinants and financial performance of commercial banks

The study employed stepwise moderated multiple regression (MMR) analysis to determine the moderating effect of managers' demographics on the relationship between the independent and dependent variable (Linyiru, Karanja & Gichira, 2015). To find the moderator, transformation of the items under the moderating variable was done to obtain one variable called Z (managers demographics), the Z was multiplied by each of the independent variables and added on the original variables one by one at a time after which regression analysis was performed to show the interactive effect of each new independent variable introduced. According to Sekaran & Bougie

(2010) a moderator is one that has a strong contingent effect on the relationship between independent and dependent variable

Managers' demographic information

It was observed that when managers demographic information was introduced as the moderator on the relationship between determinants and financial performance, the regression model had coefficient of determination (R^2) 0.778 which indicates that determinants (risk management practice, portfolio diversification and collateral security) explain 77.8% showing improvement of 0.8% (77.8%-77.0%). correlation coefficient of 0.882 indicate the association of strength between the independent variables and financial performance.

Table 4.49: Financial performance moderated regression model summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.882[a]	0.778	0.769	0.52315

a. Predictors: (Constant), Z moderated Risk Management Practices, Risk Management Practices, Portfolio Diversification ,Collateral Security

The t-statistic was used to test the hypothesis on the significance of the slope coefficient at 5% level of significance. Table 4.50 showed a significant relationship between risk management practices t= 3.873, P = 0.000< 0.05 portfolio diversification t = 6.075 and P = 0.000 < 0.05, collateral security t = 2.637 and P = 0.010 < 0.05 and managers' demographic information on the risk management practice) t = -1.831 and P = 0.040 < 0.05. The t statistic coefficients show that the manager's demographic information has a moderating influence on the determinants of financial performance among commercial banks in Kenya. The estimated Moderated Multiple Regression (MMR) model was as follows: $Y= \beta 0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_2 z X_2 Z + \varepsilon$. $Y= -0.313+0.458(X2) +0.470(X3) +0.265(X4)-0.036(X_2Z)$

Table 4.50: financial performance moderated regression analysis coefficient

Variables	B	Std. Error	Beta	T	Sig.
(Constant)	-.313	.242		-1.293	.199
Risk Management practices	.458	.118	.415	3.873	.000
Portfolio Diversification	.470	.077	.477	6.075	.000
Collateral security	.265	.100	.241	2.637	.010
Z*risk management Practices	-.036	.020	-.190	-1.831	.040

Dependent variable: financial performance

The researcher further run ANOVA (F- Test) establish the overall significance of the Moderated Multiple Regression (MMR) model (the goodness of fit) at 5% level of significance. Table 4.51 results indicate that the value of computed F statistic was 83.248 with a P value of 0.000 at the *5%* level of significance. The null hypothesis was rejected since the probability value (P value) of computed F is sufficiently low (P=0.000 < 0.05). The Moderated Multiple Regression model fit was acceptable implying that managers' demographic information significantly moderates the relationship between the independent variable (risk management practices, portfolio diversification and collateral security) and dependent variable (financial performance) among commercial banks in Kenya.

Table 4.51: Financial performance moderated ANOVAa

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	91.135	4	22.784	83.248	.000[b]
Residual	26.000	95	.274		

a. Dependent Variable: FP

b. Predictors: (Constant), ZRMP, PD, CS, RMP

4.9 Discussion of key findings

Credit information sharing had a mean 3.1300 which indicated that the commercial banks frequently exhibit credit information sharing, coefficient of correlation of R 0.713 which meant a strong positive and significant relationship between credit information sharing and financial performance. Further the coefficient of determination was established to be 50.9% meaning that credit information sharing causes 50.9% of changes in financial performance implying that credit information sharing has a significant effect on financial performance. These findings were consistent with the findings of Brown, Jappelli & Pagano (2000) who lauded that maintaining of credit information is done by Credit reference Bureaus. Mathews and Thompson (2008) observed that, the sharing of information is the best predictor of future and past behavior and this therefore enables managers to make decisions from informed point of view.

Kegage and Adede (2013) indicate that to facilitate transfer of resources from unproductive to productive uses there need to be efficient credit information sharing. Okelo, Namusonge and Iravo (2015) observed that borrowers have more information than lenders and may use for their advantage therefore need for credit information sharing. Information Asymmetry Theory stated that distortion of information leads to the problems of moral hazard and adverse selection. These findings contradicted those of Kerage and Jagongo (2014) who found a negative association between credit information sharing (non-performing loans, interest rate and operating cost) and financial performance of commercial banks.

The study established the mean of 3.5529 which indicated that majority of the respondents were in agreement that risk management practice is a key driver of financial performance. Correlation of R 0.789 meant that there was a positive significant correlation between risk management practice and financial performance. Coefficient of determination (R^2) of 62.2% implies that risk management practice explains 62.2% of the changes in financial performance. These study findings were consistent with the findings of Tnandelilin *et al.* (2007) who described risk management to have an impact not only on commercial banks financial performance

but also on economic growth of the country. Oluwafemi *et al*. (2014) explained that the banks which implemented risk management practice harness some advantages and maximizes the firms' value. Mwiya (2010) explained that without proper risk management framework in the institutions profitability is unthinkable. These findings are also consistent with the corporate risk management theory, that to ensure survival of a financial institution there should be a proper risk management framework (Pyle, 1975). Arunkumar and Kotreshwar (2005) explained that banks with efficient risk management systems survived financial crisis and had competitive edge in the market in the long run.

Shafiq and Nasr (2010) explained that managing a risk in advance is far better than waiting for its occurrence: prevention is better than cure. This follows that the financial institutions should proactively identify the risks, assess them, mitigate, communicate and monitor. Rudhumburu (2014) highlighted five categories of risks as strategic risk, financial risk, human resource risk, operational risk and reputation risk. The findings are aligned with the stakeholder theory that was advanced by Freeman (1989) where he focused on people who can affect the firm or be affected by the firm. This theory incorporates all stakeholders as part of risk management team to ensure high reward to the firm (Klimczak, 2005). SIST (2016) in its strategic plan 2015 to 2020 highlighted that risk management practice was every person's responsibility. This implies that for institution to realize its mission and vision, strategic objectives have to be clearly outlined, risks proactively identified, assessed and mitigated. IPPF (2012) recommended four steps in which risks can be managed: risk assessment, risk treatment, monitoring and reviewing and communication among departments and other stakeholders.

Further, the study established mean of 3.460 on Portfolio diversification meaning that majority of the respondents were in agreement that portfolio diversification affects financial performance. The coefficient of correlation of 0.827 was found indicating a strong positive correlation between portfolio diversification and financial performance. Coefficient of determination of 68.4% indicates the proportion of changes in financial performance that were explained by portfolio diversification.

These findings indicate that portfolio diversification was a strong driver of financial performance in commercial banks in Kenya. The findings consistent with the portfolio theory advanced by Markowitz (1952) which indicates that investors calculate their investment in order to take smallest risk to maximize returns, Berger et.al (2010) captured four dimensions of diversification to be loans, deposits, assets and geography and established a positive association with reduced costs and high profits. Olweny and Shipho (2013) indicated that income diversification affects banks' profits significantly. Pandey (2010) noted that diversification is one of the general techniques for reducing investment risk and maximizing returns. The findings contradicted those of Laeven (2007) who indicated that diversified portfolio in banks can suffer from diluting the comparable advantage.

The study further established a mean of 3.117 which meant that respondents used collateral security frequently, a strong positive correlation of 0.780 was found between collateral security and financial performance indicating that collateral security affects financial performance. The coefficient of determination of 60.8% was established which indicated the proportion of change in financial performance caused by collateral security. These imply that collateral security was major factor influencing financial performance. The findings were supported by Larossi (2009) who indicated that 90% of firms in different sectors reported collateral as a requirement for loan approval. Baker (2009) noted that the lender has the right to obtain the collateral from the borrower in lieu of payment if he defaults on the loan. While Bagaka and Memba (2015) indicated that most banks prefer motor vehicles as security in order to reduce the risk of default.

The four independent variables together through a multiple regression model explained 77.0% of the variances in financial performance. Besides after moderating the relationship between the independent variables: risk management practices, portfolio diversification and collateral security and dependent variable (financial performance) with the demographic information, the multiple regression model explained 77.8% of the variances in the financial performance which showed improvement of 0.8% (77.8% and 77.0%). It was further noted that portfolio

diversification was the strongest variable followed by risk management practices, collateral security and credit information sharing. These findings are supported by findings on table 4.3, 4.4 and 4.5, where there was a relationship between education level of managers, years of experience and earnings per month. It was indicated that the banks majorly consisted of the youth. This was supported by Linyiru, Karanja and Gichira (2015) supported that manager's demographic information has a moderating effect on the relationship between determinants and financial performance of commercial banks in Kenya. The findings are in conflict with those of Kariuki, Namusonge and Orwa (2015) where he mentioned that experience matters in this case.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The chapter presents the summary of the key findings of the study presented in chapter four, conclusions drawn based on the findings and recommendations. This chapter is therefore, structured into summary, conclusions, recommendations and areas for further research based on the study objectives, and hypothesis.

5.2 Summary

This section summarizes the key findings of the study on the basis of the study objectives. The overall objective was to examine the Influence of manager's demographic information on the relationship between financial determinants indicators and financial performance of commercial banks in Kenya. Specifically, the study determined the influence of credit information sharing, examined the influence of risk management practices, investigated the influence of portfolio diversification, and evaluated the influence of collateral security and to examine the moderating influence of manager's demographic information on commercial banks financial performance in Kenya. The main findings drawn from five specific objectives and based on the output of the descriptive and inferential statistical analyses are as follows:

5.2.1 Influence of Credit Information Sharing on Financial Performance of Commercial Banks in Kenya

The findings revealed that proper structures of credit information sharing would reduce distortion of information that leads to moral hazard and adverse selection. The sharing also ensures low level of interest rate and high volume of lending because both lenders and borrowers would make informed decisions based on updated information. Most commercial banks will reduce non-performing loans and this would lead to improved financial performance. This arrangement therefore, enables

Central Bank of Kenya to achieve its objective of establishing Credit reference Bureau to facilitate the credit information sharing within the financial institutions.

5.2.2 Influence of Risk Management Practices on Financial Performance of Commercial Bank in Kenya

The findings revealed that proper implementation and operationalization of risk management framework would enable institutions manage the risks before the uncertainties befall them. The financial institutions would identify risks, assess the severity and impact of those identified risks to find out the extent of damage suppose those risk happen, and fix measures of mitigating them (risk avoidance and insurance) before they happen after which communicate to all the stakeholders on the effect of each risk, mitigation procedures and their responsibility. Most financial institutions go for insurance of their fixed assets example building, fleet of vehicles while others decide not to take up the projects because they don't want undergo pain. Note that high returns come with many risks therefore the institutions should not avoid taking risks.

5.2.3 Influence of Portfolio Diversification On Financial Performance Of Commercial Banks In Kenya

The findings revealed that investment in several products and projects bring advantage and reduce the level of failure to institutions. Combination of assets or securities enables an institution to survive at all seasons because when one asset is not trading profitably the other asset that can caution the losses incurred and vice versa.

Similarly, when an institution gives a variety of loans, take a variety of deposits and invest geographically it harness many returns as compared to single investments. The geographical innovations refer to establishment of branches.

5.2.4 Influence of Collateral Security on Financial Performance of Commercial Banks in Kenya.

The findings revealed that collateral security was important when advancing credit facilities. Collateral security enables the borrowers to pay promptly and increases the level of confidence to the lenders. The commercial banks to introduce a variety of collaterals to use when taking credit facility because not all clients have the fixed assets (vehicles, land and buildings) currently used they may add salaries and guarantors. Similarly, banks to introduce the discount rates to attract early repayment of loans.

5.2.5 Influence of Demographic Information on the Relationship Between Determinants and Financial Performance of Commercial Banks in Kenya.

The findings reveal that with the introduction of demographic information (experience, education level and earning per month) the effect increased compared to the direct effect between determinants and financial performance. Technical experience enables manager's handle the financial determinants to improve performance. Similarly, with good pay per month and having competent staff in terms of qualifications improves decision made and they assist in implementing operationalizing strategies to enhance performance of institutions.

5.3 Conclusion

Commercial banks should implement the determinants under study in the order of their contribution to financial performance: Portfolio diversification, risk management practices, collateral security and credit information sharing. Demographic information (Experience, education level and earnings of managers) influences the relationship between financial determinants and financial performance of commercial banks in Kenya. The commercial banks should improve and operationalize the policies on risk management practice, portfolio diversification, collateral security and credit information sharing.

5.4 Recommendations

Commercial banks in Kenya should establish the policies on the following matters: risk management practices policy, portfolio diversification policy and collateral policy. The policies will give specific directions on handling of various variables. The commercial banks of Kenya should always update the credit information forwarded to CRB for quality decision making. The Commercial banks should diversify their investments to different products so that if one product fails the business still has future. Consider the following case of diversification; Sugar milling machines produce electricity or ethanol and water plant alongside the normal business to ensure sustainability. On the other hand, paper-milling machine like Pan Paper Mills Webuye during its working lifetime it specialized on production of paper only, therefore when the raw materials are finished, or a misfortune happens the business cease completely. Therefore, I recommend that despite of the line of production the management is majoring in, they should diversify the investments: establishment of income generating units (IGU) to maximise returns and minimize risks. The management should also consider the type of collateral security to enhance commitment level of clients in loan repayment. In addition, should decide the motivation to use to ensure that clients pay on time example use of discount rates.

5.5 Areas For further research

The study on influence of demographic information on the relationship between determinants and financial performance explained 77.8% of the changes in the financial performance in commercial banks in Kenya. The researcher recommends further study to establish other demographic information that affect the relationship between determinants and financial performance in commercial banks that could explain the 22.2%. The researcher further recommends a research to be conducted using similar variables: credit information sharing, risk management practices, portfolio diversification and collateral security, demographic information and financial performance to establish whether same results are attained.

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APPENDICES

Appendix i: Letter of Introduction

Date……
To…….……..
Dear Sir/Madam,

RE: COLLECTION OF RESEARCH DATA

My name is Arnety Nangila Makokha and a PhD student in Business Administration – Finance option at Jomo Kenyatta University of Agriculture and Technology. Currently, I' am carrying out a research on the "*Determinants of Commercial Banks Financial Performance in Kenya"*. I 'am in the process of gathering relevant data for this study. You have been identified as one of the collaborators and respondents in this study and kindly request for your assistance towards making this study a success.

I therefore kindly request you to take some time to respond to the attached questionnaire. I wish to assure you that your responses will be treated with confidentiality and will be used solely for the purpose of this study.

I thank you in advance for your time and responses. It will be appreciated if you can fill the questionnaire within the next 3days to enable early finalization of the study.

Yours Sincerely

Arnety Nangila Makokha

Student Reg No. HD433-C009-1552/2014

Appendix ii: Questionnaire

This questionnaire will be meant to collect data regarding the Determinants of Financial Performance of Commercial Banks in Kenya. The abbreviations in the questionnaire means as follows: **SD**- Strongly Disagree, **D**-Disagree, **NAD**- Neither Disagree Nor Agree (Not Sure), **A**-Agree, **SA**- Strongly Agree

GENERAL INFORMATION

1: Bank Particulars

Name of the Bank ……

2: Respondent Particulars

Gender: Male ☐ Female ☐

SECTION A: DEMOGRAPHIC INFORMATION

a) What is your education level?

PHD ☐

Masters ☐

Bachelors ☐

Diploma ☐

Certificate ☐

b). How long have you worked in the banking sector (tick as appropriate)

NO.	Period	Tick as appropriate
I	Less than 1 year	
Ii	Between 1 – 5 years	
Iii	Between 5 – 10 years	
Iv	Over 10 years	

c). How much does that job group earn (tick as appropriate)

NO.	Earnings per month	Tick as appropriate
I	50,000-150,000	
Ii	151,000- 200,000	
Iii	251,000 – 300,000	
Iv	350,000 and above	

SECTION B: CREDIT INFORMATION SHARING ON PERFOMANCE

This section examines the effect of credit information sharing on profitability. Kindly respond with the response that matches your opinion please tick as appropriate in the boxes using a tick (√) or cross mark (x). The abbreviations in the questionnaire means as follows: **SD**- Strongly Disagree, **D**-Disagree, **NAD**- Neither Disagree Nor Agree (Not Sure), **A**-Agree, **SA**- Strongly Agree

No.	**Statement**	**SD**	**D**	**NAD**	**A**	**SA**
I	Our bank does not offer loans to those who are servicing other loans					
ii	Our banks does not offer any other loan to the client who already defaulted					
iii	Our bank is efficient in collection of debts					
iv	Our bank rarely takes defaulting clients to court since the establishment of credit information sharing in Kenya					
V	The bank takes into consideration of collateral security provided by borrower when pricing					
Vi	Credit information sharing has reduced interest charged on consumer loans					
Vii	Volume of credit facilities lend is increased due to information sharing					
viii	Conditions of lending are observed to the latter					

Are there any other effects of credit information sharing? Yes ☐ No ☐

If yes list them and how they affect returns

_____

_____

SECTION C: RISK MANAGEMENT PRACTICES ON PERFROMANCE

This section examines how risk management practices influences Profitability. Kindly respond with the response that matches your opinion please tick as appropriate in the boxes using a tick (√) or cross mark (x). The abbreviations in the questionnaire means as follows: **SD**- Strongly Disagree, **D**-Disagree, **NAD**- Neither Disagree Nor Agree (Not Sure), **A**-Agree, **SA**- Strongly Agree

No	Statement	SD	D	NAD	A	SA
i	Risk identification is done by managers					
ii	Roles and responsibilities for risks identification are clearly defined					
iii	Risks are evaluated both in terms of both quantitative and qualitative value					
iv	The likelihood of severity and impact are distinguished and high risk places isolated					
v	Banks have mechanisms for transferring certain risks to third parties					
vi	Our bank maintains contingent plans for any eventualities for quick recovery					
vii	Roles and responsibilities of each employees in the risk management efforts of the firm are well communicate to them					

Are there any other effects of risk management practice? Yes ☐ No ☐

If **yes** list them and how they affect performance

_____

_____

_____

SECTION D: PORTFOLIO DIVERSIFICATION ON PERFORMANCE

This section examines how portfolio diversification influences profitability. Kindly respond with the response that matches your opinion please tick as appropriate in the boxes using a tick (√) or cross mark (x). The abbreviations in the questionnaire means as follows: **SD**- Strongly Disagree, **D**-Disagree, **NAD**- Neither Disagree Nor Agree (Not Sure), **A**-Agree, **SA**- Strongly Agree

No.	Statement	SD	D	NAD	A	SA
i	Our bank provides custodianship of valuable documents					
ii	Our bank gives back to the society					
iii	Our bank facilitates money transfer					
iv	Our bank offers Mpesa services					
v	Our bank offers mortgage and development loans					
vi	Our bank offers favorable interest rates on savings					
vii	Our banks recruits qualified personnel					
Viii	Our bank provides automation services					
Ix	Our banks provides consultancy services					

Are there any other effects of portfolio diversification? Yes ☐ No ☐

If **yes** list them and how they affect performance

SECTION E: COLLATERAL SECURITY ON PERFORMANCE

This section examines how collateral security influences profitability. Kindly respond with the response that matches your opinion please tick as appropriate in the boxes using a tick (√) or cross mark (x). The abbreviations in the questionnaire means as follows: **SD**- Strongly Disagree, **D**-Disagree, **NAD**- Neither Disagree Nor Agree (Not Sure), **A**-Agree, **SA**- Strongly Agree

No.	Statement	SD	D	NAD	A	SA
I	Bank attaches clients property to credit facility taken until its repaid in full					
Ii	Our bank equates the amount of loan given to the attached property					
Iii	Attachment of property has increased borrowers commitment in repayment of loans					
Iv	Defaulted loans leads to non-performing loans					
V	Banking management decides on the type of property to be attached.					
Vi	Loaning policies are verified by the Board of Directors					
Vii	Our bank has standard type of security requirements for different types of loans					
Viii	Employers are considered a prerequisite for offering credit facility					

Are there any other effects of collateral security? Yes ☐ No ☐

If yes list them and how they affect performance

SECTION F: BANKS FINANCIAL PERFORMANCE

This section examines the influence of independent variables on performance of commercial banks. Kindly respond with the response that matches your opinion please tick as appropriate in the boxes using a tick (√) or cross mark (x). The abbreviations in the questionnaire means as follows: **SD**- Strongly Disagree, **D**-Disagree, **NAD**- Neither Disagree Nor Agree (Not Sure), **A**-Agree, **SA**- Strongly Agree

No.	Statement	SD	D	NAD	A	SA
I	Our bank generated commendable profits compared to previous years					
Ii	Our bank has introduced several methods of increasing profitability					
Iii	Our bank has pays creditors timely					
Iv	Accessibility to credit facility has improved					
V	Interest received on savings increased					
Vi	Financial statements are audited and published on time					
Vii	The customers have increased compared to past years					
Vii	Bank experienced substantial growth in profits for the past five years					

If it is true that the bank has increased profit by what margin compared to last year?

Are there any other effects of banks financial performance? Yes ☐ No ☐

If yes list them and how they affect Profitability

Thank you for your time

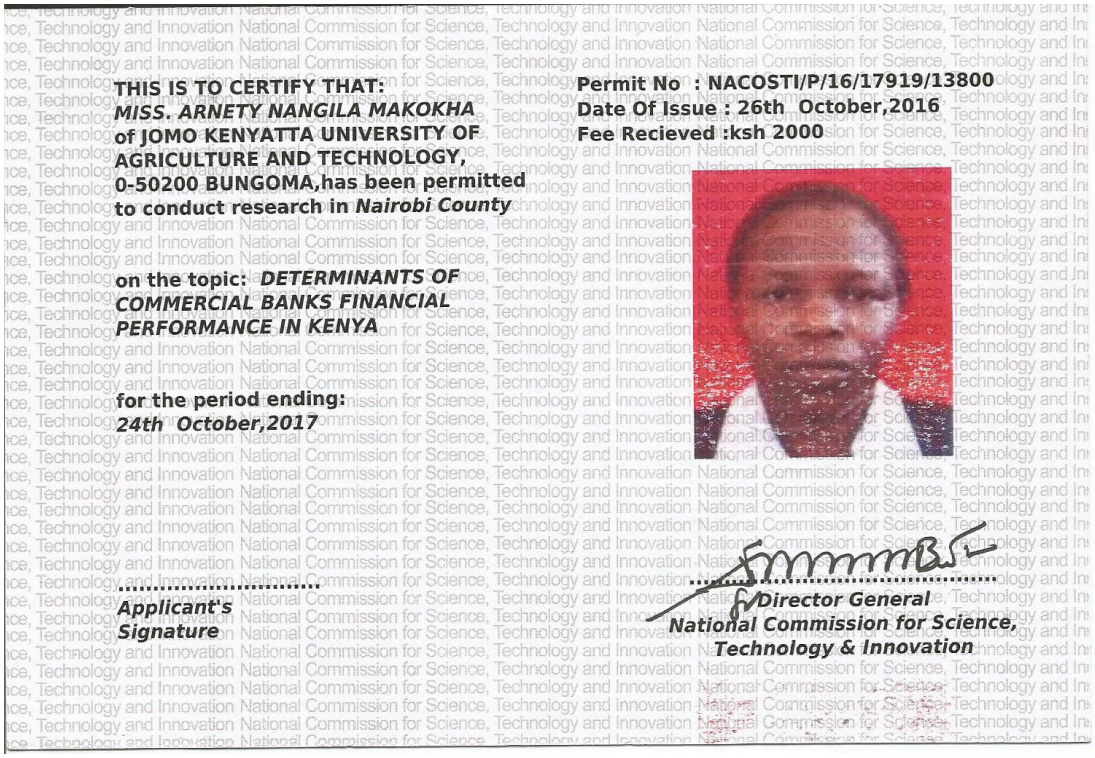
Appendix iii: List of Commercial Banks in Kenya

1. ABC Bank (Kenya)
2. Bank of Africa
3. Bank of Baroda
4. Bank of India
5. Barclays Bank of Kenya
6. Chase Bank Kenya (In Receivership)
7. Citibank
8. Commercial Bank of Africa
9. Consolidated Bank of Kenya
10. Cooperative Bank of Kenya
11. Credit Bank
12. Development Bank of Kenya
13. Diamond Trust Bank
14. Dubai Islamic Bank
15. Ecobank Kenya
16. Equity Bank
17. Family Bank
18. Fidelity Commercial Bank Limited
19. First Community Bank
20. Giro Commercial Bank
21. Guaranty Trust Bank Kenya
22. Guardian Bank

23. Gulf African Bank
24. Habib Bank
25. Habib Bank AG Zurich
26. Housing Finance Company of Kenya
27. I&M Bank
28. Imperial Bank Kenya (In receivership)
29. Jamii Bora Bank
30. Kenya Commercial Bank
31. Middle East Bank Kenya
32. National Bank of Kenya
33. NIC Bank
34. Oriental Commercial Bank
35. Paramount Universal Bank
36. Prime Bank (Kenya)
37. Sidian Bank
38. Spire Bank
39. Stanbic Bank Kenya
40. Standard Chartered Kenya
41. Trans National Bank Kenya
42. United Bank for Africa
43. Victoria Commercial Bank

Source: Central Bank of Kenya, (2016)

Appendix iv: Research Permit



THIS IS TO CERTIFY THAT:
MISS. ARNETY NANGILA MAKOKHA
of JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY, 0-50200 BUNGOMA,has been permitted to conduct research in *Nairobi County*

on the topic: *DETERMINANTS OF COMMERCIAL BANKS FINANCIAL PERFORMANCE IN KENYA*

for the period ending:
24th October,2017

Permit No : NACOSTI/P/16/17919/13800
Date Of Issue : 26th October,2016
Fee Recieved :ksh 2000

.....
Applicant's Signature

.....
Director General
National Commission for Science, Technology & Innovation