

**FINANCIAL RISK MANAGEMENT AND PROFITABILITY OF LOCAL
PRIVATE COMMERCIAL BANKS IN KENYA**

ANNE MABEL BWIBO

D53/OL/KSU/24538/2014

**A RESEARCH PROJECT SUBMITTED TO SCHOOL OF BUSINESS IN
PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF
DEGREE IN MASTER OF BUSINESS ADMINISTRATION (FINANCE OPTION),
KENYATTA UNIVERSITY.**

OCTOBER, 2022

DECLARATION

I the undersigned, declare that this research project is my own work and has not been previously presented for an award.

Signature

Date:

Anne Mabel Bwibo

D53/OL/KSU/24538/2014

Department of Accounting and Finance

Declaration by Supervisor

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

Signature.....

Date.....

Dr. Job Omagwa

Department of Accounting and Finance

School of Business

Kenyatta University

DEDICATION

This work is dedicated to my entire family and all who supported me with the encouragement and motivation.

ACKNOWLEDGEMENT

First, I am thankful for good health, wisdom and also God's grace which has been sufficient and enabled me to write this project. Moreover, I am indebted to Dr. Job Omagwa my supervisor for the patience as well as guidance. I am also indebted to my entire family members who sacrificed their time and resources and walked with me throughout this entire period. May God richly bless and reward all who supported me in coming up with this project.

TABLE OF CONTENTS

DECLARATION	ii
DEDICATION	iii
ACKNOWLEDGEMENT	iv
LIST OF TABLES.....	ix
LIST OF FIGURES.....	x
ABBREVIATIONS AND ACRONYMNS	xi
OPERATIONAL DEFINITION OF TERMS	xii
ABSTRACT	xiv
CHAPTER ONE: INTRODUCTION.....	1
1.1 Background of Study.....	1
1.1.1 Financial Risk Management	3
1.1.2 Prudential Guidelines	5
1.1.3 Profitability	7
1.1.4 Local Private Commercial Banks in Kenya	8
1.2 Statement of the Problem.....	9
1.3 Objectives of the Study.....	12
1.3.1 General Objective	12
1.3.2 Specific Objectives	12
1.4 Research Hypotheses.....	12
1.5 Significance of Study	13
1.6 Scope of the Study	14

1.7 Organization of the study	14
CHAPTER TWO: LITERATURE REVIEW	16
2.1 Introduction	16
2.2 Theoretical Review	16
2.2.1 Modern Portfolio Theory.....	16
2.2.2 Agency Theory	18
2.2.3 Managerial Efficiency Theory.....	19
2.3 Empirical Review	20
2.3.1 Credit Risk Management and Profitability.....	20
2.3.2 Liquidity Risk Management and Profitability	21
2.3.3 Interest Rate Risk Management and Profitability	22
2.3.4 Foreign Exchange Risk Management and Profitability.....	22
2.4 Summary of Related Literature and Research Gaps	23
2.5 Conceptual Framework	28
CHAPTER THREE: RESEARCH METHODOLOGY	29
3.1 Introduction	29
3.2 Research Design	29
3.3 Target Population	29
3.4 Sampling Design	30
3.5 Data Collection Instrument	30
3.5.1 Validity of Research Instrument.....	31
3.5.2 Reliability of Research Instrument	31
3.6 Data Collection Procedure	32

3.7 Data Analysis and Presentation	32
3.8 Ethical Consideration.....	33
CHAPTER FOUR: DATA ANALYSIS, PRESENTATION AND INTERPRETATION.....	34
4.1 Introduction	34
4.2 Response Rate	34
4.3 Respondents' Demographic Information	35
4.3.1 Duration of Working in the Organization.....	35
4.3.2 Job alignment.....	36
4.3.3 Financial Risk Management.....	36
4.3.4 Financial Risk Management System	37
4.3.5 Efficiency and Effectiveness of Financial Risk Management System.....	38
4.4 Descriptive Statistics	39
4.4.1 Credit Risk Management	39
4.4.2 Liquidity Risk Management	42
4.4.3 Interest Rate Risk Management.....	44
4.4.4 Foreign Exchange Risk Management	46
4.4.5 Prudential Guidelines.....	49
4.4.6 Profitability of Local Private Commercial Banks	51
4.5 Inferential Statistics.....	53
4.5.1 Correlation Analysis.....	53
4.5.2 Multiple Regression Analysis	55
CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS ..	59

5.1 Introduction	59
5.2 Summary	59
5.2.1 Credit Risk Management and Local Private Commercial Banks’ Profitability	59
5.2.2 Liquidity Risk Management and Profitability of Local Private Commercial Banks	60
5.2.5 Prudential Guidelines and Profitability of Local Private Commercial Banks	61
5.3 Conclusion	61
5.4 Recommendations.....	63
5.4.1 Recommendations for Practice	63
5.4.2 Policy Recommendations	64
5.7 Areas for Further Research.....	66
REFERENCES	67
APPENDICES.....	74
Appendix I: Introduction Letter	74
Appendix II: Questionnaire.....	75
Appendix III: List of Local Private Commercial Banks.....	83

LIST OF TABLES

Table 1.1: State of the Banking Industry Selected Performance Ratio Report.	8
Table 1.2: Commercial Banks' Ownership and Asset Base (Kshs. Millions).....	9
Table 2.1: Empirical Review	23
Table 4.1: Questionnaire Response Rate	34
Table 4.2: Aspects of Credit Risk Management.....	39
Table 4.3: Aspects of Liquidity Risk Management.....	42
Table 4.4: Aspects of Interest Rate Risk Management	45
Table 4.5: Aspects of Foreign Exchange Risk Management.....	47
Table 4.6: Aspects of Prudential Guideline.....	49
Table 4.7: Aspects of Profitability of the Banks	51
Table 4.8: Correlation Coefficients	53
Table 4.9: Model Summary	55
Table 4.10: ANOVA	56
Table 4.11: Regression Coefficients.....	57

LIST OF FIGURES

Figure 2.1 Conceptual Framework	28
Figure 4.1: Duration of Working in the Organization	35
Figure 4.2: Current Job Position.....	36
Figure 4.3: Critical Function of Financial Risk Management	37
Figure 4.4: Financial Risk Management System.....	38
Figure 4.5: Banks' Profitability Trend	52

ABBREVIATIONS AND ACRONYMNS

CBK	Central Bank of Kenya
CRB	Credit Reference Bureaus
CRM	Credit Risk Management
FOREX	Foreign Exchange
FRM	Financial Risk Management
IR	Interest Rate
KBA	Kenya Bankers Association
KDIC	Kenya Deposit Insurance Corporation
LRM	Liquidity Risk Management
MFB	Micro Finance Banks
NPL	Non-Performing Loans
NSE	Nairobi Securities Exchange
PG	Prudential Guidelines
RMG	Risk Management Guidelines
ROA	Return on Assets
ROC	Return on Capital
ROE	Return on Equity
ROI	Return on Investment

OPERATIONAL DEFINITION OF TERMS

Central Bank of Kenya	A regulatory authority for the banks, which is responsible for formulating monetary policy and promoting financial stability of all institutions under its jurisdiction.
Credit risk management	is a complete process of mitigating losses by looking at the adequacy of a bank's capital and the loan loss reserves at any given time.
Cross-currency swaps	are an over-the-counter (OTC) derivative in form of an agreement between two parties to exchange interest payments and principal denominated in two different currencies.
Financial Risk Management	is a programme that concentrates on unpredictability of banks' capital markets and attempts to mitigate any possible negative impact on the bank's financial results.
Foreign exchange risk management	is the strategy or programme listing down a set of procedures to be employed by a company to minimize financial exposure resulting from currency fluctuations.
Lending interest rate risk management	is a systematic mechanism for regulating, tracking and controlling unpredictable interest rate fluctuations exposed to banks.

Liquidity risk management	is the ability to ensure that obligations to depositors or to finance increase in assets is met as they fall due without incurring unacceptable costs or losses.
Local Private Commercial Bank	A profit-oriented bank that offers services including taking deposits, giving loans, and providing investment products and whose controlling shareholders are domiciled in Kenya.
Profit	An assessment parameter of the net outcomes of policies and activities undertaken by the banks and foretells their stability and growth.
Prudential Guideline	A set of instruction developed by CBK to provide information and guidance to institutions licensed to conduct the Kenyan banking business in conformity with section 3,4 and 5 of banking act.
Return on Assets	Financial ratio that highlights how effectively company's resources are employed to earn income.
Return on Equity	A Financial ratio indicating the profit made by a business relative to amount of shareholder equity invested.

ABSTRACT

Commercial banks are responsible for providing financial services thus form part of the backbone of an economy. While providing the financial service, they are exposed to various financial risks. Risks have adverse cost elements associated with them thus ultimately affect financial performance of institutions. In 2017, as a result of interest rate volatility, Family bank and Standard chartered issued profit warnings a sign of poor performance. During the period 2015-2017, three commercial banks in Kenya i.e. Dubai bank, Chase bank as well as Imperial bank were put under receivership owing to liquidity and capital deficiency challenges among other reasons which exposed financial risk to depositors, creditors as well as the banking sector; hence, the study analysed Financial Risk Management (FRM) and Profitability of Local Private Commercial Banks' in Kenya. Specifically, the research determined effect of CRM, LRM, IR Risk Management and also FOREX Risk Management on Local Private Kenyan Commercial banks' profitability. The theories underpinning the study were Modern Portfolio Theory, Managerial Efficiency Theory and Agency Theory. Moreover, descriptive research approach was deployed during the research. The study targeted 20 local private commercial banks operating as at 2021 in Kenya. Banks selection was conducted using the census design. Primary data was gathered using questionnaires. Purposive sampling was adopted to select respondents. Data was analysed using descriptive statistics and multiple regression analysis. The study found that CRM has a significant positive effect on profitability; LRM has a significant positive effect on profitability; IR risk management has significant positive effect on profitability and foreign exchange rate risk management has a significant positive effect on local private commercial banks' profitability in Kenya. This indicates that improvement in CRM (credit limits, credit insurance and loan appraisals) improves the banks' profitability. Improvement in LRM (loan to total deposit ratio, liquid coverage ratio and net stability funding ratio) improves profitability of the local private commercial banks in Kenya, enhancement in interest rate risk management (IR limits and interest on loans) increases local private commercial banks' profitability and improvement in foreign exchange risk management (cross currency swaps and price adjustment) improves local private commercial banks' profitability. Hence, the study recommends that local private commercial banks ought to set up maximum credit limits for the borrowers, obtain credit insurance policy and examine the market value of the collaterals used in order to lower default rate on the loan hence improve the banks' profitability. Moreover, local private commercial banks should charge common percentage of interest rate on all loans offered in order to attract many borrowers who would like to take different types of loans to cater for the diverse needs hence increasing the banks' profitability. Additionally, the local private commercial banks ought to use cross currency swaps to exchange funding in one currency for funding in another currency as well as hedge investments in foreign currency bonds. The study recommends that further studies ought to be carried out to examine the effect of FRM on profitability of the foreign owned banks and entire banking sector in Kenya. In addition, more studies need to be conducted to assess other factors influencing banks management.

CHAPTER ONE

INTRODUCTION

1.1 Background of Study

Banks are responsible for providing financial services thus form part of the backbone of an economy. They are exposed to various financial risks due to adverse changes in macroeconomic environment, increased competition and the variety of services they offer. Banks are exposed to numerous risks in today's competitive world, including credit risk, market risk, liquidity risk, foreign exchange risk, as well as interest rate risk. Moreover, these dangers could jeopardize bank's survival as well as success in long run as well as short run time horizons (Al – Tamimi *et.al*, 2007). Market, credit and operational risks are greatest concern to most commercial banks in Kenya at 100%, 95% and 93% respectively (Central Bank of Kenya, 2011). Market risk is described as risk that occurs due to price change in the market, and it is influenced by currency risk, commodity risk and interest rate risk (Sharpe, William, Alexander & Bailey, 2013).

Risks have adverse cost elements associated with them thus ultimately affects the financial performance of institutions. In 2015, Dubai bank (in Kenya) was put under receivership because of among other reasons liquidity as well as capital deficiencies which exposed depositors, creditors and the banking sector to financial risk. In October 2015, Imperial bank was placed under receivership owing to unsafe business practices and circumstances of conducting business within this particular bank (Kenya Deposit Insurance Corporation, 2015). Chase bank was put under receivership in April 2016 by CBK. This move was necessitated by banks non-compliance with regulatory banking ratios and its failure to report insider loans which led to bank's inability to comply with its financial obligations (Central Bank of Kenya, 2016).

The adverse effect of risk in institutions has made risk management an integral function aimed at reducing the risk exposure. Banking is considered a business of risk thus making risk management crucial for survival of the banks. A robust risk management framework helps in enhancing the performance of organizations by reducing their exposure to risk (Iqbal & Mirakhor, 2011). The International Professional Practice Framework for international auditors indicates that immature risk management systems yield little return on investments and operate as compliance cost (Practice Guide, 2010). To reduce financial risks, a variety of financial risk management techniques may be used. Portfolio diversification for diversifiable risks and hedging activities for non-diversifiable risks are two examples (Sharpe et.al. 2002). Risk management involves assessment of the dangers associated with particular position by measuring its magnitude of the exposure and selecting appropriate strategies for mitigating such exposures in a manner that firms' institutional goals are not deterred (Awojobi *et.al*, 2001).

CBK, the banks regulatory body; introduced some risk management guidelines to minimize the financial institutions risk exposure. A survey done by CBK in 2011 revealed that some of the benefits of risk management guidelines issued in 2005 helped institutions to enhance risk awareness and management, increased the banks efficiency as well as their effectiveness in managing risk. Financial losses were minimized in organisations that followed the guidelines, and efficient and well-resourced risk management departments were developed to improve processes of making decision (Central Bank of Kenya, 2011). From these findings, risk management is an important component and has an impact on institutions where it is practiced. This research assessed the financial risk management measures undertaken by local private commercial banks to reduce the risk exposure on

credit risk, interest rate risk, liquidity risk and foreign exchange risk and ultimate effect of these measures on profitability of the banks.

1.1.1 Financial Risk Management

Financial risk management is a sequence of processes which involves identification of the risk, assessment of risk using data monitoring as well as reporting and risk model of risk examination and control of the risk (Basel Committee, 2001). Due to the vast diversity of risk exposure and banking activities undertaken by the banks, there exists no risk management guideline for banks that achieves the same results for all banks. Each bank institution is required to tailor its risk management programs and policies to meet its needs given their operating circumstances. Risk management ought to be specialized, focused, and regulated to achieve optimal results (Seppala, 2000). This study will focus on the control measures applicable to liquidity risk, credit risk, interest rate risk and foreign exchange risk.

Credit risk is the probability that actual ROI/loan will vary from anticipated return. Restricted institutional capability, inadequate credit policies, volatile interest rates, poor credit assessment, direct lending and inadequate central bank supervision are among the credit risk sources. Moreover, credit risk can be managed through stabilization of interest rates, setting of credit limits, taking credit insurance and performing loan appraisals. These measures will help in reducing loan defaults and NPLs thus reducing the portfolio risk which has an ultimate effect on the banks performance (Bank Supervision Report, 2006).

Liquidity risk management refers to a financial institution's ability to strike a balance between preventing the issue of holding surplus liquid assets while still ensuring liquid assets does not decline before financial obligations are due. Due to a lack of adequate

liquidity, banks will be unable to fulfil their obligations as they occur, making the entire financial system unstable (Decker, 2000). Loan to deposit ratio examines the liquidity of the bank by relating the total loan to banks' deposit over duration of time. The liquidity coverage ratio aims at enhancing resilience over a short duration by making ensuring banks have short term assets of high quality to withstand acute situations while the net stability funding ratio helps to support resilience over a long period of time by ensuring banks benefit from secured source of funds to finance their activities (Basel III Liquidity standards).

Interest rate risk results from financial intermediation which creates a mismatch in the maturity structure and repricing terms of their assets as well as liabilities. Repricing risks, yield curve risk, as well as basis risk are some of the various types of interest rate risk. Moreover, banks can be endangered to IR risk due to IR exposure of non-interest income, such as mortgage interest. As end users and dealers, banks use derivatives to hedge against the statement of financial position risks. This helps to increase noninterest revenue as the derivatives provide easy option for banks to modify their risk profile. Some of the controls employed for managing interest rate risk include the use of derivative contracts to evade IR risk. This also assists banks to reduce on delegation costs thus allowing the banks to intermediate more effectively (Mbai, 2007).

Kenya has attempted to regulate interest rates by acts of parliament that were passed into law in 2001 and 2003. A provision that a borrower avoids repayment until it is clear a loan is non-performing and interest charge is equivalent to principal was enacted by the act. The act also stipulates that the minimum as well as maximum lending rates should be published by CBK in the local press and that retaining constant margin between lending rate as well

as deposit rate, nominal interest rate should be attached to maturity rate of 91-day Treasury bill. In September 2016, an amended law capping interest rates and setting bounds on lending and deposit was enforced. The legislation establishes a maximum lending rate of not more than 4 percent above CBK's base rate, as well as a minimum interest rate of at least 70% on deposits held in interest-earning accounts with commercial banks.

Foreign exchange risk is connected with sudden changes in exchange exposures as well as exchange rates. These changes result to an effect on worth of a firm's assets or liabilities (Bodnar, 2008). Companies are endangered to FOREX risk if initiatives results rely upon future rates of exchange as the changes in exchange rate cannot be totally anticipated; and when there are fluctuations in the relative value of currencies which end up affecting the competitive viability or position of an organization translating to translation and economic exposures (Salifu *et.al*, 2007). Foreign exchange exposure is commonly addressed through company's management policies, intuition and former experiences (Wanjohi, 2013). Forward contracts, leading and lagging, cross currency swaps, futures, netting, and value shifts are all examples of FOREX risk mitigation strategies. These methods have different impacts on different entities (Tafri *et.al*, 2011).

1.1.2 Prudential Guidelines

Banking institutions, microfinance banks, money remittance providers, credit reference bureaus as well as FOREX bureaus are all controlled by the CBK Banking act; Cap 488, and the prudential regulations released thereunder, which license and govern commercial banks and mortgage finance companies. CBK's mission involves safeguarding depositors' interests by encouraging responsible corporate practices and risk management by financial institutions (Central Bank of Kenya, 2017; 2018). After realizing the shortcomings of the

conventional approach, which recommended an identical supervisory approach to all institutions irrespective of the variations in the business operation conducted and risk appetites involved, CBK adopted the Risk Based Supervisory approach in 2004. The risk based supervision approach emphasizes on understanding adequacy of an institutions risk management system on an on-going basis and encourages greater interaction between an institutions management and the CBK (Central Bank of Kenya, 2013).

Due to lack of internal risk management information systems, many banks reported to have heavily relied on CBK's prudential guidance to track risk in the 2004 risk management assessment. As a result, in 2005, CBK issued Risk Management Guidelines (RMGs) to assist organizations under its jurisdiction in developing and enforcing internal risk management policies as well as procedures in order to properly trace, assess, and disclose risks. After the implementation of the RMGs in 2005, subsequent events and developments in global economy including Basel Committee pronouncements and international financial crisis, have necessitated review of prudential guidelines and risk management directives by Central Banks to ensure they remain applicable to operating environment circumstances (Central Bank of Kenya, 2011).

The RMGs for 2005 were later reviewed thus the guidelines currently in use are the RMGs which became operational on 1st January 2013. These guidelines are domiciled under CBK/PG/20 (Guideline on stress testing) and provide rules to all institutions governed by CBK on minimum requirements for risk management systems and frameworks (Central Bank of Kenya, 2013). Stress testing, as described by CBK/PG/20, is a risk management technique for evaluating the possible impact of a particular event or movement to a collection of financial indicators affecting an institution's financial position (Central Bank

of Kenya, 2013). The minimum criteria for developing stress testing processes as part of an institution's overall risk management programs and structures are outlined in the guideline. This study focussed on CBK/PG/20 as the moderating variable.

1.1.3 Profitability

Profitability refers to an assessment parameter of net outcomes of policies and activities undertaken by all commercial banks and foretells bank's stability as well as growth in preceding and future years (Greuning & Bratonovic, 2009). Bank profitability level is influenced by macroeconomic indicators notwithstanding the move in banking industry towards increased geographic variation and enhanced usage of financial engineering models to handle risk and linked with forecasting of business trend (Sufian, 2009). The totality of financial performance and performance metrics reveal how the banking industry adjusts over time in response to dynamics of policy as well as competition such as profitability among others. Profitability can be measured using ROA or ROE. ROA refers to ratio of income as percentage of total assets. It highlights the effectiveness of company's resources in creating income. The higher the ROA, the more efficient a company is in resource utilization (Wen, 2010). The ROE measures amount of return a corporation makes in relation to amount of shareholder equity invested (Ongore, 2011).

The Kenya bank stability report published in 2019 indicated that banking industry profitability increased in 2018 compared to 2017. The profit increased in 2017 from KSh133.2 billion to KSh152.7 billion in the year 2018. Profit before tax increased by 14.6% as a result of the 16 percent increase in interest on government securities from Kshs 102.8 billion in year 2017 to Kshs 119.2 billion in 2018. Furthermore, rise in profitability was due to higher increase in revenue of Kshs 27.1 billion versus a Ksh7.6 billion increase

in expenses. In December 2018, the Return on Assets (ROA) increased by 0.2% to 2.8%. However, the Return on Equity (ROE) rose from 20.6 percent in December 2017 to 22.5 percent in December 2018, owing to higher profitability (12.4 percent) compared to a 4.1 percent rise in Shareholders' funds over the same period (Capital Markets Authority; Central Bank of Kenya, 2019).

A performance analysis by Kenya Bankers Association indicates that bank's ROA and ROE have been fluctuating over the years as highlighted in table 1.1 below. The decline noted in the ROE in the past years except from 2018 has been attributed to increase in credit quality impaired matched by higher provisions and an increase in cost to income ratio (Kenya Bankers Association, 2020).

Table 1. 1: State of the Banking Industry Selected Performance Ratio Report.

Measure/Year	2015	2016	2017	2018	2019
ROA	4.0%	4.0%	3.4%	3.5%	3.3%
ROE	25.0%	24.8%	20.8%	22.6%	21.7%

Source: KBA Financial Database (2020)

This research sought to establish whether financial risk management measures undertaken by the banks have significant effect on profits reported by the banks. The study used ROA and also ROE ratios as dimensions of profitability for local private commercial banks. This helped in assessing the efficiency in resource utilization and the commercial banks financial strength.

1.1.4 Local Private Commercial Banks in Kenya

Banking sector consists of CBK, as regulatory authority. Primary classification of banks is based on who owns them. Some banks are owned by local people or businesses, while others are owned by foreign people or businesses. Moreover, banks are also categorized by

the type of business they conduct, such as microfinance and commercial banks. In terms of ownership, the Kenyan commercial banks are categorized into 3 broader sectors i.e. private commercial banks, foreign commercial banks and local public commercial banks,. Local public banks are banks in which the government has majority shareholding in them. Private commercial banks are those whose controlling shareholders are domiciled within Kenya whilst the foreign commercial banks are those whose controlling shareholding is domiciled outside the country.

The 37 of the 39 banking institutions were privately held, with the Kenyan government owning a controlling stake in two of banks. 20 of the 39 privately held banks were owned by locals, while 17 were owned by foreigners. There were 21 commercial banks as well as one mortgage financing company among the 22 locally operated institutions. The distribution of banks according ownership is as classified in table 1.2. This study examined the local private commercial banks situated in Kenya. These are banks whose controlling shareholders are domiciled in Kenya. Imperial Bank as well as Chase Bank were all in receivership, while Charterhouse Bank was on the other hand under statutory administration thus these were excluded from the tabulation presented below.

Table 1. 2: Commercial Banks’ Ownership and Asset Base (Kshs. Millions)

Bank Ownership	Number	% of total	Total net assets	% of total
Local Public Commercial Banks	2	5.1	27,224	0.6
Local Private Commercial Banks	20	51.3	3,064,544	63.7
Foreign Commercial Banks	17	43.6	1,717,643	35.7
Total	39	100.0	4,809,410	100.0

Source: Central Bank of Kenya (2019)

1.2 Statement of the Problem

Increased use of various financial instruments as well as availability of diverse bank services exposes the banking sector to financial risks. The risk management survey report

for the year 2011 indicated that 30% of the risks monitoring reports generated by the banking sector are on market risk. Market risk reports ranked lower than credit risk reports generated at 53% and operational risk reports generated at 42%. This is despite market risk being the most prevalent risk within the banks (Central Bank of Kenya, 2011). These risks end up ultimately affecting the banks performance. In 2017, as a result of interest rate volatility, Family bank and Standard chartered issued profit warnings a sign of poor performance. During the period 2015-2017, three Kenyan commercial banks i.e. Dubai bank, Chase bank as well as Imperial bank were put under receivership owing to liquidity and capital deficiency challenges among other reasons which exposed financial risk to depositors, creditors as well as the banking sector (Kenya Deposit Insurance Corporation, 2015; Central Bank of Kenya, 2016).

As banking industry embraces new technologies, the intensity and diversity of risks to which players are endangered grows in lockstep. Risk management is critical to ensure banking sector's development does not endanger its stability (Central Bank of Kenya, 2011). Kenya Bankers Association (2020) highlight that Banks' intermediation goals manage the profitability – liquidity trade-offs as they change their operational strategies in accordance with the current market climate. Financial risk management is one of the intermediation strategies undertaken by banks to reduce the banks' exposure to risk. A reduction in risk exposure enables the bank minimize on its operating costs. Efficiency metrics for instance cost-to-income ratio and profitability, among others, show the totality of financial results and banking industry changes over time and also in response to policy as well as competition dynamics. Profitability measured by ROE and ROA for the banks has been fluctuating in past years except from the year 2018 as indicated in table 1.1.

In 2019, the relationship between profitability and the banks' size as analysed by KBA Centre for Research and Financial Markets Policy found that large banks were profitable as compared to the small and medium ones and they revealed an advantage in term of return on capital. Central Bank of Kenya (2019) indicates that bank size is determined using composite weighted index consisting of the net assets, capital, customer deposits and reserves. In Kenya, Local Private Commercial banks own largest percentage of bank's net assets in the banking sector as highlighted in table 1.2. This study focussed on this section as it presents an ideal sample selection of the large, medium and small banks which have a high assets base and have their controlling shareholders domiciled in Kenya.

In Kenya, Kiio and Jagongo (2017) studied financial risk hedging practices and firms' performance, and found positive association between central bank regulations and firms' performance in NSE. Githaiga (2015) investigated whether CRM influences Kenyan commercial bank profitability and found that CRM had positive influence on commercial bank financial performance. Githinji *et al.* (2017) evaluated the effect of FRM on profitability of commercial banks' and found that all banks in Kenya engaged in financial risk management. Wamalwa and Mukanzi (2018) studied whether FRM practices influences commercial banks' profitability in Kakamega County in Kenya and found that credit risk as well as capital risk management strategies have positive impact on banks' financial results, while liquidity and IR risk management have inverse as well as insignificant influence on profitability of the banks.

The study by Wamalwa and Mukanzi (2018) focussed on commercial banks in Kakamega County, Kiio and Jagongo (2017) used causal survey research design to examine firms listed in NSE while Githinji *et al.* (2017) used secondary data collected from the various CBK Bank Supervision Annual Reports for the period between 2008 and 2012 to assess Commercial Banks in Kenya. Moreover, there is insufficient empirical evidence to assess

whether financial risk management has significant effect on profitability as an efficiency performance indicator which is seen to be fluctuating over past five years i.e. 2015 to 2019 yet profitability indicates the banks stability and growth. This informed the motivation of the study among the Local Private Kenyan Commercial Banks which represents the largest banking sector in terms of ownership and asset base as at end of 2019. Hence, the study sought to determine the effect of financial risk management on profitability.

1.3 Objectives of the Study

The study sought to achieve the following general and specific objectives.

1.3.1 General Objective

To evaluate the effect of financial risk management on profitability of local private commercial banks in Kenya.

1.3.2 Specific Objectives

Specific objectives were:

- i. To determine the effect of credit risk management on profitability of local private commercial banks in Kenya.
- ii. To assess the effect of liquidity risk management on profitability of local private commercial banks in Kenya.
- iii. To evaluate the effect of interest rate risk management on profitability of local private commercial banks in Kenya.
- iv. To determine the effect of foreign exchange risk management on profitability of local private commercial banks in Kenya.

1.4 Research Hypotheses

The study tested the following null hypotheses:

H₀₁: Credit risk management does not have a significant effect on profitability of local private commercial banks in Kenya.

H₀₂: Liquidity risk management does not have a significant effect on profitability of local private commercial banks in Kenya.

H₀₃: Interest rate risk management does not have a significant effect on profitability of local private commercial banks in Kenya.

H₀₄: Foreign exchange risk management does not have a significant effect on profitability of local private commercial banks in Kenya.

1.5 Significance of Study

This research has provided essential information and statistics that will assist the government in policy formulation with regards to risk management. During the period under review, Dubai, Chase and Imperial bank were put under receivership owing to issues relating to financial risks. This highlights that risk management is an essential element in banking sector and failure to observe it, results to adverse effects both to the economy, the government and the depositors at large.

The government through regulating body (CBK) plays a role in ensuring that public utilities are well protected thus the study has shed more light on risk management measures and banks profitability thus help the government understand the areas that are under served in terms of risk controls. The current risk management guidelines in use were last reviewed in 2013. Several developments have taken place since then widening the risk management framework. The study will provide useful information beneficial in development of specific strategies that will promote risk management from a more targeted sector and

challenge approach. This information can be considered for updating the existing risk management guidelines.

The study will also assist bank managers who are the policy makers in the banks to acquire knowledge on financial risk management. This will help them in decision making with regards to risk management strategies to be undertaken and also highlights the effect of the strategies undertaken to their institutions. The knowledge acquired will also promote performance monitoring from a knowledgeable position and give insight on how to handle challenges arising from financial risks faced by the institutions. Academicians as well as researchers will also benefit as the study results can be used to expand their knowledge on risk management and local private commercial banks' profitability. Moreover, this research will also be helpful for review of literature and has also recommended other areas of study within the study topic.

1.6 Scope of the Study

The study assessed influence of FRM on local private commercial banks' profitability in Kenya for five years (2015 and 2019). The study focussed on the 20 local private Kenyan commercial banks during the duration of research as highlighted in table 1.2. This selection comprised of the largest sector of Kenyan commercial banks and has largest net asset base in the commercial banking sector. Data was collected to establish how measures undertaken by local private commercial banks in hedging against credit, liquidity, interest rate as well as foreign exchange risks influence profitability of the banks. Primary data was obtained from questionnaires, while secondary data from bank publications and surveys.

1.7 Organization of the study

The first chapter presents the study background, problem statement, study objectives, justification, hypotheses, scope and finally organization of the project. Chapter two

presents the empirical and theoretical review and the conceptual framework. Modern Portfolio Theory, Agency Theory and Managerial Efficiency Theory formed the theoretical foundation. Moreover, empirical review highlighted documented evidence in relation to FRM and commercial banks' profitability. The Conceptual framework shows hypothesized association between study variables. Chapter three documents research methodology adopted. It states and justifies the research approach, sampling approach, sample size, data processing and data analysis. Fourth chapter encompasses data analysis as well as interpretation of research results. Lastly, chapter five contains the summary of study findings and conclusion made. It also comprises the recommendations, the study contribution to existing knowledge, and suggestions for more studies.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This section sets out summary of related literature pertaining to research topic. It is organized in three sections i.e. theoretical framework; empirical review which highlights the previous studies done on financial risk management and profitability of banks as well as capturing research gaps from such studies. Lastly, the chapter covers conceptual framework which introduces variables in study topic.

2.2 Theoretical Review

This section comprises theories in relation to FRM and profitability; their arguments and relevance in the study. The study is supported by modern portfolio theory, agency theory, and managerial efficiency theory of profit.

2.2.1 Modern Portfolio Theory

In 1952, Harry Markowitz founded the above theory. It is a process of investment selection as well as growth of investment portfolios focused on maximizing portfolio's anticipated return while minimizing investment risk at the same time. The theory is based on two major concepts i.e. minimizing risk and maximizing returns. The aim of any investor is to increase return for any degree of risk. Risk can be minimized by diversifying portfolios of unconnected risks. Investors will hold on a risky investment only if the anticipated return is high so as to compensate investors for taking the risk (Ramos, 2000).

The most significant feature of Markowitz' model, according to Megginson (1996), is the number of securities within a portfolio as well as their covariance associations. Modern Portfolio Theory tries to figure out how diverse investments interact. It quantifies diversification influence on portfolio results using statistical methods such as correlation.

Markowitz (1952) uses efficient frontier to describe the association between expected portfolio returns and portfolio riskiness/volatility. This is depicted as a curve in a graphic form. The optimal portfolios plotted along the curve reflect the maximum possible anticipated return from an investment for a given risk level (McClure, 2010). Portfolios that are located on the Efficient Frontier provide the best balance of anticipated return and investment risk.

Markowitz (1952) built his portfolio selection contributions to Modern Portfolio selection based on the following key assumptions on the investors and the market. Investors are rational in the sense that they want to maximize profits while minimizing risk; Investors are kept informed at all times on all pertinent issues relating to their investment decisions and investors can lend or borrow a limitless amount of money. Markowitz believed that markets are perfectly efficient and it is likely to pick securities whose performance is independent of the performance of other portfolio investments.

Banking industry is involved in wide range of activities in order to attain their objectives as well as keep the institutions financially stable. Banks main source of revenue is the deposits and loan operations whereby banks earn interest income. However, banks also hold marketable securities and foreign currencies for trading purposes among other activities. In this study, Modern Portfolio theory showed the relationship between risk and return through the bank's decision making process whereby various bank transaction were assessed based on certain parameters to inform the risk exposure and anticipated return before a decision on the transaction is made. This helped in risk management which ultimately had an impact on banks' profitability.

2.2.2 Agency Theory

Barry as well as Stephen Ross (Mitnick, 2011) developed the above theory. The theory is concerned with evaluating and resolving issues that arise in association between agents or top management and their principals (owners or shareholders) according to Eisenhardt (1989). The theory is founded on idea that the organization's function is to maximize wealth of its owners or shareholders (Blair, 1995). When managers gain a direct or indirect financial benefit at the cost of maximizing shareholder capital, this is known as an agency problem (Bancit *et al*, 2013). Conflicting interests among managers and owners, as well as asymmetric knowledge, contribute to this (Chrisman, 2004). According to Eisenhardt (1989), the agency theory's key contribution is that it identifies how to handle knowledge and also risk in the operation of a company.

Primary agency relationship influences the attitude of management on risk taking and risk management options (Smith & Stulz, 1985). Managers have a preference of avoiding risky project with an aim of minimizing inconsistency of the returns. On the other hand, owners employ risk management to ensure congruence of their goals and the goals of the managers (Livia & Sardar, 2007). Managers will not act to optimize shareholder returns unless adequate governance mechanisms are in place to protect shareholders' interests, according to Donaldson and Davis (1991). Aaker (1987) contradicts Donald's argument by indicating that risk should be expressly included in strategic investment decisions, and it is the decision makers' responsibility to expect a high return for a high investment risk.

Fielder (2002) and Jensen (1976) contend that despite the banking industry having regulations on governance of risk, the degree of oversight or leverage available can influence risk preferences. Crutchley and Hansen (1989) described rising managerial stock ownership, increasing dividends, and increasing leverage as some of the strategies for lowering the principal-agent agency expense. This theory was essential as it highlighted

how risk appetites represented by managers and the shareholders' influence the decisions made on the various financial risk management measures put in place in the Commercial banks.

2.2.3 Managerial Efficiency Theory

The theory was founded in 1973 by Demsetz. The theory proposes that better management as well as scale efficiency leads to higher profits. It emphasizes that management performance not only boosts earnings, but also raises market share and reduces concentration of the market (Athanasoglou, Brissimis and Deli, 2005). According to this theory, a high positive profitability ratio indicates positive association between organization's productivity and scale. It states that positive correlation between profitability and size of the firm arises from lower operational costs which are mainly achieved through efficient operational and managerial processes.

In banking industry, managerial efficiency theory states that large commercial banks with management that is stronger as well as more experienced and modern technology will lower their cost of operation and gain a higher return on investment compared to smaller banks. Moreover, the theory is centred on idea that banks usually gets more profits when they are efficient compared to their rivals as the efficiency leads to lower operational costs (Onuonga, 2014). Internal efficiencies of the banks influence bank's profitability (Obamuyi, 2013). When there is significant positive association between firm profitability and market share, efficiency hypothesis wins out. The opportunity to gain above-average profits by practicing high-quality management skills is a constant catalyst for greater efficiency in any economic system (Mensi and Zouari, 2010).

According to managerial productivity theory, higher profit margins are the result of efficiency that enables banks to achieve good financial results as well as market share

(Mirzaei, 2012). Profitability and high concentration, according to Fisseha (2015) are products of effective cost-cutting practices as well as better management techniques around an enterprise. Financial risk management refer to a management function that assists in reducing operational costs that could arise through loss from the risk exposure. This theory helped support the study through analysing how the various risk management strategies undertaken by local private commercial banks affect banks cost element which eventually has an effect on the banks profitability position.

2.3 Empirical Review

This section review empirical evidence on financial risk management and profitability from various contexts.

2.3.1 Credit Risk Management and Profitability

Jorion *et al.* (1996) investigated CRM and commercial banks' profitability in Sweden. Moreover, CRM influences profitability, according to the report. The findings also revealed that effect of CRM on firm profitability differed between four commercial banks studied. The research determined the connection between CRM and bank profitability. A research on impact of the same focusing on Kenyan banks would be necessary to determine if the results would be the same or there will be a variance.

Kithinji (2010) examined CRM and Kenyan commercial banks' profitability. The researcher assessed whether there was connection between CRM and commercial banks' profitability. The researcher found that commercial bank profits are unaffected by credit and NPLs, implying that profits are normally impacted by other factors apart from NPLs and credit. Banks face a wide variety of risks that might influence profitability. The study focus was on credit risk management alone. A research on other risk management

measures would be ideal in guiding the banks on the measures that are helpful in improving their profitability.

In Kenya, Githaiga (2015) investigated whether CRM influences commercial banks' profitability. The research discovered that by use of CAMEL (Capital adequacy, Earning, Asset Growth, Management as well as Liquidity) indicators, CRM has strong influence on Kenyan commercial banks' performance. It also emphasized that credit risk has negative correlation with performance. The study focused on CRM alone but ignored other risk management measures. Additionally, the study used the CAMEL indicators to measure financial performance as opposed to the financial ratios i.e. ROA and ROE which are the key performance indicators for banks.

2.3.2 Liquidity Risk Management and Profitability

Mwangi (2014) analysed the influence of liquidity risk management on performance of commercial banks' in Kenya. For forty three commercial banks which were in service from 2010 to 2013, the report used descriptive study design. Additionally, the study used ROA to measure the banks' performance. He discovered that LRM has strong inverse influence on bank's profitability. The research timeline was short and the researcher only handled one type of risk management while banks face various risks which might also influence their performance.

Laminfoday (2018) studied the influence of liquidity risk management on commercial banks performance in Sierra Leone between 2013 and 2017. Moreover, the research aimed at examining whether management of liquidity risk influences commercial banks' financial returns. Findings established negative significant correlation between liquidity risk management and banks' financial returns. It would be good to evaluate effect of LRM on Kenyan Commercial banks.

2.3.3 Interest Rate Risk Management and Profitability

Gitonga (2010) assessed the nexus between IR risk management and commercial banks profitability. This study evaluated the nexus between management of IR risk and banks' profitability. The study discovered that management of IR risk as well as net interest income, and thus commercial bank earnings, have a close direct relationship. This finding informed the recommendation of pursuing appropriate interest rate risk management which will reduce banks' possible risk and also provide a way for banks' earnings to be stabilized and improved leading to improved profits. The study used one variable while assessing the independent variable. There are a number of strategies employed to manage risk on interest rate given that banks' exposure to the risk is vast, use of more than one variable would be ideal.

Ngare and Ngalawa (2014) studied the interest rate (IR) management for Kenyan commercial banks with an objective of undertaking quantitative evaluation of IR risk encountered by commercial banks and investigating the techniques used for measuring and managing risk on IR by the commercial banks. Moreover, the study established that commercial banks have significant exposure to interest rates, which can be forecasted by income difference, and a change in income occurs as interest rates increase because most of the commercial banks are asset sensitive. The study however did not report on the findings relating to the techniques used for measuring and managing IR risk.

2.3.4 Foreign Exchange Risk Management and Profitability

Kiptisya (2017) analyzed whether FOREX risk management influenced Kenyan commercial banks profitability. The research aim was to identify various techniques of managing foreign exchange risk and the techniques employed by Kenyan commercial banks to forecast forex risk and its impact on techniques. The study focused on Stanbic bank in Kenya. Cross currency swaps, options, and price changes are among the most

commonly used hedging strategies, according to the results and forex risk has an effect on ROA and ROE thus the use of hedging techniques gave the bank a competitive advantage. The study was conducted on a small sample size i.e. one bank out of the current existing 42 banks. Since banks activities and sizes vary, the results cannot be translated to be representative of all the commercial banks thus need to assess nexus between FOREX risk management and larger sample size in banking sector.

Juma (2018) investigated Financial Risk Analysis and Kenyan Commercial Banks' profitability. The researcher discovered that liquidity risk and IR rate has positive effect on Kenyan commercial banks' performance whilst credit risk as well as exchange rate risk had inverse impact. This means that banks will experience improved financial performance if liquidity risk and IR risk are well managed. Exchange risk and credit risk on the other hand have adverse effects on banks income and profitability. The study assessed commercial banks performance in terms of ROA only. There's need to measure banks' performance in particular profitability using both ROA and ROE.

2.4 Summary of Related Literature and Research Gaps

Numerous researches have been done to examine whether financial risk management influences profitability. It is evident that there are various risk management practices for instance CRM, LRM, IR risk management as well as FOREX risk management that are pursued by institutions and these practices have varying effects on the financial performances of the various institutions. Liquidity, productivity, and profitability are all metrics employed to evaluate financial performance. These can be measured using different methods which include financial ratios such as ROA, ROE, risk adjusted ROC return on capital and efficiency ratio among others.

However, due to the range of factors highlighted in table 2.1 under research gaps i.e. non-representative sample size, limited time duration, inappropriate measurement parameters and the range of study, there is still a gap that exists in addressing the effect of financial risk management on profitability with particular reference to profitability of local private Kenyan Commercial Banks hence the researcher sought to fill some of the gaps identified below.

Table 2.1: Empirical Review

Authors	Objectives	Results	Research Gaps	How this Study Filled the gaps
Jorion P <i>et.al</i> (1996)	To determine whether credit risk management influences profitability in Swedish commercial banks	Profitability is affected by credit risk management but impact of credit risk management is different for different institutions	Banks face a variety of risks. The study focussed on only one financial risk management measure	This study focussed on Kenyan banks and analysed more financial risk management measures.
Kithinji (2010)	To determine connection between CRM and Kenyan commercial banks' profitability	commercial bank returns are unaffected by NPLs and credit implying that profits are influenced by other factors apart from NPLs and credit	The study focused on credit risk management alone but ignored other risk management measures.	This study highlighted three additional risk management measures utilized by the banks and analysed their impact on the banks profitability.
Githaiga	To determine the	CRM influences	The research	This study explored other

(2015)	impact of CRM on Kenyan commercial banks' financial performance.	profitability of Kenyan commercial banks significantly.	examined the credit risk management alone but ignored other risk management measures. It also assessed financial performance in general and not a specific financial performance indicator	risk management measures and specifically assessed profitability as a performance indicator using ROA and ROE financial ratios.
Mwangi (2014)	To evaluate impact of liquidity risk management on Kenyan commercial banks' financial results	Liquidity risk management has a negative correlation with a bank's overall performance.	The research timeline was short and the researcher only handled one type of risk management while banks face various risks which might also influence their performance	This study covered a 5 year time period and analysed the effect of more than one risk management control undertaken by the banks

Laminfoday (2018)	To determine the association between liquidity risk management and banks' financial returns in Sierra Leone	There is significant inverse association between management of liquidity risk and banks' financial returns	The research was for commercial banks situated in Sierra Leone	This study focused on Kenyan commercial banks and highlighted the impact of liquidity risk management across a related banking sector.
Gitonga (2010)	To assess the association between interest rate risk management and profitability.	The study discovered that interest rate risk management and net interest income, and thus commercial bank earnings, have a close direct relationship.	The study used one variable while assessing the independent variable	This study assessed a number of variables since the vast risk exposure has led to invention of more strategies on interest rate risk management
Ngalawa and Ngare (2014)	To conduct a comprehensive evaluation of the IR risk that commercial banks face, and to examine methods deployed by commercial banks	Commercial banks have significant exposure to interest rates, which can be forecasted by income difference, and a change in income occurs as interest rates increase. since most of the commercial banks are	The study did not report on the findings on the techniques used for managing and measuring IR risk.	This study reported on the IR risk management approaches and effect they have on profitability of commercial banks.

	to cope with IR risk.	asset sensitive		
Kiptisya (2017)	To describe the various techniques of managing foreign exchange risk employed by commercial banks and how to handle impact of forex risk on Stanbic Bank's profitability.	Cross currency swaps, options, and price changes are all popular hedging strategies and forex risk has an effect on ROA and ROE thus the use of hedging techniques gave the bank a competitive advantage.	The study was conducted on a small sample size i.e. one bank out of the current existing 42 banks	This study covered a larger sample size i.e. 20 banks for better representation.
Juma (2018)	To find out how credit risk, liquidity risk, interest rate risk as well as foreign exchange risk affect Kenyan commercial bank performance.	Liquidity risk and interest rate have positive significant influence on of commercial banks' performance while credit risk as well as exchange rate risk influences performance of Kenyan commercial bank in negatively	The researcher assessed commercial banks' performance based on ROA	This study measured the banks' performance in particular, profitability using both ROA and ROE which are measures that compare benefit accessible to stakeholders to resources held by various shareholders.

Source: Various literature reviewed, 2020

2.5 Conceptual Framework

This section explains the variables that were involved in the study. Mugenda (2008) defined variable as quantifiable feature that adopts diverse values amid units of specific population. Dependent variable in this study was profitability of Commercial Banks which was examined using ROA and ROE. While the independent variables included financial risk management practices i.e. IR risk management; LRM, CRM, and foreign exchange risk management.

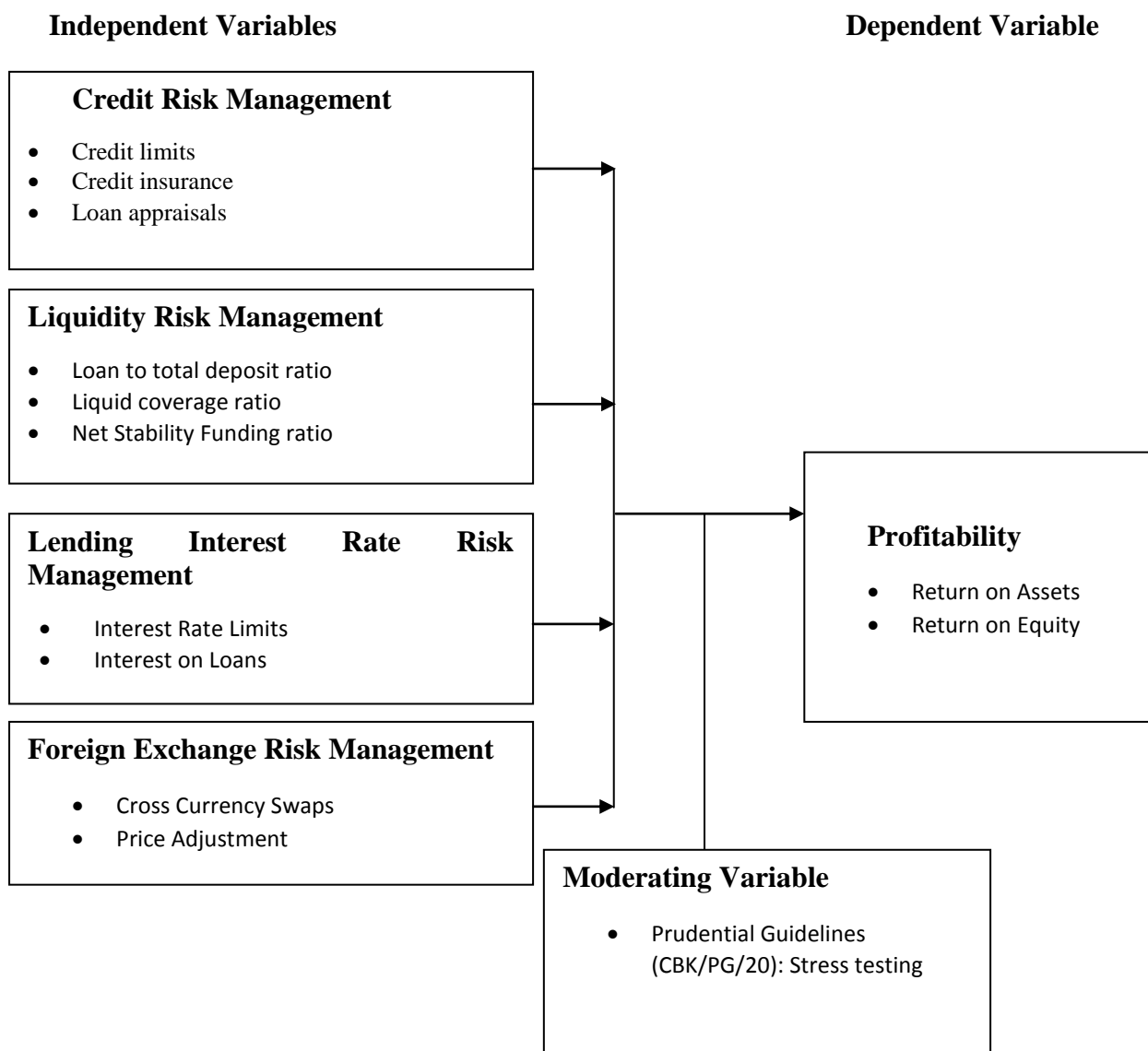


Figure 2.1 Conceptual Framework

Source: researcher, 2022

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This section explains methodology deployed in actual field work. It highlights research approach; study population, sampling design i.e. sample size and sampling procedure that was employed, tools for collecting data, data analysis as well as presentation and ethical considerations relating to the study.

3.2 Research Design

Research design refers to schematic process that the researcher follows from data collection, measurement of variable, analysis as well as presentation (Cooper & Schindler, 2014). Descriptive research approach was deployed in this study. Stemler (2004) suggest that descriptive research design refers to a systematic, observational investigation in which the researcher has no influence over the independent study variables since they have manifested. Descriptive research approach was suitable since it allowed for in-depth evaluation of financial risk management without bias in data collection and highlighted the association between FRM and the local private commercial banks' profitability. Descriptive research design was adopted because it allows for combination of both the quantitative research approaches and qualitative research approaches.

3.3 Target Population

This is a subsection of wide population with similar features which comprises all components categorized as objects or individuals (Buchanan & Bryman, 2009). The target population was 20 local private commercial banks as at 2019. The selected target population is the largest in the commercial banking sector in Kenya and has the largest net asset base in the commercial banking sector as highlighted in Table 1.2.

3.4 Sampling Design

Sampling is a detailed strategy for selecting representative sample from the target population. Moreover, it highlights technique that the researcher will adopt in choosing the items that will be included in a study and should be reliable and appropriate (Kothari, 2004). Census research design was employed for the research where all 20 local private commercial banks (considered as part of the study) were analysed. When the study population is not big and components are somewhat diverse from one another, a census analysis is feasible (Cooper & Schindler, 2006).

Three managers involved in risk management as their day to day duties in each of the local private commercial banks from the head office branches were engaged to help in filling the questionnaires. The sample size was 60 managers (i.e. three managers involved in risk management in each bank multiplied by the 20 banks included in the study). The 60 managers were selected using purposive sampling approach. This is a sampling approach whereby items included in the sample are deliberately selected by the researcher. It is ideal for small enquiries and researches due to the relative advantage of time and resources required (Stemler, 2004).

3.5 Data Collection Instrument

This research deployed information from primary and also secondary data. Moreover, primary data was gathered by employing questionnaires. Questionnaires are appropriate in primary data collection as they can be used to collect information that cannot be directly observable (Mugenda & Mugenda, 2003). Secondary data was collected from commercial banks' yearly integrated reports and central banks annual reports for duration 2015-2019 which are published annually as per the requirements of CBK. According to Mugenda and Mugenda (2003) data readily available and which has been collected in the past by other individual(s) rather than the researcher is referred to as secondary data. This data is

suitable as it is readily available and efficient when factoring monetary and time constraints.

The annual integrated reports published by the Commercial banks was used since, apart from highlighting the banks' financial performance, the reports also provided voluntary disclosures on risks encountered by the banks and the risks management measures undertaken. Information not disclosed in the reports but deemed important for the study was obtained using questionnaires.

3.5.1 Validity of Research Instrument

To establish questionnaires' validity, an opinion from a risk expert in banking sector was sought to affirm clarity of items included in the research tool. Moreover, a pre-test of the questionnaire was considered using a randomly selected bank to validate the questionnaire and help with familiarization of the administration procedure. The ambiguity noted during the pre-test was corrected with guidance from the project supervisor before the actual collection of data was undertaken.

3.5.2 Reliability of Research Instrument

Reliability¹ is normally involved with uniformity of feedback obtained from respondents. The researcher used Cronbach's alpha methodology to examine data reliability. Moreover, this measure is used to determine the internal consistency of information. Stemler (2004) recommended that acceptable Cronbach's alpha value is 0.6. Reliability is based on analysis of the questionnaires administered to the respondents. Secondary data was collected from credible sources i.e. official commercial banks' websites thus the information was obtained from a trustworthy source.

3.6 Data Collection Procedure

Primary data was obtained from managers involved in financial risk management within the respective banks using the questionnaires. Some of the questionnaires were physically dropped to managers in their respective branches and collected once they were fully filled. An online option was also considered whereby the managers filled the questionnaires through google forms and submitted the same online. Secondary data was obtained by reviewing commercial as well as central banks financial reports which are published annually. This data was collected after presenting an official letter from the university authenticating that permission has been granted to carry out the study with the commercial banks. In addition to the university letter, the NACOSTI permit was also presented to demonstrate approval of the research before data collection.

3.7 Data Analysis and Presentation

This research deployed descriptive statistics so as to analyse data collected. Juma (2018) highlights that by the use of a few indexes or statistics, descriptive statistics allows researcher to acquire summary of the study's scores and also measurements. Descriptive statistics (percentage frequencies, measures of central tendency, mean and also standard deviation) as well as multiple regression analysis were employed to analyze data. Multiple linear regression models were deployed to study the association between dependant variable and two or more independent study variables (Greene, 2003).

The multiple regression equation applied for the study is:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \epsilon$$

Where:

Y = Profitability

X_1 = Credit risk management

X_2 =Liquidity risk management

X_3 =Interest rate risk management

X_4 =Foreign exchange risk management

$\beta_1, \beta_2, \beta_3$ and β_4 are coefficients and

ε represents error term

The data was then analysed via SPSS and findings displayed using tables as well as charts.

3.8 Ethical Consideration

Authorization to conduct the research was requested from commercial banks and the nature as well as aim of the research explained to all participants who were involved. The study endeavoured to respect the rights of the respondents so as to safeguard their personal integrity. Additionally, assurance of confidentiality and anonymity was given to the respondents. The respondents' personal information was not reflected on questionnaire. The questionnaires were numbered to facilitate data identification during analysis. Upon completion of the study, the results will be availed to the relevant authorities and to those participants who are interested in knowing the results.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

This chapter presents the findings of the study, interpretation of results in view of the specific objectives, discussion of the findings with other studies and summary of the key findings. The results are presented in tables, pie charts and frequency tables and their implications explained. Descriptive statistics, Pearson correlation and multiple linear regression analysis were used to analyze the data. Data interpretation was done in line with the research objectives.

4.2 Response Rate

The study's sample size was 60 managers in 20 local private commercial banks operating in Kenya. Sixty questionnaires to managers in banks listed in appendix IV. The findings are as shown in Table 4.1

Table 4.1: Response Rate

Managers	Questionnaires distributed	Questionnaires returned	Response rate %
Risk/audit/compliance managers	20	19	95.00
Operations/Credit managers	20	19	95.00
Customer support/Marketing managers	20	20	100.00
Total	60	58	96.67

Out of 60 questionnaires, 58 of them were filled and also returned hence providing 96.67% response rate. Kothari (2004) suggests that 60% and above response rate is acceptable for purposes of analysis. In addition, Greener (2003) shows that 75 per cent response rate is sufficient for analysis of data. This denotes that 96.67% response rate was sufficient for

data analysis.

4.3 Respondents' Demographic Information

Respondents' demographic information entailed duration of working in the institution, current job position and critical function of financial risk management.

4.3.1 Duration of Working in the Organization

As part of general information, the participants were required to point out the duration in which they had been working in the institutions. Results were displayed in Figure 4.1.

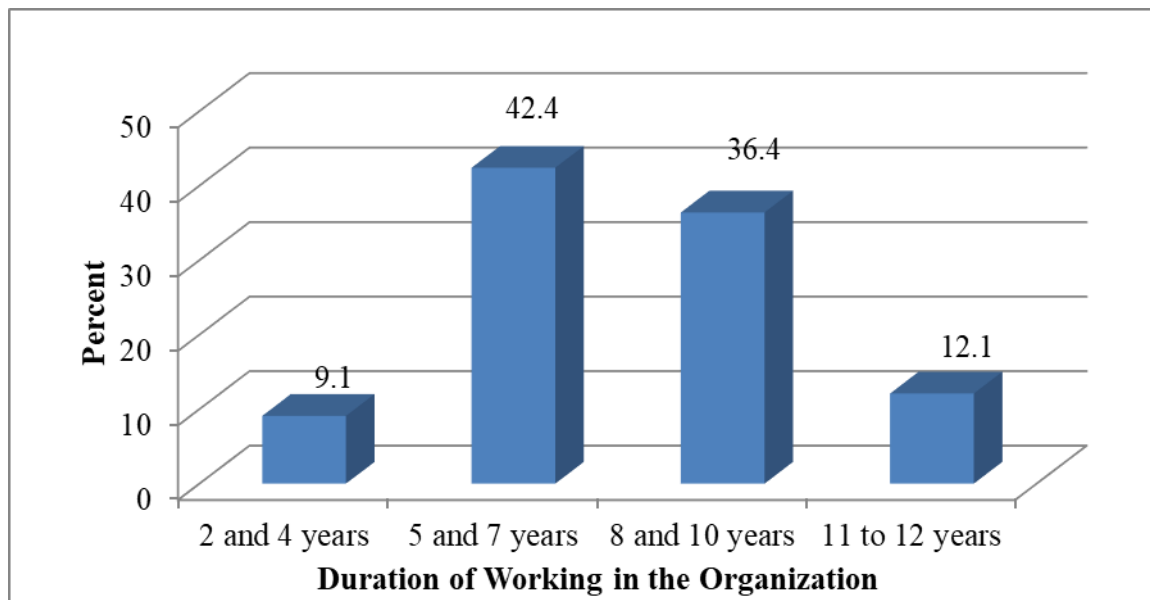


Figure 4. 1: Duration of Working in the Organization

From the findings, 42.4 percent of the participants specified that they have been working in the organization for between 5 and 7 years, 36.4% pointed out for between 8 and 10 years, 12.1% specified for between 11 and 12 years and 9.1% specified for between 2 and 4 years. This means large numbers of managers in the local private commercial banks sampled have more than 5 years work experience. The vast experience equipped the respondents to

provide adequate information to this study on financial risk management and profitability of the banks.

4.3.2 Designation alignment

Respondents were also requested to state their job alignment in the institution. Results obtained were displayed in Figure 4.2.

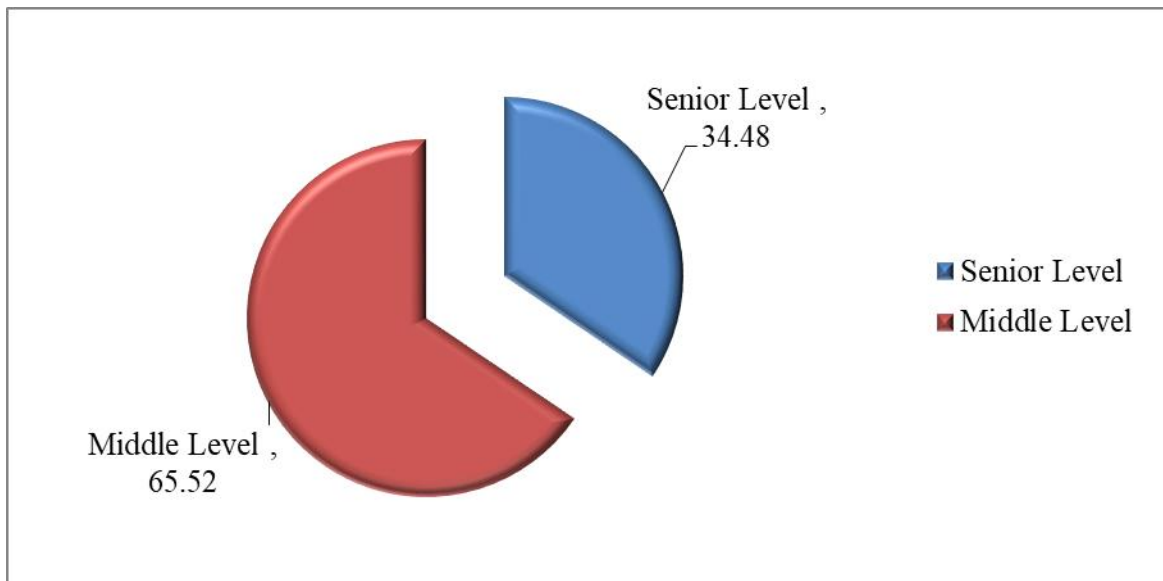


Figure 4.2: Designation Alignment

Results revealed that 65.52% of the respondents specified that they were middle level managers and 34.48% were senior level managers. This denotes that respondents were both middle level managers and senior level managers. Therefore, the respondents who are responsible with the management of the local private commercial banks played a major role by providing necessary information on FRM and profitability of their banks.

4.3.3 Financial Risk Management

Respondents were also required to specify the degree to which FRM is a critical function of the institution. The results were as shown in Figure 4.3.

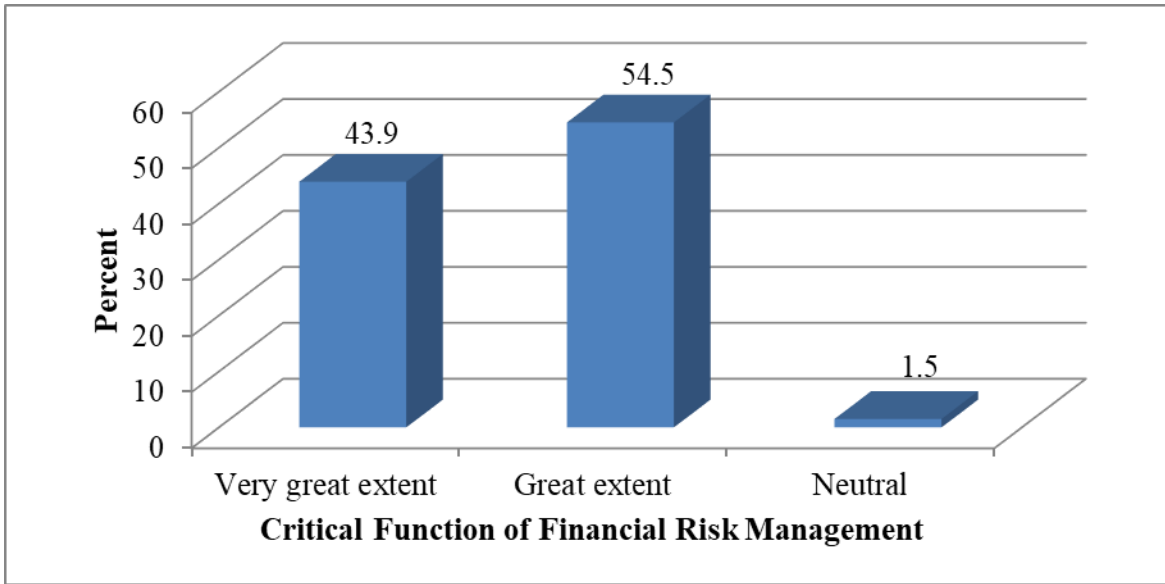


Figure 4.3: Critical Function of Financial Risk Management

As shown in Figure 4.3, 54.5% of the respondents revealed that FRM is a critical function of the bank to great extent, 43.9% specified to very great extent and 1.5% specified to neutral extent. Moreover, this means that FRM is a critical role of the banks to great extent. With a large percentage acknowledging that the FRM is a critical function in their banks, the information from the study is of significance to influence the banks to develop proper Financial Risk Management strategies to mitigate any possible negative impact on the bank's financial results.

4.3.4 Financial Risk Management System

The respondents were as well requested to point out whether they consider their bank's financial risk management system to be efficient and effective. The results were as shown in Figure 4.4.

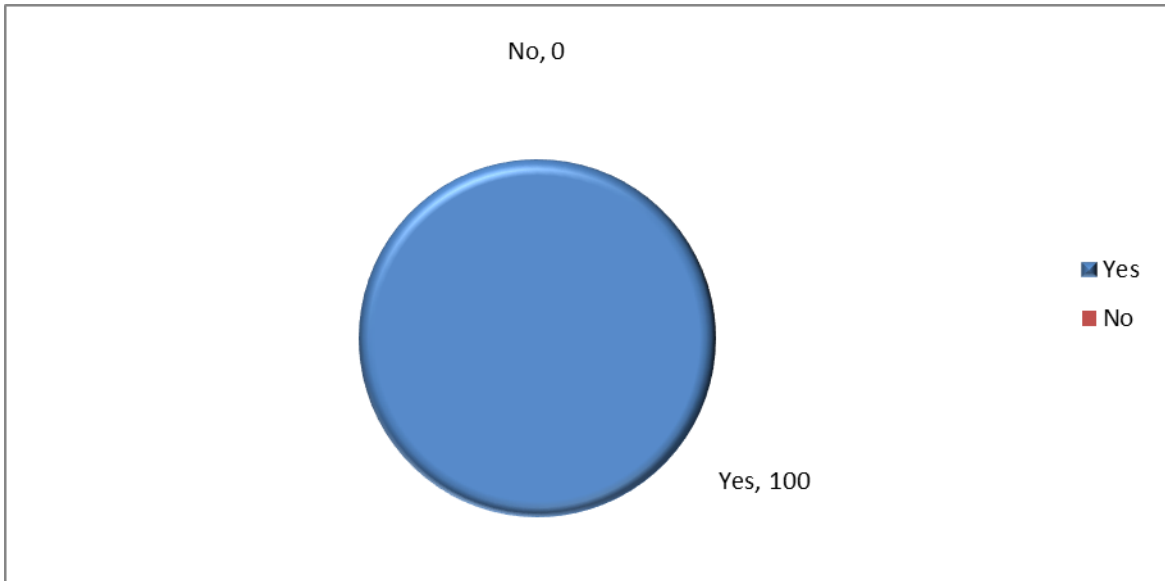


Figure 4. 4: Financial Risk Management System

Results revealed that 100% of the respondents specified that they consider their bank’s financial risk management system to be efficient and effective. This implies that the financial risk management system of all the selected local private commercial banks in Kenya is efficient and effective. The information provides essential information to the investors, shareholders and the customers on the banks’ capability to mitigate risks and generate profit.

4.3.5 Efficiency and Effectiveness of Financial Risk Management System

The respondents who indicated that bank’s FRM system is efficient and effective were requested to explain their responses. The respondents revealed that the financial risk management has helped the bank to reduce the possibility of losing money on investments as well as ensure liquidity and smooth running of all operations. Modern technology has been incorporated to help in enhancing the financial risk management systems. Moreover, the respondents indicated that the investors’ confidence to put in funds within the banking institution is a clear indication that the risk management system is effective to a great extent. Financial risk management has also helped the banks to monitor the business hence

avoid financial loss as well as reduce the number of nonperforming loans. Moreover, the respondents revealed that the banks have put definite measures to ensure no loose ends when it comes to financial risks management.

4.4 Descriptive Statistics

This section covers descriptive statistics in relation to CRM, LRM, IR risk management, FOREX risk management and profitability of local private Commercial Banks.

4.4.1 Credit Risk Management

The first study's objective was to evaluate effect of CRM on local private Commercial Banks' profitability.

4.4.1.1 Aspects of Credit Risk Management

Respondents were requested to rate their agreement level on statements relating to effect of credit risk management on profitability of their banks. Results were as shown in Table 4.2.

Table 4. 2: Aspects of Credit Risk Management

	1	2	3	4	5	Mean	Std. Deviation
Our bank has maximum amount of credit that is extended to borrowers	0.00	1.5	12.1	65.2	21.2	4.061	0.630
All borrowers have different credit limits depending on their financial transactions	0.00	0.00	0.00	62.1	37.9	4.379	0.489
Our bank carefully analyses the credit worthiness of its customers before extending loans to them	0.00	0.00	0.00	62.1	37.9	4.379	0.489
Our bank has a credit insurance policy	0.00	0.00	3.0	68.2	28.8	4.258	0.506
In case of any default on loan repayment the credit insurance company caters for the loss	0.00	0.00	6.1	66.7	27.3	4.212	0.541
The credit insurance limits are reviewed frequently depending on default rates.	0.00	1.5	3.0	77.3	18.2	4.121	0.512
Before granting loan facilities to customers, bank tries to establish the market value of collaterals used	0.00	1.5	1.5	59.1	37.9	4.333	0.591

Market value of collaterals used determines the amount of loan limit to be extended	0.00	3.0	0.00	48.5	48.5	4.424	0.658
Our bank gives loan amount which is slightly lower than the market value of the collaterals used	0.00	4.5	1.5	60.6	33.3	4.227	0.697

The respondents agreed that banks carefully analyse the credit worthiness of their customers before extending loans to them (mean=4.379, SD=0.489). These findings conform to Kiptisya (2017) discoveries that assessing the credit worthiness of its customers help the bank to lower the default rate. In addition, they agreed that all borrowers have different credit limits depending on their financial transactions. This is shown by mean of 4.379 (SD=0.489). These findings assists in understanding the importance of credit limit in increasing the borrower's overall credit score and giving them access to more and cheaper credit. Moreover, the respondents agreed that banks have a maximum amount of credit that is extended to borrowers as shown by a mean of 4.061 (SD=0.630).

As shown by mean of 4.258 (SD=0.506), respondents agreed that banks have credit insurance policies. The credit Insurance policies play a key role in illustrating their importance in protecting the bank business if a customer does not pay, or goes bust. Moreover, the respondents agreed that in case of any default on loan repayment, the credit insurance company caters for the loss. This is shown by mean of 4.212 (SD=0.541). The results conform to Bancit *et al.* (2013) findings that credit insurance policies ensure quick compensation in the event of a bad debt. Furthermore, the respondents agreed by mean of 4.121 (SD=0.512) that credit insurance limits are reviewed frequently depending on default rates.

The respondents agreed by mean of 4.424 (SD=0.658) that market worth of collaterals used determines the amount of loan limit to be extended. With mean of 4.333 (SD=0.591), they also agreed that before granting loan facilities to customers, banks try to establish the

market value of collaterals used. The respondents also agreed that their banks give a loan amount which is slightly lower than the market value of the collaterals used as shown by mean of 4.227 (SD=0.697). The findings concur with Kithinji (2010) findings that the loan given to a borrower should be slightly lower than the market value of collaterals used so that in case the borrower defaults the loan, the lender can seize the collateral and sell it to recoup its losses.

4.4.1.2 State of Credit Risk Management in the Banks

The respondents were required to describe the state of CRM in their banks. They indicated that their banks have set a maximum amount of credit that should be given to borrowers depending on their financial transactions. In addition, the respondents revealed that the banks carefully analyse the potential of their clients to pay back the loans before extending loans to them thus reducing the risk of repayment defaults. The banks also engage in in-depth discussions with their clients in order to understand the customers' needs/ the market in which the customers operate in and as a result ensure they mitigate all forms of risks associated with the business. Moreover, the respondents revealed that their banks have credit insurance policies to ensure that quick compensation in the event of any bad debt. This enhances the banks general performance.

In addition, the banks reviews credit insurance limits from time to time depending on the default rates reported. Furthermore, the respondents revealed that the banks use collateral to help in reducing customers default rates as customers know that in case of default the collateral will be taken over by the bank. These findings concur with Athanasoglou, Brissimis and Deli (2005) discoveries that collateral minimizes the risk for the banks since in case the borrower defaults on the loan, banks can seize the collateral and sell it to recoup their losses.

Moreover, the banks ensure that the collateral is legal to avoid loss of funds. Before granting loan facilities to customers, the banks seek to establish market worth of the collaterals used and based on value obtained, banks issue loan amounts which are slightly lower than the market value of the collaterals used. Furthermore, the respondents indicated that the banks have incorporated modern technology to help in proper credit risk management. These findings conform to Githaiga (2015) findings that technology aid in faster detecting as well as resolving credit issues and minimize compliance.

4.4.2 Liquidity Risk Management

Second objective was to examine effect of LRM on profitability of local private Commercial Banks operating.

4.4.2.1 Aspects of Liquidity Risk Management

Respondents were also required to specify agreement level in relation to numerous statements pertaining to influence of LRM on profitability of their banks. Results obtained were as shown in Table 4.3

Table 4.3: Aspects of Liquidity Risk Management

	1	2	3	4	5	Mean	Std.1 Deviation
Our bank relies on its deposits in order to give loans to customers.	0.00	7.6	13.6	59.1	19.7	3.909	0.799
Sometimes the bank is forced to borrow money and re-loan it to its customers due to low amounts of deposits	0.00	3.0	9.1	66.7	21.2	4.061	0.653
The interest rate of re-loaned money is slightly higher that loans from the bank's own deposits	0.00	6.1	3.0	69.7	21.2	4.061	0.699
Our bank always maintains liquid asset capable of funding cash outflow for at least 30 days	0.00	1.5	15.2	50.0	33.3	4.152	0.728
Our bank always preserves enough capital to enable it to overcome any short-term financial challenges	0.00	0.00	3.0	78.8	18.2	4.152	0.438

Liquidity coverage ratio aims at ensuring banks have suitable capital preservation that helps in overcoming short term financial challenges.	0.00	0.00	3.0	80.3	16.7	4.136	0.426
Our bank always ensures adequate amount of available stable funding	0.00	1.5	1.5	77.3	19.7	4.152	0.504
Our bank is always in compliance with the required stable funding	0.00	0.00	4.5	71.2	24.2	4.197	0.503
The source of available stable funding in our bank includes customer deposits, equity and long-term wholesale funding.	0.00	0.00	1.5	71.2	27.3	4.258	0.473

The respondents agreed that interest rate of re-loaned money is slightly higher than loans from the bank's own deposits (mean=4.061, SD=0.699). Moreover, they agreed that sometimes the bank is forced to borrow money and re-loan it to its customers due to low amounts of deposits as shown by mean of 4.061 (SD=0.653). They also agreed that bank relies on its deposits in order to give loans to customers (mean=3.909, SD=0.799). The findings conform to Livia and Sardar, (2007) discoveries that the funds that commercial banks lend to customers comes from customer deposits.

With mean of 4.152 (SD=0.728), they further agreed the bank always maintains liquid asset capable of funding cash outflow for at least 30 days. These findings conform to Laminfoday (2018) discoveries that commercial banks in Kenya always maintains liquid asset capable of funding cash outflow for one month. Moreover, respondents agreed that the bank always preserves enough capital to enable it to overcome any short-term financial challenges (mean=4.152, SD=0.438). Additionally, they agreed with mean of 4.136 (SD=0.426) that liquidity coverage ratio aims at ensuring banks have suitable capital preservation that helps in overcoming short term financial challenges.

The respondents agreed that the basis of available stable funding in the bank entails customer deposits and equity (mean=4.258, SD=0.473). The findings conform to Mwangi (2014) discoveries that the source of stable funding in commercial banks includes customer deposits, long-term wholesale funding and equity. In addition, they agreed that the bank is

always in compliance with the required stable funding. This is shown by mean of 4.197 (SD=0.503). Moreover, they agreed the bank always ensures adequate amount of available stable funding. This is shown by mean of 4.152 (SD=0.504).

4.4.2.2 The State of Liquidity Risk Management in the Banks

The respondents were required to describe the state of LRM in their banks. They revealed that there is proper and stable management of funds in the bank. In addition, their banks always ensure they have sufficient funds for funding and meeting other financial requirement for smooth running of the banking operations. The respondents further revealed that their banks maintain adequate liquidity to ensure that its monthly obligations are met without any challenge. Moreover, the banks always preserve enough capital to enable them overcome any short-term financial challenges. Liquidity risk management helps the bank to meet financial needs when they arise.

In addition, the respondents revealed that the interest rate of re-loaned money is made in a slightly higher rate than the loans from the banks own deposits. All the banks reviewed are very keen in observing their liquidity issues as required by the regulator such that they ensure that depositors' interests are taken care of. Further, the respondents revealed that their banks always ensure adequate amount of accessible stable funding from deposits and equity. Moreover, the respondents indicated that their banks are at times forced to borrow money and re-loan it to its customers due to low amounts of deposits. These findings conform to Laminfoday (2018) discoveries that banks borrow in the interbank lending market in order to manage liquidity.

4.4.3 Interest Rate Risk Management

The third objective examined the influence of IR risk management on local private Commercial Banks' profitability.

4.4.3.1 Aspects of Interest Rate Risk Management

The respondents were also asked to specify agreement level in relation to statements relating to influence of IR risk management on their banks' profitability. Results obtained were portrayed in Table 4.4.

Table 4.4: Aspects of Interest Rate Risk Management

	1	2	3	4	5	Mean	Std. Deviation
Interest rate to be charged on loans is determined by the market forces.	0.00	6.1	6.1	53.0	34.8	4.167	0.796
Our bank charges fair interest rate on all loans offered.	0.00	1.5	0.00	59.1	39.4	4.364	0.572
Our bank offers debt contract to depositors.	0.00	1.5	6.1	81.8	10.6	4.015	0.480
The interest rate limit is determined by CBK	0.00	4.5	33.3	22.7	39.4	3.970	0.960
All commercial banks have a common interest rate limit beyond which they cannot charge.	13.6	25.8	19.7	28.8	12.1	3.000	1.265
Our bank charges a common percentage of IR on all loans offered.	4.5	33.3	16.7	40.9	4.5	3.076	1.057
The IR on loans is slightly higher than interest cap rate provided by central bank.	1.5	1.5	10.6	65.2	21.2	4.030	0.723
Our bank charges reasonable interest on loans	0.00	3.0	0.00	81.8	15.2	4.091	0.518

Respondents agreed with mean of 4.364 (SD=0.572) that banks charge fair interest rate on all loans offered. In addition, the respondents agreed that the interest rate to be charged on different loans is determined by market forces (mean=4.167, SD=0.796). These findings conform to Gitonga (2010) arguments that government borrowing, demand and supply of money, inflation, and Central Bank's monetary policy are some of market forces that determine the interest rate to be charged on loans. Moreover, they agreed that the banks offer debt contract to depositors (mean=4.015, SD=0.480). They also agreed that interest rate limit is determined by CBK (mean=3.970, SD=0.960).

With mean of 4.091 (SD=0.518), the respondents also the banks charge reasonable interest on loans. Moreover, they agreed that interest rate on loans is slightly higher than interest cap rate provided by central bank. This is shown by a mean of 4.030 (SD=0.723). With

mean of 3.076 (SD=1.057), respondents were however neutral that the banks charge a common percentage of interest rate on all loans offered. Moreover, the respondents were neutral that all the local private commercial banks have a common interest rate limit beyond which they cannot charge (mean=3.000, SD=1.265). The results are contrary to Birhanu, (2012) findings that a bank or a financial institution in Kenya shall not exceed the set maximum interest rate chargeable for a credit facility.

4.4.3.2 State of Interest Rate Risk Management in the Bank.

The respondents were further required to describe the state of IR risk management in the bank. They revealed that banks ensure interest rate is well monitored and managed. These findings conform to Mensi and Zouari (2010) discoveries that monitoring banks interest rate helps to reduce possible risk and also provide a way for banks' earnings to be stabilized. In addition, the bank ensures that interest rates limits are favorable to its borrowers in order to encourage more borrowing. Moreover, the respondents revealed that the interest rate limit is determined by CBK. Furthermore, the interest rate is a bit fluctuating since the stability mostly depends on the external factors and mostly the economy of the country. Moreover, the banks comply with the set interest rate limits by CBK. The respondents revealed that the interest rate risk management is a bit fluctuating since the stability mostly depends on the external factors and mostly the economy of the country. The respondents further indicated that the bank offers debt contract to depositors.

4.4.4 Foreign Exchange Risk Management

The fourth objective examined the effect of FOREX risk management on local private commercial banks' profitability.

4.4.4.1 Aspects of Foreign Exchange Risk Management

The respondents were also requested to specify their agreement level on statements relating to effect of FOREX risk management on banks' profitability. Results obtained were displayed in Table 4.5.

Table 4. 5: Aspects of Foreign Exchange Risk Management

	1	2	3	4	5	Mean	Std. Deviation
Our bank has agreements that swap principal and interest payments.	1.5	0.00	0.00	68.2	30.3	4.273	0.542
The proceeds of debt provided in foreign currency are swapped into domestic currency of the issuer using cross-currency swaps.	0.00	1.5	1.5	84.8	12.1	4.076	0.441
Cross-currency swaps are used to protect foreign currency bond portfolios.	0.00	1.5	0.00	81.8	16.7	4.136	0.460
Our bank uses cross-currency swaps in order to exchange funding in single currency for funding in another	0.00	1.5	3.0	83.3	12.1	4.061	0.460
Price adjustment result from market forces and can either favor the institution or the customers.	0.00	0.00	0.00	90.9	9.1	4.091	0.290
In case the price adjustment favors the customers the bank gives the customers a partial refund.	0.00	3.0	13.6	74.2	9.1	3.894	0.585
Our bank tries its level best to ensure minimum real adjustment cost.	0.00	0.00	0.00	93.9	6.1	4.061	0.240

Respondents agreed with mean of 4.273 (SD=0.542) that banks have agreements that swap principal and interest payments. Moreover, with mean of 4.136 (SD=0.460), they agreed that cross-currency swaps are used to protect foreign currency bond portfolios. These findings are in line with Soana (2011) arguments that currency swaps offer a way to hedge currency risk as well as adverse change in the exchange rate of two currencies that can crush portfolio returns. Furthermore, they agreed with mean of 4.076 (SD=0.441), that proceeds of debt provided in foreign currency are swapped into domestic currency of the issuer using cross-currency swaps. In addition, the respondents agreed that the banks use cross-currency swaps in order to exchange funding in single currency for funding in another. This is shown by mean of 4.061 (SD=0.460).

With mean of 4.091 (SD=0.290), the respondents agreed that price adjustment result from

market forces and can either favor the banks or the customers. Moreover, they agreed that their banks try their level best to ensure minimum real adjustment cost. This is shown by mean of 4.061 (SD=0.240). These findings conform to Onuonga (2014) arguments that commercial banks in Kenya try their level best to ensure minimum real adjustment cost in order to stimulate economic activity and improve banks' lending. Moreover, the respondents agreed that in case the price adjustment favors the customers, the bank gives the customers a partial refund as shown by a mean of 3.894 (SD=0.585).

4.4.4.2 The State of Foreign Exchange Risk Management in the Bank

The participants were required to describe the state of foreign exchange risk management in their banks. The respondents indicated that their banks make and receive payments through the Kenyan shillings to reduce foreign exchange risk management. The banks have agreements that swap principal and interest payments. In addition, the banks have cross-currency swaps that are used to swap the proceeds of debt issued in a foreign currency into the issuer's domestic currency. The banks also use cross-currency swaps to exchange funding in one currency for funding in another currency. The respondents further revealed that price adjustment in foreign exchange result from market forces and can either favor the banks or the customers.

The results conform to Juma (2018) arguments that market forces including inflation, IR differentials, government control and variations in income level as well as expectations leads to price adjustment in foreign exchange which can either favor the institution or the customers. The banks try their level best to ensure minimum real adjustment cost. In addition, the respondents indicated that the banks also ensure that the foreign exchange is done cautiously to reduce additional adjustments cost. Moreover, the banks have well-built procedures which supports them to achieve their goals and this enables them to ensure they

mitigate any foreign exchange risks. The respondents further indicated that the foreign exchange risk management in their banks is very effective.

4.4.5 Prudential Guidelines

The moderating variable in this study is prudential guideline and local private Commercial Banks' profitability.

4.4.5.1 Aspects of Prudential Guidelines

Respondents were as well requested to specify their agreement level on statements relating to effect of prudential guidelines on profitability of their banks. The results obtained were as shown in Table 4.6.

Table 4.6: Aspects of Prudential Guidelines

	1	2	3	4	5	Mean	Std. Deviation
Our bank adheres to the guidelines issued by the central bank concerning efficient banking and financial systems.	0.00	1.5	0.00	33.3	65.2	4.621	0.576
Our bank has implemented a robust infrastructure which can accommodate different stress tests.	0.00	1.5	0.00	68.2	30.3	4.273	0.542
Our bank has implemented stress testing as risk management method.	0.00	1.5	0.00	77.3	21.2	4.182	0.493
Stress testing forms an essential part of general governance of the bank.	0.00	1.5	1.5	71.2	25.8	4.212	0.541
Our bank operates a stress testing programme that encourages risk identification as well as control.	4.5	1.5	0.00	75.8	18.2	4.015	0.813
The stress testing framework is regularly maintained and updated in our bank.	1.5	1.5	1.5	77.3	18.2	4.091	0.626

Respondents agreed that banks adhere to the guidelines issued by the central bank concerning efficient banking and financial systems (mean=4.621, SD=0.576). Moreover, the respondents agreed that the banks have implemented robust infrastructure which can accommodate different stress tests. This is shown by mean of 4.273 (SD=0.542). Furthermore, they agreed that banks have implemented stress testing as a risk management

method as shown by mean of 4.182 (SD=0.493). The results conform to Onuonga (2014) arguments that stress testing is integral to banks' risk management and banking supervision, in that it alerts bank management and supervisory authorities to unexpected adverse outcomes arising from a wide range of risks.

With mean of 4.212 (SD=0.541), respondents also agreed that stress testing forms an essential part of general governance of the banks. Moreover, they agreed that stress testing framework is regularly maintained and updated by the banks. This is shown by mean of 4.091 (SD=0.626). Furthermore, with mean of 4.015 (SD=0.813), they agreed that banks operate a stress testing programme that encourages risk identification as well as control. These findings concur with Mensi and Zouari (2010) finding that adopting a stress testing programme provides an indication to banks and supervisory authorities of the financial resources that might be needed to absorb losses should large shocks occur.

4.4.5.2 Prudential Guidelines in the Bank

Respondents were as well required to describe the degree to which prudential guidelines affect the relationship between FRM and profitability of their banks. From the findings, the respondents indicated that the effect of prudential guidelines on FRM and banks' profitability is high. When the managers increase their efforts in stress testing, the banks' performance improves. Additionally, banks operate a stress testing programme that encourages risk identification as well as control. The banks have put in place guidelines to manage financial risk that ensure that the banks are making profits. The banks have also implemented stress testing as a risk management method and have a robust infrastructure which can accommodate different stress tests.

The findings conform to Mirzaei (2012) arguments that stress testing is integral to banks' risk management and banking supervision. In addition, the respondents revealed that their

banks regularly maintain and updates stress testing framework to help mitigate the risk that is involved when lending money. The respondents indicated that stress testing forms an essential part of general governance of their banks. When the stress testing is done correctly, the banks are able to assess in a more measurable way the risks that are involved when lending money and hence very helpful in addressing any possible gaps, which in return will affect the profit gained from the interests.

4.4.6 Profitability of Local Private Commercial Banks

The dependent variable was profitability of local private commercial banks. Measures of Local Private commercial banks' profitability were ROA and ROE.

4.4.6.1 Profitability of Local Private Commercial Banks

Respondents were as well required to specify their agreement level on statements relating to profitability of their banks. Results obtained were displayed in Table 4.7.

Table 4. 7: Aspects of Profitability of the Banks

	1	2	3	4	5	Mean	Std.1 Deviation
The company has well utilized its assets so as to make more profits.	0.00	0.00	6.1	28.8	65.2	4.591	0.607
Inconsistent profits affect the analysis of the return on equity	0.00	4.5	13.6	66.7	15.2	3.924	0.686

Source: Research Data (2021)

Respondents agreed with mean of 4.591 (SD=0.607) that banks have well utilized their assets so as to make more profits. These findings are in line with Wen (2010) arguments that efficiency in resource utilization increases the company's profitability. Additionally, they agreed that the inconsistent profits affect the analysis of the return on equity. This is shown by a mean of 3.924 (SD=0.686).

4.4.6.2 Trends for Profitability

The respondents were requested to indicate the bank's profitability trend over the last 5 years. The findings were as presented in Figure 4.5.

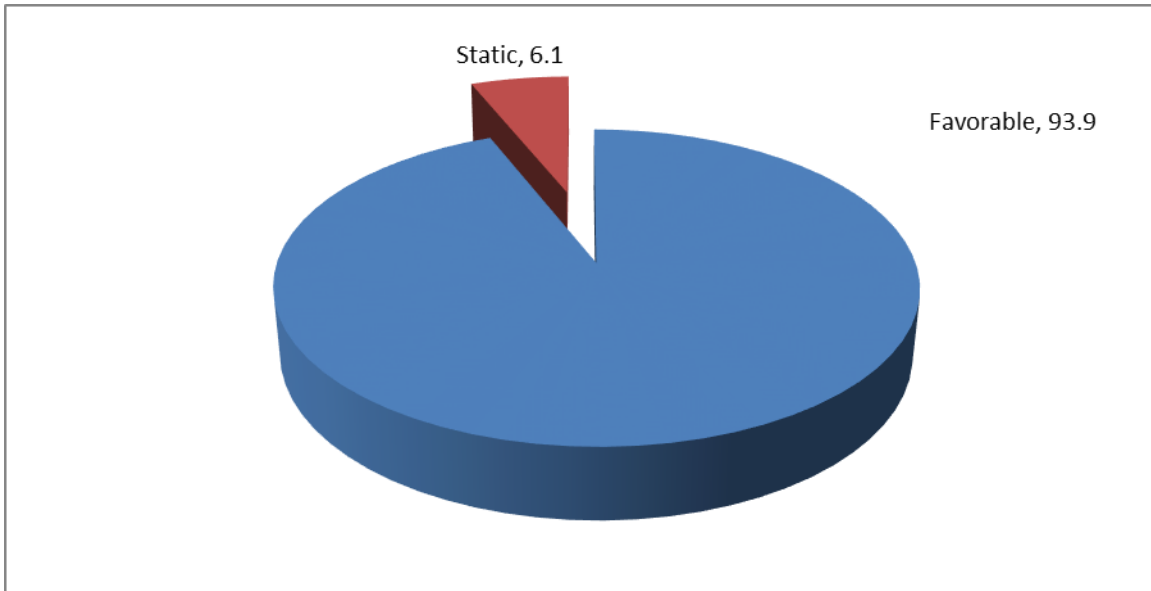


Figure 4. 5: Trends for profitability

According to Figure 4.5, 93.9% of the participants revealed that bank's profitability trend for the last five years has been favorable and 6.1% indicated that it has been static. This means that bank's profitability trend for the last five years has been favorable. These findings are in line with Capital Markets Authority; CBK, (2019) findings that banking industry profitability increased in both 2017 and 2018

4.4.6.3 Profitability Trend over the Last 5 Years

The respondents who indicated that the banks' profitability trend over the last 5 years was favorable were requested to explain their answers. The respondents revealed that their banks have been making proper utilization of assets and available resources. These findings conform to Ongore (2011) findings that proper utilization of assets and available resources increases the company's ROA. In addition, banking sector in Kenya has

undergone numerous financial and regulatory reforms which have brought fundamental changes to inspiring foreign banks to get into Kenyan market. The respondents indicated that their banks have well laid down structures to ensure smooth running of its function and hence make profit. The respondents also indicated that despite the economic challenges experienced in the country, the banks have been making profit in terms of ROA and ROE for the last five years. The banks have guidelines put in place that promotes the banking business and hence profit making. These banks also have proper control methods of running their business thus resulting to improved profits reported by the banks.

4.5 Inferential Statistics

This section shows inferential statistics which were utilized to examine effect of CRM, liquidity risk management, IR risk management and foreign exchange risk management on local private commercial banks' profitability in Kenya.

4.5.1 Correlation Analysis

Pearson product-moment correlation coefficient was utilized to determine strength of association between independent variables (CRM, LRM, IR risk management and foreign exchange risk management) and dependent variable (profitability of the local private commercial banks). Results obtained were as presented in Table 4.8.

Table 4.8: Correlation Coefficients

		Profitability	Credit Risk Management	Liquidity Risk Management	Interest Rate Risk Management	Foreign Exchange Risk Management
Profitability	Pearson Correlation	1				
	Sig.(2-tailed)					
	N	58				

Credit Risk Management	Pearson Correlation1	.829**	1			
	Sig.(2-tailed)	.000				
	N	58	58			
Liquidity Risk Management	Pearson Correlation1	.765**	.023	1		
	Sig.(2-tailed)	.000	.853			
	N	58	58	58		
Interest Rate Risk Management	Pearson Correlation	.866**	.131	-.026	1	
	Sig.(2-tailed)	.000	.295	.838		
	N	58	58	58	58	
Foreign Exchange Risk Management	Pearson Correlation	.862**	.023	.075	-.010	1
	Sig.(2-tailed)	.000	.853	.551	.937	
	N	58	58	58	58	58

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

As shown in Table 4.8, there is a very strong and positive association between CRM and local private Commercial Banks' profitability ($r=0.829$, $p\text{-value}=0.000$). Since $p\text{-value}$ (0.000) was below significant level (0.05), the association was considered to be significant. Moreover, the finding conforms to the finding of Jorion et al (1996) that CRM has an effect on commercial banks' profitability in Sweden. Moreover, these findings are in line with Githaiga (2015) arguments that CRM has strong influence on Kenyan commercial banks' performance.

Moreover, results found strong and positive association between LRM and local private Commercial Banks' profitability operating ($r=0.765$, $p\text{-value}=0.000$). Since $p\text{-value}$ (0.000) was below significant level (0.05), the relationship was considered to be significant. The findings are contrary to Laminfoday (2018) findings that there exist inverse association between LRM and banks' financial returns in Sierra Leone between 2013 and 2017. Further, the findings are contrary to Mwangi (2014) findings that LRM has strong inverse influence on bank's profitability.

Results show positive and strong association between IR risk management and local private Commercial Banks' profitability in Kenya ($r=0.866$, $p\text{-value}=0.000$). Since $p\text{-value}$ (0.000) was below significant level (0.05), the association was considered to be significant. Moreover, the finding conforms to the finding of Gitonga (2010) that there exist strong direct nexus between IR risk management and net interest income therefore earnings of the local private commercial banks. These findings conform to Gitonga (2010) arguments that appropriate interest rate risk management will reduce banks' possible risk and also provide a way for banks' earnings to be stabilized and improved leading to improved profits.

Moreover, results revealed a very strong positive association between foreign exchange risk management and local private Commercial Banks' profitability in Kenya ($r=0.862$, $p\text{-value}=0.000$). Since $p\text{-value}$ (0.000) was below significant level (0.05), the association was considered to be significant. Moreover, the findings contrary to the findings of Kiptisya (2017) that FOREX risk management has inverse effect on banks income and profitability in Kenya. These findings are in line with Kiptisya (2017) discoveries that forex risk has an effect on ROA and ROE thus the use of hedging techniques gave the bank a competitive advantage

4.5.2 Multiple Regression Analysis

The study used multivariate regression analysis to determine the nexus between independent variables (CRM, LRM, IR risk management and foreign exchange risk management) and dependent variable (profitability of local private Commercial Banks). The model summary findings were as shown in Table 4.9.

4.5.2.1: Model Summary

Results in Table 4.9 below indicate the variation in the dependent variable that can be explained by the independent variables for regression between FRM and profitability of local private commercial banks.

Table 4. 9: Model Summary

Model	R	R-Square	Adjusted R-Square	Std. Error of Estimate
1	.861 ^a	.741	.716	.16041

a. Predictors: (Constant), FOREX Risk Management, IR Risk Management , Credit Risk Management, Liquidity Risk Management

As depicted in Table 4.9, adjusted R-squared for the nexus between FRM and profitability of local private commercial banks is 0.716. This is an indication that 71.6% of variation of profitability is explained by financial risk management (CRM, LRM, IR risk management and foreign exchange risk management).

4.5.2.2: ANOVA

The general model significance is displayed in Table 4.10

Table 4.10: Analysis of Variance

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	110.931	4	27.733	161.185	.000 ^b
	Residual	9.119	53	0.1721		
	Total	120.05	57			

a. Dependent Variable: Profitability

b. Predictors: (Constant), FOREX Risk Management, IR Risk Management, CRM, LRM

The ANOVA output above indicates whether model was a good fit. Table 4.10 indicates that F-calculated was 161.185 and F-critical was 2.52. Because F-calculated was above F-critical and p-value=0.000 was not more than 0.05, the model overall was considered good fit, hence, FRM is a good predictor of profitability of the firms studied.

4.5.2.3: Regression Coefficients

Table 4.11 below indicates regression coefficient of CRM, LRM, IR risk management as well as FOREX risk management and local private commercial banks' profitability.

Table 4. 11: Regression Coefficients

	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std.Error	Beta		
(Constant)	0.457	0.133		3.436	0.012
Credit Risk Management	0.468	0.126	0.371	3.714	0.003
Liquidity Management Risk	0.440	0.175	0.407	2.514	0.023
Interest Rate Management Risk	0.939	0.168	0.911	5.589	0.000
FOREX Management Risk	0.812	0.188	0.724	4.319	0.000

a. Dependent Variable: Profitability

Regression equation is obtained from Table 4.11 as captured below:

$$Y=0.457+ 0.468X_1 +0.440X_2 +0.939 X_3 +0.812X_4+\varepsilon$$

The study findings revealed that CRM has significant positive effect on local private commercial banks' profitability ($\beta_1=0.468$, p value= 0.003). Since, p-value (0.003) was below significant level (0.05), the relationship was considered to be significant. This denotes that an improvement in CRM will lead to 0.468 enhancement in local private commercial banks' profitability. The results were contrary to Githaiga (2015) discoveries that CRM has negative association with Banks' financial performance. Moreover, the findings are contrary to Kithinji (2010) arguments that commercial bank profits are unaffected by credit.

In addition, the study indicate that LRM has significant positive effect on local private commercial banks' profitability ($\beta_2=0.440$, p value=0.023). The effect was significant since significant level (0.05) was more than p-value (0.023). This denotes that

improvement in LRM will lead to 0.440 improvement in local private commercial banks' profitability. Moreover, the results are contrary to the findings of Mwangi (2014) that LRM has negative effect with the banks performance in Kenya. Moreover, these findings are contrary to Laminfoday (2018) discoveries that there exists negative significant correlation between liquidity risk management and banks' financial returns.

The results revealed that IR risk management has significant as well as positive effect on local private commercial banks' profitability in Kenya ($\beta_3=0.939$, p value= 0.000). Because p-value (0.000) was below the significant level (0.05), the effect was significant. This is an indication that improvement in IR risk management will lead to 0.939 increase in local private commercial banks' profitability in Kenya. The results conform to Ngalawa and Ngare (2014) arguments that IR risk management has significant positive effect on commercial banks' profitability and change in IR results to change in the income earned because most of the commercial banks are asset sensitive. The findings are in line with Gitonga (2010) arguments that management of IR risk as well as net interest income, and thus commercial bank earnings, have a close direct relationship.

Further, the findings indicate FOREX risk management has an effect on local private commercial banks' profitability in Kenya significantly and positively ($\beta_4=0.812$, p value= 0.000). Since p value (0.000) was below significant level (0.05), the effect was considered to be significant. This means that enhancement in FOREX risk management will result to a 0.812 enhancement in local private commercial banks' profitability. The results are contrary to Juma (2018) arguments that FOREX rate risk has inverse influence on commercial banks' performance. The findings are in line with Kiptisya (2017) findings that forex risk has an effect on ROA and ROE thus the use of hedging techniques gave the bank a competitive advantage.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter outlines the summary of the major findings which has been done in line with the objective of the study based on the output of the descriptive and inferential statistical analysis guided by the study's research hypothesis. The chapter also contains the conclusions that were drawn from the study and policy recommendations. It equally highlights the knowledge gained, limitations of the study and the suggested areas for further studies.

5.2 Summary

This sub-section sets out the summary of study findings. General objective was to assess effect of FRM on local private commercial banks' profitability in Kenya. Particularly, the research assessed effect of credit risk management, liquidity risk management, IR risk management and FOREX risk management on local private Commercial Banks' profitability in Kenya. Moreover, data was analysed by employing descriptive statistics, Pearson product moment correlation coefficient as well as multiple regression analysis. The following are the major findings.

5.2.1 Credit Risk Management and Local Private Commercial Banks' Profitability

The first objective assessed the influence of CRM on local private commercial banks profitability. The results indicate a significant positive association between CRM and local private Commercial Banks' profitability at significance level ($p=0.000$). This means that null hypothesis is not accepted. At 5 percent significant level, results from correlation analysis indicated a significant and strong positive relationship between CRM and local

private Commercial Banks' profitability in Kenya ($r=0.829$, $p\text{-value}=0.000$). Moreover, the positive relationship implies that CRM has significant impact on the profitability of the local private commercial banks in Kenya.

5.2.2 Liquidity Risk Management and Profitability of Local Private Commercial Banks

The second objective sought to assess effect of LRM on local private commercial banks operating in Kenya. Findings documented strong and positive association between LRM and local private commercial banks' profitability ($r=0.765$, $p\text{-value}=0.000$). P-value (0.000) was below significant level (0.05), implying that the study rejects null hypothesis and concluded that liquidity risk management has a significant effect on profitability of the local private commercial banks in Kenya.

5.2.3 Interest Rate Risk Management and Profitability of Local Private Commercial Banks

The third objective of the study sought to assess the effect of interest rate risk management on profitability of local private commercial banks in Kenya. The study documented a strong and positive nexus between IR risk management and local private commercial banks' profitability ($r=0.866$, $p\text{-value}=0.000$). P-value (0.000) was below significant level (0.05), implying that the study rejects null hypothesis and concluded that IR risk management has significant impact on local private commercial banks' profitability.

5.2.4 Foreign Exchange Risk Management and Profitability of Local Private Commercial Banks

The fourth objective sought to evaluate whether FOREX risk management influences local private commercial banks' profitability in Kenya. Results documented strong positive

association between FOREX risk management and local private commercial banks' profitability ($r=0.862$, $p\text{-value}=0.000$). P-value (0.000) was below significant level (0.05), an indication that the study rejects null hypothesis and concluded FOREX risk management has significant effect on local private commercial banks' profitability.

5.2.5 Prudential Guidelines and Profitability of Local Private Commercial Banks

The study assessed moderating effect of PG on financial risk management and local private commercial banks' profitability and established that banks adhere to the guidelines issued by the central bank concerning efficient banking and financial systems. In addition, the study established that the banks have implemented a robust infrastructure which can accommodate different stress tests. The study also found that the banks have implemented stress testing as risk management method. In addition, the study revealed that stress testing forms an essential part of general governance of the banks. Moreover, stress testing framework is regularly maintained and updated by the banks. In addition, the banks operate a stress testing programme that encourages risk identification as well as risk control.

5.3 Conclusion

The study findings indicate that Credit risk management had a significant positive effect on local private commercial banks' profitability in Kenya. In view of this finding, the study concludes that credit limits, credit insurance and loan appraisals influence local private Commercial Banks' profitability in Kenya. This implies that improvement in credit risk management (credit limits, credit insurance and loan appraisals) improves the banks' profitability. Credit Risk Management helps in predicting and/ or measuring the risk factor of any transaction and also assists in planning ahead with strategies to tackle a negative

outcome. Credit risk management helps in setting up credit models which can act as a valuable tool to determine the level of risk while lending.

The study equally found out that LRM had significant positive effect on local private commercial banks profitability. This informs the conclusion that loan to total deposit ratio, liquid coverage ratio and net stability funding ratio influence local private commercial banks' profitability in Kenya. This implies that improvement in LRM (loan to total deposit ratio, liquid coverage ratio and net stability funding ratio) improves profitability of the local private commercial banks in Kenya. Liquidity risk management reduces the probability of banks becoming insolvent, thus reducing the possibilities of bankruptcies and bank runs. Prudent liquidity management as part of the overall risk management of the banking institutions ensures a healthy and stable banking sector. Effective liquidity risk management helps ensure a bank's ability to meet its obligations as they fall due and reduces the probability of an adverse situation developing

The study also established that IR risk management had positive and significant effect on local private commercial banks' profitability in Kenya. Therefore, the study concludes that IR limits and interest on loans influence local private commercial banks' profitability. This indicates that enhancement in interest rate risk management (IR limits and interest on loans) increases local private commercial banks' profitability. The interest rate risk management such as IR limits and interest on loans maintains bank's interest rate risk exposure within self-imposed parameters over a range of possible changes in interest rates.

The study further established that FOREX risk management had a significant positive effect on local private commercial banks' profitability in Kenya. This informs the conclusion that cross currency swaps and price adjustment influence local private commercial banks' profitability in Kenya. This implies that improvement in foreign

exchange risk management (cross currency swaps and price adjustment) improves local private commercial banks' profitability. Foreign currency risk management allows banks to protect themselves from currency risk. This allows them to take control of their own competitiveness by capturing the growth opportunities resulting from buying and selling in multiple currencies. With FX risk under control, managers can focus on growing the bank.

5.4 Recommendations

5.4.1 Recommendations for Practice

The study established that CRM has significant positive effect on local private commercial banks' profitability. This study hence recommends that banks managers should enhance their controls on maximum credit limits for the borrowers and the credit insurance policies. The banks should also put keen focus on examining the market value of the collaterals used to minimize risk of loss in the occurrence of a default on the loan repayments hence improve the banks' profitability.

The study also found out that LRM has significant positive effect on local private commercial banks profitability. This study therefore recommends that the management of commercial banks should conduct conscious financial planning and analysis and forecast cash flow regularly, optimize net working capital and manage existing credit facilities. Liquidity risk management helps in reducing the probability of banks becoming insolvent, thus reducing the possibilities of bankruptcies. Moreover, effective liquidity risk management helps ensure a bank's ability to meet its obligations as they fall due.

The study established that sometimes the bank is forced to borrow money and re-loan it to its customers due to low amounts of deposits. This study therefore recommends that the bank managers should increase the customers' deposits by investing in local businesses

and construction projects as well as partnering with reputable businesses such as credit unions in order to increase customer deposit.

The study found that occasionally, the local private commercial banks charge a common percentage of interest rate on all loans offered. This study thus recommends that the policy makers ought to review percentage of interest rate on various loans offered by the banks in order to attract many borrowers who would like to take diverse categories loans; student loans, mortgage loans, and home loans among others. This will allow the banks to increase their customer base and cater for the diverse needs hence increasing the banks' profitability.

The study found that at times, local commercial private banks have a common interest rate limit beyond which they cannot charge. This study therefore recommends that the government through CBK should establish maximum interest rate limit for all the banks to ensure that interest rates charged on the borrowers are not far beyond their abilities to repay their loans. Higher interest rates drive away willing borrowers which as a result affect the banks' profitability negatively.

The investigation established that FOREX risk management has positive significant influence on local private commercial banks' profitability in Kenya. This study therefore recommends that the banks managers ought to use cross currency swaps to exchange funding in one currency for funding in another currency as well as hedge investments in foreign currency bonds to ensure maximum growth of the banks.

5.4.2 Policy Recommendations

The study established that financial risk management is a critical function in the banks thus it recommends policy formulation on financial risk management strategies that should be carried out by the local private commercial banks to help mitigate against liquidity risk,

credit risk, IR risk and FOREX risk that will consequently lead to increase profitability. Additionally, the study found out that when the banks operate the stress testing programmes that encourage risk identification as well as control and increase the stress testing efforts, the banks' performance improves. The study therefore recommends that the existing stress testing measures for credit, liquidity, interest rate and foreign exchange rate risks for the local private commercial banks should be enhanced and regularly monitored to guide the banks management on the effectiveness of the financial risk management control measures undertaken which will ultimately improve the profitability of the banks.

5.5 Contribution to Knowledge

This study will add more information to finance theory on the effect of financial risk management on profitability of local private commercial banks. The study found that banks are exposed to numerous risks in today's competitive world, including credit risk, market risk, liquidity risk, foreign exchange risk, as well as interest rate risk which could jeopardize bank's survival as well as success in long run as well as short run time horizons. To reduce financial risks, Portfolio diversification for diversifiable risks and hedging activities for non-diversifiable risks as financial risk management techniques may be used.

5.6 Limitations of the Study

Being a sensitive research area because it involved disclosure of the banks' performance, some of the respondents were cautious to give the information. As a result of this, two of the questionnaires submitted were not answered to. The study addressed this problem by providing the necessary permits as well as approvals from NACOSTI and Kenyatta University. The data collection process conducted during a time when the COVID 19 pandemic was still being managed and part of the containment measures imposed by the banks was allowing their teams to work from home in order to practice the social

distancing directive advised by the Ministry of Health. In order to reach out to the target sample, the questionnaire was designed in a google form sheet in order to allow the respondents ease of access from their locations thus facilitate the collection of the data required.

5.7 Areas for Further Research

This study assessed effect of FRM on local private commercial banks' profitability. Nevertheless, the study was only limited to local private banking sector in Kenya therefore; findings cannot be applied to other banking sectors and companies in other sectors in Kenya. The study hence recommends that additional studies ought to be carried out to examine effect of FRM on profitability of the foreign owned banks and entire banking sector in Kenya. Additionally, the study discovered that 74.1% of the local private commercial banks' profitability in Kenya could be accounted by CRM, LRM, IR risk management and foreign exchange risk management. As such, more studies need to be conducted to assess other factors influencing commercial banks' profitability.

REFERENCES

- Aaker, D., & Jacobson, R. (1987). The Role of Risk in Explaining Differences in Profitability. *Academy of Management Journal*.
- Fielder, R., Brown, K., & Moloney, J. (2002). Liquidity risk: What lessons can be learnt from the crisis in Japan's banking system. *Balance Sheet*, 10(1), 38-42.
- Al-Tamimi, H. and Al-Mazrooei, M., (2007). Banks' Risk Management: A Comparison Study of UAE National and Foreign Banks. *The Journal of Risk Finance*.
- Athanasoglou, P. P., Brissimis, S. N. & Delis, M. D. (2005). Bank-Specific, Industry-Specific and Macroeconomic Determinants of Bank Profitability. *Working Paper No. 25*. Economic Research Department, Bank of Greece.
- Awojobi, O. and Roya, A. (2011). Analyzing Risk Management in Banks: Evidence of Bank Efficiency and Macroeconomic Impact. *Journal of Money, Investment and Banking*.
- Bajpai, N. (2011). *Business research methods*. Pearson Education Limited, India
- Basel Committee on Banking Supervision (2001). The New Capital Accord. Bank for International Settlement.
- Basel Committee on Banking Supervision (2010). Basel III: A global regulatory framework for more resilient banks and banking systems. Bank for International Settlement.
- Birhanu, T. A. (2012). Determinants of Commercial Banks Profitability: An Empirical Evidence from the Commercial Banks of Ethiopia. *Unpublished MBA Project*. Addis Ababa University.

- Bodnar, G. M., & Richard, R. C. (2008). Exchange rate exposure: A simple model. In *Global Risk Management: Financial, Operational, and Insurance Strategies*. Emerald Group Publishing Limited.
- Buchanan, D., & Bryman, A. (2009). *The Sage handbook of organizational research methods*. Sage Publications Ltd.
- Carey, A. A. (2001). Effective Risk Management in Financial Institutions: The Turnbull approach. *Journal of Applied Business Research*.
- Central Bank of Kenya (2011). *Annual Bank Supervision Report*. Nairobi: Central Bank of Kenya
- Central Bank of Kenya (2011). *Risk Management Survey Report for the banking sector*. Nairobi: Central Bank of Kenya.
- Central Bank of Kenya (2013). *Risk Management Guidelines*. Central Bank of Kenya.
- Central Bank of Kenya, (2013), "Prudential guidelines for institutions licensed under the Banking Act", Central Bank of Kenya. [Online] Available: <http://www.centralbank.go.ke> Central Bank of Kenya (CBK).
- Central Bank of Kenya (2016). *Annual Bank Supervision Report*. Nairobi: Central Bank of Kenya.
- Central Bank of Kenya (2017). *Annual Bank Supervision Report*. Nairobi: Central Bank of Kenya.
- Central Bank of Kenya (2018). *Annual Bank Supervision Report*. Nairobi: Central Bank of Kenya.
- Central Bank of Kenya; Capital Markets Authority (2018). *Kenya Financial Sector Stability Report*. Nairobi: Central Bank of Kenya.

- Conford, A. (2000). *“The Basel Committee’s Proposals for Revised Capital Standards: Rationale, Design and Possible Incidence, G-24 Discussion Paper Series”*, United Nations, No.3, May.
- Decker, P. A. (2000). The Changing Character of Liquidity and Liquidity Risk Management. A regulators perspective. *The Journal of lending & credit risk management*.
- Eisenhardt, K. (1989). Agency Theory: An Assessment and Review. *Academy of Management Review*, 14(1), 57-74.
- Fisseha, F. L. (2015). Meta Analysis on the Determinants of Commercial Bank’s Profitability: (A Conceptual Frame Work and Modelling). *European Scientific Journal*.
- Githaiga J.W. (2015). *Effects of credit risk management on financial performance of commercial banks in Kenya*. Unpublished MBA Project. University of Nairobi.
- Gitonga, E.T. (2010). *The relationship between interest rate risk management and profitability of commercial banks in Kenya*. School of Business. University of Nairobi.
- Greene, W. H. (2003) *Econometric analysis* (5th Ed). Upper Saddle River, N.J: Prentice Hall.
- Greuning, H.V., Bratanovic, S. B., (2009). *Analyzing and Managing Banking Risk: A Framework for Assessing Corporate Governance and Financial Risk*. Washington, D.C, World Bank.
- Iqbal, Z. & Mirakhor, A. (2011). *An Introduction to Islamic Finance: Theory and Practice*, 2nd Edition. New Jersey: John Wiley & sons.

- Jensen, M., & Meckling, W. (1976). Theory of the Firm: Managerial Behaviour, Agency Costs and Ownership Structure. *Harvard University Press*, 3(4), 1-78. Retrieved from <http://ssrn.com/paper=94043>.
- Jorion, P., and Khoury, S. J., (1996). *Financial Risk Management: Domestic and International Dimensions*. Cambridge, Massachusetts: Blackwell Publishers.
- Kenya Bankers Association. (2020) State of the Banking Industry Report, Kenya Bankers Association Centre for Research on Financial Market and Policy.
- Kiptisya, C. (2017). *The effect of foreign exchange risk management on the financial performance of commercial banks in Kenya: A case of Stanbic bank*. United States International University – Africa.
- Kithinji A. M. (2010). *Credit Risk Management and Profitability of Commercial Banks in Kenya*. School of Business, University of Nairobi.
- Kothari, C. R. (2004). *Research methodology methods and techniques* (2nd Ed). New age international (P) Ltd.
- Laker, A. (2007). *Go to Every Laker Home Game for College Credit*, The Los Angeles Lakers Community Relations department, Los Angeles.
- Laminfoday, D. (2018). *The effect of liquidity risk management on financial performance of commercial banks in Sierra Leone*. School of Business, University of Nairobi.
- Matz, L.M. and Neu, P. (1998). *Liquidity Risk Measurement and Management*, John Wiley and Sons Publishers.
- Markowitz, H. (1959). *Portfolio Selection: Efficient Diversification of Investments*. New York. John Wesley.

- Mbai, A. M. (2007). *The Relationship between Interest Rate Risk and Net Interest Income of Commercial Banks quoted at the Nairobi Stock Exchange*. Unpublished MBA Research Project. University of Nairobi.
- Mensi, S. & Zouari, A. (2010). Efficient Structure versus Market Power: Theories and Empirical Evidence. *International Journal of Economics and Finance*.
- Mirzaei, A. (2012). The Effect of Market Power on Stability and Performance of Islamic and Conventional Banks. *Islamic Economic Studies*, 18 (1 & 2), 45-51.
- Mugenda, O.M., & Mugenda, A.G. (2003). *Research methods: Quantitative and qualitative approaches*, (2nd Ed). Nairobi, African Centre for Technology Studies.
- Mwangi, M. F. (2014). *The effect of liquidity risk management on financial performance of commercial banks in Kenya*. Master of Science in Finance, School of Business, University of Nairobi.
- Ngalawa, J., Ngare, P. (2014). Interest rate risk management for commercial banks in Kenya. *Journal of Economics and Finance*.
- Ngechu, C. R. (2004). *Research methodology: Methods and techniques* (2nd Ed.). Washira Prakshan.
- Obamuyi, T. M. (2013). Determinants of Banks' Profitability in a Developing Economy: Evidence from Nigeria. *Organizations and Markets in Emerging Economies*.
- Onuonga, S. M. (2014). The Analysis of Profitability of Kenya's Top Six Commercial Banks: Internal Factor Analysis. *American International Journal of Social Science*.
- Ramos S.J. (2000); "Financial Risk Management": Inter-American Development Bank.
- Sandstorm A. (2009); "*Political Risk in Credit Evaluation*"; World Bank Group.
- Saona, P. H. (2011). Determinants of the profitability of the U.S banking industry. *International Journal of Business and Science*.

- Salifu, Z., Osei, K. A. & Adjasi, K. D. C. (2007). Foreign exchange risk exposure of listed companies in Ghana. *The Journal of Risk finance*.
- Saunders, M., Lewis, P. and Thornhill, A. (2012). *Research methods for business students*. 6th Edition, Pearson Education Limited.
- Seppala, J (2000), “*The Term Structure of Real Interest Rates: Theory and Evidence from U.K. Index-Linked Bonds*”; Department of Economics, University of Illinois at Urbana, Champaign.
- Sharpe, William F & Alexander J. Gordon & Bailey V. Jeffery (2013). *Investments*, 6th ed., U.S.A., 40-41,654-655, 677-678.
- Sufian, F. & Habibullah, M. (2009). Determinants of Bank Profitability in Developing Economy: Empirical Evidence from Bangladesh. *Journal of Business Economics and Management*.
- Stemler, S. E. (2004). *A Comparison of consensus, consistency, and measurement approaches to estimating interrater reliability*. *Practical Assessment Research and Evaluation*, 9(4).
- Tafri, F. H., Hamid, Z., Meera, A., & Omar, M. A. (2009). The impact of financial risks on profitability of Malaysian commercial banks: 1996-2005. *International Journal of Social and Human Sciences*, 3(3), 807-821.
- Wamalwa, M. F., & Mukanzi, C. (2018). Influence of Financial Risk Management Practices on Financial Performance of Commercial Banks in Kenya, A Case of Banks in Kakamega County. *The Strategic Journal of Business & Change Management*, 5(4), 1040-1056.
- Wanjohi, S. W., Githinji, J. W., Muchiri, J. N. The Effect of Financial Risk Management on the Financial Performance of Commercial Banks in Kenya. *International Journal of Finance and Banking Research*.

Wilson, J. (2010). *Essentials of business research: A guide to doing your research project*.

SAGE publications.

APPENDICES

Appendix I: Introduction Letter

Dear participant,

My name is Anne Mabel Bwibo, a post graduate student at Kenyatta University pursuing an MBA (Finance). By virtue of being part of the team that closely interacts with risk management function; you are one of the study's participants. The title of my research is **“financial risk management and profitability of local private commercial banks in Kenya:**

Please accept my invitation to take part in this study by taking a few moments to complete the questionnaire. Please check the appropriate boxes and answer the questions in the blank spaces. Information given will be handled with outmost anonymity and knowledge gathered will be employed for learning purposes. Attached also find a letter from the university and relevant permits required to undertake the research.

Thank you.

Anne Mabel Bwibo

D53/OL/KSU/24538/2014

Department of Accounting and Finance.

represents disagree, 3 represents Neutral, 4 represents agree while 5 represents strongly agree.

Statement	1	2	3	4	5
Credit limits					
Our bank has maximum amount of credit that is extended to borrowers					
All borrowers have different credit limits depending on their financial transactions					
Our bank carefully analyses the credit worthiness of its customers before extending loans to them					
Credit insurance					
Our bank has a credit insurance policy					
In case of any default on loan repayment the credit insurance company caters for the loss					
The credit insurance limits are reviewed frequently depending on default rates.					
Loan appraisals					
Before granting loan facilities to customers, bank tries to establish the market value of collaterals used					
Market value of collaterals used determines the					

amount of loan limit to be extended					
Our bank gives loan amount which is slightly lower than the market value of the collaterals used					

6. Briefly describe the state of credit risk management in your bank.

.....

.....

C. LIQUIDITY RISK MANAGEMENT

7. This section seeks to obtain information on liquidity risk management in commercial banks in Kenya. Specify your degree of agreement or disagreement with below statements in relation to liquidity risk management and commercial banks' profitability.

Statement	1	2	3	4	5
Loan to total deposit ratio					
Our bank relies on its deposits in order to give loans to customers.					
Sometimes the bank is forced to borrow money and re-loan it to its customers due to low amounts of deposits					
The interest rate of re-loaned money is slightly higher than loans from the bank's own deposits					

Liquid coverage ratio					
Our bank always maintains liquid asset capable of funding cash outflow for at least 30 days					
Our bank always preserves enough capital to enable it to overcome any short-term financial challenges					
Liquidity coverage ratio aims at ensuring banks have suitable capital preservation that helps in overcoming short term financial challenges.					
Net Stability Funding ratio					
Our bank always ensures adequate amount of available stable funding					
Our bank is always in compliance with the required stable funding					
The source of accessible stable funding in our bank entails customer deposits, and equity.					

8. Briefly describe the state of liquidity risk management in your bank?

.....

.....

D. INTEREST RATE RISK MANAGEMENT

9. This section seeks to obtain information on IR risk management in Kenyan commercial banks measured in terms of interest rate hedging, interest rate limits and interest on loans. Specify your degree of agreement with below statements pertaining to interest rate risk management and commercial banks profitability.

Statement	1	2	3	4	5
IR hedging					
Interest rate to be charged on loans is determined by the market forces.					
Our bank charges fair interest rate on all loans offered.					
Our bank offers debt contract to depositors.					
Interest rate limits					
The interest rate limit is determined by CBK					
All commercial banks have a common interest rate limit beyond which they cannot charge.					
Interest on Loans					
Our bank charges a common percentage of IR on all loans offered.					
The IR on loans is slightly higher than interest cap rate provided by central bank.					
Our bank charges reasonable interest on loans					

10. Briefly describe the state of interest rate risk management in your bank.

.....

E. FOREIGN EXCHANGE RISK MANAGEMENT

11. Specify your degree of agreement with below statements pertaining to FOREX risk

management and commercial banks' profitability.

Statement	1	2	3	4	5
Cross currency swaps					
Our bank has agreements that swap principal and interest payments.					
The proceeds of debt provided in foreign currency are swapped into domestic currency of the issuer using cross-currency swaps.					
Cross-currency swaps are used to protect foreign currency bond portfolios.					
Our bank uses cross-currency swaps in order to exchange funding in single currency for funding in another					
Price adjustment					
Price adjustment result from market forces and can either favor the institution or the customers.					
In case the price adjustment favors the customers the bank gives the customers a partial refund.					
Our bank tries its level best to ensure minimum real adjustment cost.					

12. Briefly describe the state of foreign exchange risk management in your bank.

.....

.....

F. Prudential Guidelines

13. This section seeks to obtain information on prudential guidelines (particularly stress testing) involved for IR risk, credit risk, liquidity risk, and FOREX risk. Specify your degree of agreement with below statements pertaining to prudential guidelines and profitability of the commercial banks

Statement	1	2	3	4	5
Our bank adheres to the guidelines issued by the central bank concerning efficient banking and financial systems.					
Our bank has implemented a robust infrastructure which can accommodate different stress tests.					
Our bank has implemented stress testing as risk management method.					
Stress testing forms an essential part of general governance of the bank.					
Our bank operates a stress testing programme that encourages risk identification as well as control.					
The stress testing framework is regularly maintained and updated in our bank.					

14. Describe the extent to which prudential guidelines affect the association between financial risk management and profitability of your bank.....

G. Profitability

15. This section seeks information on profitability measures; ROA and ROE in commercial banks.

Measures of Financial Performance	1	2	3	4	5
The company has well utilized its assets so as to make more profits.					
Inconsistent profits affect the analysis of the return on equity					

16. a) How would you describe your bank's profitability trend over the last 5 years?

Favorable [] Static [] Unfavorable []

b) Please explain your answer above in 1 to 2 sentences.....

Appendix III: List of Local Private Commercial Banks

1. The Co-operative Bank of Kenya
2. Stanbic Bank Kenya
3. Equity Bank Kenya
4. Commercial Bank of Africa
5. I&M Bank
6. HFC Ltd
7. Prime Bank Limited
8. Family Bank Limited
9. Victoria Commercial Bank Ltd
10. African Banking Corporation Ltd
11. Credit Bank Ltd
12. Guardian Bank Ltd
13. M-Oriental Commercial Bank of Kenya
14. Transnational Bank Ltd
15. Spire Bank Limited
16. Jamii Bora Bank Ltd
17. Mayfair Bank Ltd
18. DIB Bank Kenya
19. Middle East Bank Kenya
20. Paramount Bank Ltd

Source: Central Bank of Kenya, 2020