

**DETERMINANTS OF INTEREST RATES SPREAD IN DEPOSIT
TAKING MICRO FINANCE INSTITUTIONS IN KENYA**

BY

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DECLARATION

This research Project is my original work and has not been presented for academic award to any other University.

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LIST OF ABBREVIATIONS

DTMs: Deposit Taking Microfinance Institutions

IRS: Interest rates Spread

ROAA: Return on Average Assets

MFI: Microfinance Institutions

CBK: Central Bank of Kenya

SMES: Small Medium Enterprises

AMFIs: Association of Microfinance institutions

ANOVA: Analysis of Variance

SPSS: Statistical Package for Social Science

OECD: Organization for Economic Co-operation and Development

ABSTRACT

The last five years Kenya has experienced an increase in the number of fully registered Deposit taking micro finance institutions (DTMs) .The objective of this research was to establish the determinants of the interest rates spread in DTMs in Kenya. The research used secondary data collected from individual DTMs, Association of Microfinance institutions in Kenya (AMFIs) and Central Bank of Kenya. The six fully licensed DTMs data was analyzed using regression model for five years (2011-2015). Interest Rate Spread was used as the dependent variable while the independent variables were the determinant of IRS variables which were inflation rate, Operating Costs, Return on Average Assets and Credit Loss Provisions. For secondary data analysis, Descriptive statistics was used since it helps determine a relationship that exists between variables. The Regression analysis was used to test the effect of various determinants on interest rates spreads of Deposit Taking Microfinance institution (DTM) in Kenya. Analysis of variance (ANOVA) was used to test for the reliability and goodness of fit of the regression model that was used in the study. The study results indicated that there is a strong relationship ($R= 0.578$) between Interest Rate Spread and the determinants (credit loss provisions, operating cost, inflation rate and return on average asset). The R-Square in the study revealed that 22.8% of the changes in Interest Rate Spread of the DTMs in Kenya can be explained by credit loss provisions, operating cost and inflation rate. The study established that credit loss provisions, operating cost and inflation rate affects Interest Rate Spread of the DTM institutions positively while return on average asset had a negative effect on the Interest Rate Spread. The credit loss provisions produced statistically significant positive effect on the IRS hence it is a strong predictor that can be used in determining IRS. It can be concluded that Credit loss provisions had significant effect on the IRS. The study recommends that the DTMs should enhance their Credit policy on loans appraisal and risk profiling policy to reduce the default rate and credit loss provision which will enable them reduce the IRS. Also, the study recommends that the management of the DTMs should aim at reducing operating costs as a way of reducing Interest Rate Spread. The study also recommends that the government of Kenya should come up with fiscal policies aimed at cushioning DTMs from high inflationary pressure. Also, the DTMs should maintain adequate return on asset which makes them less sensitive towards interest income thus enabling them to charge low lending rates and give high deposit rate which will create low IRS in order to attract new customers and increase their competitive advantage.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

In the financial intermediation process, Deposit taking Micro finance banks play an important role. This is because they are important players in indirectly channeling funds from the lenders to the borrowers. This is through mobilizing deposits from both Entrepreneurs and small scale enterprises that have surplus and avail these as credit facilities to potential borrowers who are mainly the small scale enterprises (SMES) and entrepreneurs (Kinuthia, 2014). Equally, Interest rates have been important in helping in the intermediation process between the savers and potential borrowers. Savers have surplus while the borrowers have deficit. The savers keep their money in the Deposit taking Microfinance institutions in order to earn the interest on their deposits while the institution lend this money in form of loans to earn interest.

High lending rates usually discourages potential borrowers since the borrowers mainly aim at minimizing the cost of borrowing which is attached to the repayable interest rates, low lending interest rates attract borrowers. The difference existing between the deposits rates and the lending rate at any one given time period constitute the interest rate spread. The interest rates spread has implications on borrowing and deposit mobilization.

As Crowley (2007) highlighted, the Interest rate charged is the price that the borrower pays for the use of fund borrowed from the lender or the fee the lender charges the borrower on use of the borrowed assets. Ideally, interest rates spread is determined from the difference between the average interest rate earned on loans that have been disbursed and the average interest rate paid on deposits for individual banks (Sologoub, 2006).

1.1.1 Interest Rate Spread

Interest rate spread is ideally the difference between the interest rate that is charged on the borrowed fund and the interest rate that is paid to the depositors. Deposit rates include rates given to customers on their savings, call and time deposit while the lending rates include rates charged on either or both the overdrafts and the term loans (Ngugi & Wambua, 2004). Therefore, for the deposit taking Micro finance Banks, interest rates spread can be determined by calculating the difference between the average lending rate (interest income) and the average deposit rate (interest expense).

Interest rates play remarkable role in the financial sector within the economy through enhancing the allocation of resources that are available in the economy. As Kinyua (1997) asserted, interest rates are able to enhance economic resource allocation because they have the ability to intermediate between potential savers and borrowers. Banks charge high interest rates on the loans to cover themselves against the risk presented by the borrowers' risk profile and to maximize on the interest income. They also give low deposit rates to minimize on the interest expense.

According to Emmanuelle (2003) Interest rates spread are dependent on the risk attitude perspective of the Bank. For example, there exist both Risk-averse and risk neutral banks. The Risk-averse banks usually operate within smaller interest rates spread compared to the risk-neutral banks. This is because risk aversion attitude involves banks raising their optimal interest rate and at the same time employing the reduction of the amount of loans facilities they offer.

1.1.2 Interest Rates Spread Determinants

Grenade (2007) from the research on factors affecting the commercial banks interest rate spreads deduced that regulation of rate on both the savings deposits, the reserve requirements, Operating costs, and provision for loans losses were key determinants of the interest rates

spreads among the commercial banks. According to Rocha (1986) interest spread is determined by central Bank loans provisions requirements, cost incurred on transactions, the Direct taxes and the existing economic conditions.

In his study, Ngari (2010) found existence of a positive relationship between IRS and Return on Asset (ROA). He also established that, banks that are bigger in size tend to sustain large interest rates spread. Aregu (2014) indicated that Credit risk; liquidity risk, return on asset, non-interest income, operating cost, industry concentration, reserve requirement, real GDP growth rate, interest rate volatility, volatility that exists in the exchange rates and financial development indicators are significant key drivers of interest rate spread of commercials banks.

From the study by Romero (2011), the cost, competition in the financial markets, the level of legal reserve requirements by the CBK for deposits and the deposit interest are key in the determination of the IRS among the banks. In their study Nazarian and Nejad (2010) stated that banks stability decreases from the increased interest rates spread which imply high risk in the banking. Ngugi (2001) indicates that factors that influence interest rates spread include the monetary policy tightening by the CBK, the banks efficiency which is yet-to-be realized (inefficient banks lead to high interest rates spread) and high intermediation costs.

1.1.3 Interest Rates Spread and Its Determinants

The Interest rate charged is the cost or the price that the borrower usually pays for fund borrowed or the fee the lender charges the borrower on use of the borrowed assets (Crowley, 2007). The spreads are influenced by the risk premium where the risk premium is the cost the lender transfers to the borrower for uncertainty on the repayment of the granted credit.

The variables that are used to determine interest rates spread are classified into three categories which include the individual bank-specific factors which include the operating costs, return on assets, the structure of the balance sheet, the non-interest income, the size of

the bank, liquidity of the bank and the loans that are not performing. The second one is factors specific to the banking sector or the industry such as the degree of concentration which is also referred to as the competition, regulatory requirements like Credit loss provision, statutory reserve requirements. Thirdly, the macroeconomic indicators such as inflation rate and the GDP growth rate (Were and Wambua, 2013).

On short term lending, the IRS have less reaction to shocks from the monetary policy so long as the bank is liquid and well capitalized. The size of the Bank is not relevant in determining interest rate margins while lending rates have a positive relationship with inflation and real Gross Domestic Product (Gambacorta, 2004).

1.1.4 Deposit Taking Micro Finance Institutions in Kenya

Licensing of the deposit taking micro finance banks by CBK in Kenya started in the year 2010. Microfinance banking industry in Kenya has experienced drastic and comprehensive reforms and more microfinance banks are still being licensed to date. The reform has achieved phased success, while challenges remain. These reforms in the microfinance banking industry have over the years increased their growth. The stakeholder confidence in micro finance industry has also been increasing due to the CBK stepping in as the regulator to the micro finance institutions. The CBK came in with the microfinance act 2006 and Deposit Taking Microfinance Regulations of 2008(CBK, 2008).

There exists twelve fully licensed micro finance Banks in Kenya. These include; Faulu Microfinance Bank, Kenya Women Microfinance, SMEP Microfinance Bank, REMU Microfinance Bank, Rafiki Microfinance Bank, Century Microfinance Bank, SUMAC Microfinance Bank, Uwezo Microfinance Bank , U&I Microfinance Bank, Daraja, Choice and Caritas Microfinance Bank. Collectively, these have 1.47 million deposit accounts which are valued at Sh32.04 billion and loan book portfolio of Sh34.77 billion (CBK, 2015).

Micro finance institutions exist in the economy to help avail financial services to small business and the entrepreneurs who have little or no access to banking services. The micro finance banks use both relationship banking and group banking models. The relationship banking is mainly for the individual's small businesses or the entrepreneurs while the group based model usually applies where a number of entrepreneurs together as a group apply for credit facilities and other banking services as a group. They also help reduce the cost of funds through collecting deposits from the public. Micro finance banks have been enjoying higher interest rates spread than the commercial banks. This is because their interest rates have remained higher than the banks. As per Nyagol, Otieno and Onditi (2016), a strong and efficient sector in the microfinance banking is important to create growth in the economy that is sustainable as banking sector supports small scale enterprises that contribute about 20% to the GDP.

1.2 Research Problem

The difference that exist between the interest rates that is charged on deposits and interest rates charged on credit facilities constitute the key variable for the financial system and economic development (Barajas et al, 1999). This is because the existence of high interest spread inhibits the economic development and the expansion of the financial intermediation system. This is as such because the savers are not attracted by the low rate of return offered on their deposit and while the borrowers are opposed to borrow at the high interest rates. This limits the possible opportunities of investments and resultantly, the feasible potential of the economic growing is impeded (Chelangat, 2014). The IRS have persistently been higher within and among the African countries (including Kenya) and Latin-American together with the countries found in the Caribbean region than in OECD countries (Mlachila and Chirwa, 2004). The high spreads of the interest rates are attributed to various factors like the high cost

of operations, financial taxation which is also referred to as repression, absence of competition, and inflation rates being high (Chand, 2002).

Deposit taking Microfinance Banks are critical for the development of the economy. Although Kenya financial sector was liberalized in the early period of 1990s to allow the interest rates determination by the market, a lot has not been answered on the persistent existence of high interest rates spreads among the DTMs in Kenya. For example, Interest rates spread had persistently been so high and in the year 2015, members of Kenyan parliament tabled a motion in attempt to cap the high interest rates charged by the banks which was assented to in the year 2016. As per CBK (2015), the micro finance institutions interest rates spread have been the highest averaging 12.8 % compared to commercial banks 9.2%.

Hawtrey and Liang (2008) did a research on interest margins for the banks that found in the countries that are within the Organization for Economic Co-operation and Development (OECD) and stated that high interest rates spread can cause two dangers which are creating money scarcity and unfairly leading to one group in the economy bearing the high interest rates effect and high cost of acquiring the funds. The high interest rates spread creates scarcity of the money leading to recession because they reduce the trade and other industrial activities through restricting consumer borrowing for their spending and investments in business. The high cost of acquiring the funds through credit facilities cuts the profit margins which renders the small and medium borrowers unable to borrow hence limiting their survival. Interest rates spread are determined by factors such as loans to total deposit ratio, the ratio of the cash reserves, ratio of average capital to average total assets, ratio of average loans to average total assets, and ratio of non-interest expenses to average total assets (Akinlo 2012). Therefore, reducing the ratio of the loans to total assets and reducing the statutory reserve requirements stipulated by the Central Banks can substantially help reduce the IRS.

Despite the various financial inclusion that have been ongoing such as licensing DTMs, reducing the transaction costs and breaking entry barriers which are key in the enhancement of competition experienced within banking sector, the IRS have been increasing or stagnant instead of narrowing down. Additionally, despite the existence of high interest rates spread in deposit taking microfinance institutions in Kenya, the locally done prior studies on the field of interest rates spread have only focused on the establishing determinants of the IRS in the banks in general and commercial banks. Were and Wambua (2013) did conduct a research which aimed to help in Assessing the interest rate spread determinants in commercial banks in Kenya and found out that real GDP growth and inflation rates not significant in explaining interest rates spread across the banks while the monetary policies have significant impact on the interest rates spread. Chelangat (2014) did a research on determinants of IRS in the banking sector in Kenya and found out that the Treasury bill rate, discount rate and the reserves greatly influence the interest rates spread. Oduori (2012) did a research on determinants of interest rate spreads amongst commercial banks in Kenya and found out that Central bank rate and rate of the Treasury bills have a significant influence on the interest rates spread. However, there has not been a single research to investigate the determinants of the interest rates spread in the deposit taking micro finance institutions in Kenya. Therefore, this paper attempts to fill this gap in the Kenyan case by undertaking a comprehensive study on the factors behind the high interest rate spread in Deposit taking Micro finance institutions in Kenya.

1.3 Research Objective

The general objective of this study was to establish the determinants of the interest rates spread in Deposit taking Microfinance institutions in Kenya.

The specific objectives of this study were:

- i. To examine the impact of Inflation on the IRS.

- ii. To determine the contribution of Operating Cost on the IRS.
- iii. To determine the extent at which Credit Loss Provisions affect the IRS.
- iv. To establish the effect the Return on Average assets has on the IRS.

1.4 The Value of the Study

The study will be beneficial to the researchers and Academicians as they can use it as a reference point when doing research on the interest rates spread determinants in Deposit taking microfinance institutions in Kenya. Also, this research forms basis from which the further research can be done.

It will help the management and executives of the deposit taking microfinance Banks to better understand the factors that determine the interest rates spread and help them respond appropriately in sustaining their preferred interest rates spreads.

It will be also useful to both potential borrowers and savers. This is because it will help the borrowers understand the rationale behind the lending interest rates charged by the Banks and the deposit rates offered by the banks. This will help them make the relevant decisions accordingly in regards to borrowing and choosing the banker of their choice accordingly.

The study will be of advantage to the Deposit taking Microfinance institutions because it will give an analysis that is objective in justifying existence of high interest rates spreads. It will be useful to the CBK because it will help the CBK to make monetary policies that are more informed and of value addition in helping to reduce the Interest rates spread. This will in the long run be of value addition to both the borrowers and depositors who actually face the actual impact of the high interest rates spread.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

There exists significant amount of empirical studies in both Kenya and international researches on the interest rates spread. This chapter outlines the various empirical researches that are relevant to investigating the determinants of the interest rate spread. The issues in the objective will be reviewed and discussed.

2.2 Theories of Interest Rates Spread

This chapter reviews available theoretical and empirical literature that have focused on the determinants of the interest rates spread among the Deposit taking microfinance Banks. For the guidance of this paper, four theories as highlighted below were reviewed.

2.2.1 The Loanable Funds Theory of Interest Rates

In his research Fry (1995), there is an assumption on the theory of the loanable funds that the interest rates charged usually are subject to determination by two market forces which are the supply of loanable funds and demand for credit. This theory focus more on interest rates determination and long term interest rates explanation.

Loanable fund is the money the investors and entities in the economy have saved and intend to lend it to the potential borrowers. By the use of market demand and supply for loanable funds, the theory explains the interest rates on loans in the market. The supply for the loanable funds comes from the economic entities, government and individuals who opt not to spend but to save money for investing. Investors lending at an interest rate here is one way of investing. The demand for the loanable funds comes from the individuals and business who wants to finance their businesses and investments such as purchase of assets that increase in value with time e.g. Land. As a result, borrower's choice to finance their investments through acquiring the credit facilities creates the demand for the loanable fund.

As per the theory, determination of the interest rates spread is founded on the market forces of demand and supply of the loanable funds. The interest rates are determined as the level at which demand and supply for loanable funds are equal. According to research by Claeys and Vander (2008) Loanable funds theory explains the determinants of interest rate spread, this is because if people do not save with the banks, there is insufficient supply of the loanable funds and the banks will not be able to lend or give credit facilities to the borrowers. As a result, there will be higher demand for the credit facilities than the supply of the loanable funds. This high demand leads to banks charging high interest rates. This has a resultant effect of widened interest rate spread. The loanable funds theory assumes that there is existence of a perfect competition within the market such that, neither a borrower nor the lender can determine the prices of the securities. Also, it assumes there exist free mobility of the funds in the market.

2.2.2 The Classical Theory

The classical theory of the interest rates determination significantly relate to the classical theory of the economics. According to the classical theory, the economy is viewed as being able to regulate itself. As a result, it applies savings and investments to establish the equilibrium interest rate obtainable from the point where the investments and the savings curves intersect (Oost, 2002).

In the economy, individuals with surplus cash save their money in the banks as savings. This fund is available for borrowing by the economic entities that use the fund to invest in order to generate more income that will be saved in the banks as savings. If the savings exceed investments, it implies there is excess savings of the money than the investments. As a result, the interest rates drop until the borrowers can access the fund cheaper. Conversely, if the level of savings is less than the investments, the level of the interest rates will rise until it

reaches the equilibrium point which is the point where the savers find the incentive or the reward to keep their money in the bank.

When the interest rates increase, the savings in the economy increases due to the reward associated with the increased interest rate on savings. Additionally, as the rate of interest charged decreases, the cost that is carried in the borrowing also increases leading to investments. When the savings increases, the lending rates decline which lead to increased investments from the ease of access of the money at a lower interest rate.

2.2.3 The Liquidity Preference Theory of Interest Rates

According to the liquidity preference theory of interest rates, the investors have the preference to hold short-term securities to holding the long term securities. This is because the short term securities are more liquid and less risky. Therefore, for investors to enter into long term investments, they demand interest in return or liquidity premium for sacrificing their liquidity. According to the theory, the long term rates usually equate geometric average obtained from the expected and current short term rates added a liquidity premium. This interest return or the liquidity premium acts as compensation for the risk of interest rates associated with the long term investments. There exists greater volatility of the interest rates for the long maturity investments. As a result, long term maturity investments have higher interest than the short term investments.

Under uncertainty, the real forces that impact on investing and savings may not apply but expectations influence these decisions. For example, savers who are risk averse adjust their portfolio based on their expectation on how the prices will change of the assets they hold. If the people have confidence that the prices of the assets they hold will increase, they then keep higher liquid assets proportion in their assets portfolio in order to benefit from the higher rates offered (Oduori, 2012). When there is increased doubt on the expected prices in the future for the assets, people will forfeit the higher rates of return. A good example is the share

investments where if the investors will sell the shares they hold in order to buy those of the companies likely to perform better. Again, bonds that have distant maturity date usually carry more risk that is capital in nature than those that have near to maturity or short maturity period. It is therefore imperative that bonds that have long maturity period are likely to be less attractive to the investors who are risk averse compared to the bonds that hold short period before maturity (Howels, 2007).

2.2.4 Financial Repression Theory

The theory involves the implementation of policies that aim at enhancing government direct control over the financial system and controlling the fiscal resources. The government aim to reduce debt through channeling the funds to themselves. It does this through instituting a ceiling on the lending interest rates, directing the lending to the government and certain industries, regulating the movement of capital between countries and enhancing association that exist between the government and the banks.

This has been criticized as it may lead to crowding out effect on the private sector. According to Roubini and Sala-i-Martin (1992), growth of the economy is restrained by the financial repression because the repression have negative consequences to the performance of the private sector. These negative consequences can be traced from the financial repression impact of generating inefficiency in capital allocation, lower rates of return to the savers and elevated costs of financial intermediation.

2.3 Determinants of Interest Rates Spread

This chapter outlines and explains the various variables that are relevant in the determination of the interest rates spread in the deposit taking Microfinance institutions in Kenya. According to Rocha (1986) interest spread is determined by central Bank loans provisions requirements, cost incurred on transactions, the Direct taxes and the existing economic conditions. Therefore, this research shall use Inflation as a variable to measure the existing

economic condition, Return on average Assets as a measure of DTM institution profitability, Operating Costs as a measure of the costs and credit loss Provisions which is a facet of the Central bank regulatory requirements. Details are as discussed below;

2.3.1 Credit loss Provisions

Credit loss provision involves the provisions for the loans the bank has advanced. The central Bank has formulated the guidelines and regulations that the banks use to provide for their loans. According to Risk Management guidelines dated 2013 by the Central bank of Kenya, Loans are classified into Normal, watch, substandard, doubtful and loss whose days in arrears are 0, 1-30, 31-60 days, 61-90 days and above 90 days that are in arrears respectively.

In terms of the loans provisions, this is based on various classes according to the days the facility has been in arrears. According to Risk Management guidelines by CBK, the microfinance are guided by the following minimum provisioning percentages on their loans; Normal loans 1%, watch 5%, substandard 25%, doubtful 75% and loss 100%.

2.3.2 Inflation

Inflation rate is generally the increase in the general levels of prices for goods and services. For the economy to run smoothly, it is the responsibility of the CBK to limit the inflation. In Kenya, Data on consumer price indices (CPI) is collected monthly by the Kenya National Bureau of Statistics (KNBS). The percentage change of the CPI over a one-year period is what is referred to as inflation (CBK). According to central Bank of Kenya, the Inflation (annual average) as at December 2015 stood at 6.58%.

According to Hanson and Rocha (1986), from their research to investigate the factors determining large spread by using data from 29 countries for the period between 1975 and 1983, it was established the High inflation rates were the major cause of the high Interest rates spread.

2.3.3 Return on Average Assets (ROAA)

ROAA is used as an indicator of the financial institutions' profitability. It is the net income to the average total Assets ratio. With existence of a Banks' Increased profitability creates room for the bank to lower their loans and deposit pricing. Coupled by the increase in market share in the lending industry, the institution has low interest spread.

Aregu (2014) asserted that high profitable banks have the power to maintain lower spreads. This is because they have the muscle and capital to mobilize for cheaper deposits and charge low interest rates on their credit facilities to attract more borrowers. Therefore, banks with adequate return on asset are less sensitive towards interest income thus; it has likely to charge low lending and high deposit rate in order to attract new customers and take competitive advantage.

2.3.4 Operating Costs

Operating costs are known indicators of a bank operating efficiency. This means that, a bank that is cutting cost is referred to be efficient. Bank play the role of financial intermediation which comes with its own cost, as a result, this cost will increase lending rates and reduce the deposit rates which will lead to high interest spread. In their research, Wong and Zhou (2008) found out that, interest rates spreads are determined by operating costs and management efficiency. According to Hawtrey and Liang (2008) existence of high interest rates spread among the banks in Jamaica was attributed to the High business execution costs incurred.

2.4 Empirical Review

The Empirical evidence describes the studies that have been done both internationally and locally. It also shows the researcher, when it was done, the place it was done, method used and also the findings of the study.

2.4.1 International Studies

Gelos (2006) did a comprehensive study of the causes of high interest rates spread in Latin American banks. It was established by the study that these banks had high spreads due to the existent of interest rates that were high, less efficient banking sector and larger reserve requirements than banks in other regions. Further, Randall (1998) and Gelos (2006) found out that higher costs required the banks to continue charging higher interest rates spreads in an attempt to sustain their profits. Grenade (2007) from the research on factors affecting the commercial banks interest rate spreads deduced that regulation of rate on both the savings deposits, the reserve requirements, Operating costs, and provision for loans losses were key determinants of the interest rates spreads among the commercial banks. Hanson and Rocha (1986), from their research to investigate the factors determining large spread by using data from 29 countries for the period between 1975 and 1983, they established the High inflation rates were the major cause of the high Interest rates spread. Additionally, from the study by Romero (2011), the operating cost, competition in the financial markets, the level of legal reserve requirements by the CBK for deposits and the deposit interest are key in the determination of the IRS among the banks.

Gambacorta (2004) studied to establish the factors that determine the cross-sectional differences in the interest rates among the Italian Banks. He factored the micro and macroeconomic factors which were composed of demand for the loans and demand for the deposits, Banks credit risk, the cost of operation and volatility of the interest rate, the monetary policy impact from the changes in policy's rates and the reserve requirements and the structure of the industry. He established that on short term lending, the IRS reacts less to the shocks that result from the monetary policy so long as the bank is well liquid and well capitalized. Hawtrey and Liang (2008) in their research on establishing determinants of Bank

interest margins in OECD countries also observed that existence of high interest rates spread among is attributed to the high business execution costs incurred.

Gelbard and Leite (1999) on their assessment of the development of the sub-Saharan African countries established that, in sub-Saharan there is an extremely limited range of the financial products, wide interest rates spread, insufficient capital adequacy ratios, lack of proper judicial loan recovery and high value non-performing loans. The research found substantial progress on developing the financial sector in the Sub Saharan Africa although a lot was yet to be done. Further, Aregu (2014) in his research on the Determinants of Banks Interest rate spread which was an Empirical Evidence from Ethiopian Commercial Banks indicated that Credit risk, return on asset, non-interest income and operating cost were key determinants of the interest rates spread among the commercial banks.

2.4.2 Local Studies

Ngugi (2001) through his analysis of the banks interest rate spread in Kenya for the period between the years 1970-1999 found out that the interest rates spread increased due to the efficiency not yet gained by the banks and the High cost incurred in the intermediation process. Additionally, Ndung'u and Ngugi (2000) from their research on determinants of interest rates spread explained the interest rate spread among the developing countries as being caused by the high cost incurred in the bank's operations, financial taxation which is also referred to as repression, lack of banking and financial sector that is competitive and banking sector and the instability from the macroeconomic sector.

Chelangat (2014) did a research on determinants of interest rates spread in the banking sector in Kenya through use of time series data that was quarterly collected for the period between 2008 and 2013 and found out that interest rate spreads in Kenya has been on the rise in the period under the review. The research established that the rate of the discount, the rate of the Treasury bill and the reserves are established to play crucial role in the determination of the

interest rate spread in Kenya's Banking segment of the economy. The research also found out that, if the central bank lowers the discount rate, it could help the banks reduce their interest rates spread. This is because the banks usually transfer borrowing cost they incur from the CBK to their customers which have a resultant effect of increasing the interest rates spread.

Ngigi (2014) through his study to establish the determinants of lending interest rates in Deposit Taking Microfinance Institution in Kenya established that there exists three factors which included; cost factors, economic conditions and market factors which are broadly broken down as low savings levels which have a resultant effect of leading to the low supply of the credit facilities by banks, reduced and inadequate competition within the banking sector which result into inefficient banking sector, low profitability of banks which results to banks charging high interest rates to maximize on the interest rates spread and the low quality of loan portfolios which leads to high non-performing loans determines lending rates in deposit taking Microfinance institutions in Kenya.

According to his research Kinyua (1997) on factors that keep high interest rates among the commercial banks, he established that factors that keep interest rates high among the Kenyan Banks include high portfolio of Non-performing loans, excess demand for loans which imply lack of competition among the institutions offering credit facilities, Inefficiency, inadequate competition in the banking sector and high operating costs, underdeveloped capital markets and lack of access into the international money markets.

Were and Wambua (2013) did conduct a research which aimed to help in Assessing the interest rate spread determinants in commercial banks in Kenya and found out that real GDP growth and inflation rates not significant in explaining interest rates spread across the banks while the monetary policies have significant impact on the interest rates spread.

Waruiru (2012) on the research on the Determinants of Interest Rates in Micro Finance Institutions in Kenya established that administrative cost; cost of funds and loan loss determined the amount of the interest rates charged by the microfinance institutions in Kenya. The study also established that, these factors had a direct relationship with the interest spreads. For example, with existence of high administrative cost, it leads to the banks charging higher interest rates in attempt to meet their administrative expenses. The high cost of the fund kept the interest rates high in attempt to keep the interest margin. With increased loans loss, the interest rates were kept high to cater for the interest margin lost due to provision on the loans loss.

2.5 Conceptual Framework

In any regression model, the independent variables are believed to influence the dependent variables. They can be referred to as Explanatory variables because they explain the dependent variable. In the research the independent variables were the determinants of the interest rates spread whereas the dependent variable was the interest rates spread. The moderating variables were Inflation, Return on average assets, Operating Cost and Credit Loss Provisions as shown in the figure 2.5.1 below.

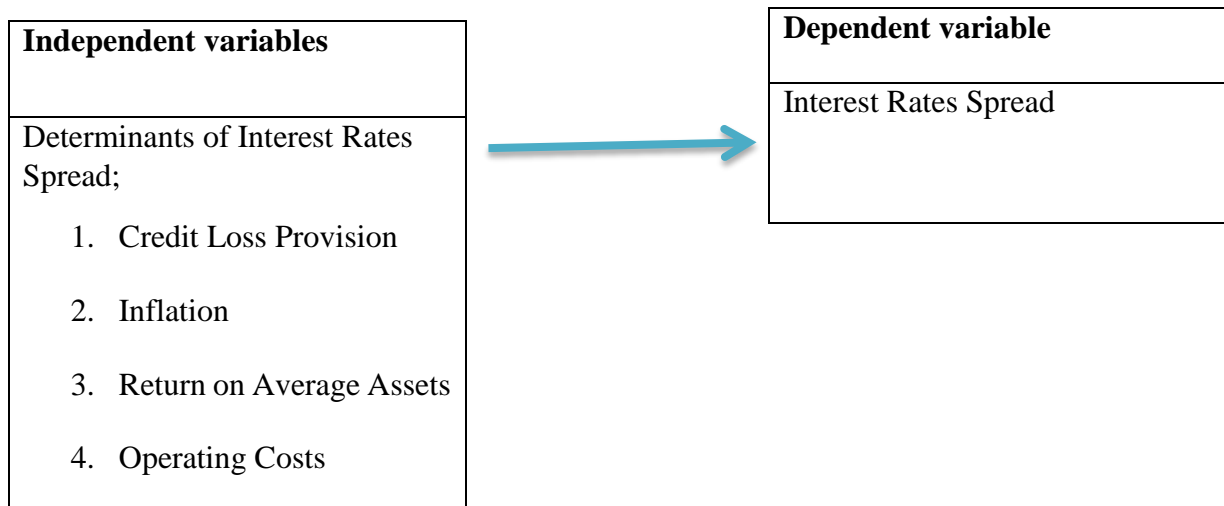


Figure 2.5.1: Conceptual Framework

2.6 Summary of the Literature Review

The studies that have been done so far in this area have mainly focused on the determinants of the interest rates spread on the commercial banks in Kenya as indicated by Chelangat (2014), were and wambua (2013) and Oduori (2012). From the overview of these studies, it is apparent more light needs to be shed in this area of research by widening the scope of the study to concentrate on the Deposit taking Microfinance institutions in Kenya. It is therefore imperative that the gaps be filled hence this study was set to answer the following question; What are the determinants of interest rates spread in deposit taking MFIs in Kenya?

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter deals with the research method that was employed in the whole study. This comprises the design of the research, target population, technique employed in the data collection and the instruments, source of data, selection procedures and data analysis.

3.2 Research Design

The research employed the descriptive survey research design. This is because the descriptive research design enables the researcher to establish the relationship between the variables that are used in the research. As Mugenda and Mugenda (1999) stated, descriptive survey is a study method that is designed to collect data from the population and then help the researcher to understand the data collection process with objective to answer question regarding the current and evident status of the subjects are that are used in the study.

In his research Lavrakas (2008), research design can be referenced as the strategy for administering a research study to investigate specific testable research questions which are of the researchers' interest. It answers the "what" questions on the characteristics of the population. As Sekaran & Bougie (2011) stated, the research main objective is to illustrate what is in existence, unearth new meaning and establish the frequency with which something is occurring and classify the data or the statistics. It was suitable that the descriptive survey was appropriate in answering the question on what are the determinants of the interest rates spread in the deposit taking micro finance institutions in Kenya.

3.3 Population of Study

The study population taken into consideration should be a group sharing characteristics. The target population is the population to which the study findings will be generalized (Wangai,

Nemwel, and Gathogo 2012). According to Carr and Griffin (2010) population is any group that is complete sharing common characteristics set.

The target population employed by the study was the six fully licensed deposit taking Micro finance banks that have been fully in existence since the year 2011 to 2015. As per the CBK (2015), in Kenya, there exists 12 fully licensed deposit taking micro finance Banks. As at the year 2011, there were only six fully licensed DTMs in Kenya which formed this study's sample study population.

3.4 Data Collection

The study involved the use of the secondary data that was obtained from the following various sources; Data on various years' inflation rates, Annual financial statements and banking supervision reports on the deposit taking MFIs under consideration was obtained from the CBK and the deposit taking MFIs themselves. The study also used the secondary data from the Association of Microfinance Institutions in Kenya (AMFIs). The study period was for the last 5 years from 2011 to 2015.

3.5 Data Analysis and Presentation

After the data was collected, it was then fed into the format of the spread sheet, examined and SSPS from where graphs, tables and other statistical parameters of estimation were generated to bring out the summaries and tabulation for ease of understanding the analytical results.

Quantitative data was analyzed using linear regression model. This statistical information was used to obtain answers to the questions that concerned the study; what are the determinants of the Interest rates spread in deposit taking Microfinance institutions in Kenya. This was accomplished through using the interest rates spread as the dependent variable and regress it against Inflation, Return on Average assets, operating cost and Credit loss provision.

3.5.1 Analytical Model

The linear regression model for this study was:

$$y = \alpha + b_1 \log_e x_1 + b_2 x_2 + b_3 x_3 + b_4 x_4 + \varepsilon$$

Where;

y = Interest Rates Spread (IRS) measured as interest Income minus Interest expense. The interest income is obtained by dividing interest income with total loans while interest expense is obtained by dividing interest expense with total deposits.

The data on the Interest income and Interest expense for calculating IRS was obtained from CBK annual supervision reports on DTMs.

x_1 = Annual Average Inflation Rate was measured from the monthly average inflation rates obtained from the Central Bank of Kenya website.

x_2 = Return on Average Assets (ROAA) was measured as net income divided by the total assets. The data was obtained from CBK annual supervision reports on DTMs.

x_3 = Operating Cost was measured as a ratio of Operating cost to total income. The data was obtained from CBK annual supervision reports on DTMs.

x_4 = Credit Loss provision which was measured as specific loans provisions divided by total loans. The data was obtained from CBK annual supervision reports on DTMs.

α = the regression constant (represents the intercept)

ε = Error Term

b_1 , b_2 , b_3 and b_4 represent the coefficients of respective variables: Inflation, Return on Average Assets, Operating costs and Credit loss provision.

Since the data was secondary, the researcher did not collect any unreliable or invalid data and as a result it was not necessary to conduct tests of validity and reliability.

3.6 Test of significance

From the equation, the researcher did regression of Y (Interest Rate Spread) indices on its Determinants which were the x_1 , x_2 , x_3 and x_4 which represented Inflation, Return on Average Assets, Operating costs and Credit loss provision respectively.

The ANOVA (Analysis of Variance) was used to test the Reliability and goodness of fit of the regression model.

The Hypothesis test;

H1- there is a relationship between interest rate spreads and its determinant variables.

CHAPTER FOUR

DATA ANALYSIS, FINDINGS AND INTERPRETATION

4.1 Introduction

This chapter presents the data analysis, results and interpretation of the findings. The data analyzed in the study was selected based on the availability for the past five year's period spanning from 2011 up to 2015. Analysis was done using SPSS version 21 and Microsoft's Excel (2016). Mean and the Standard deviation were the descriptive statistics that were used as measures of dispersion in the analysis of the secondary data. Regression analysis was used to test the effect of various determinants on interest rates spreads of Deposit Taking Microfinance (DTM) institutions in Kenya. Reliability and goodness of fit of the regression model was tested using analysis of variance (ANOVA). The objective of the study was to establish the determinants of the interest rates spread in DTM institutions in Kenya.

4.2 Descriptive Statistics

This gives the summary statistics of the main variables that have been included in the model including: mean, minimum, standard deviation and maximum.

4.2.1 Interest Rates Spread

The IRS is ideally the difference that exists between the interest income and the interest expense which is the interest that is paid to the depositors. In this study, Interest Rates Spread was used as the dependent variable. The table 4.2.1 shown below highlights the computations of both the mean and standard deviation of the IRS for the period (2011-2015) used in the study.

Table 4.2.1: Interest Rates Spread

IRS	2011	2012	2013	2014	2015
Mean	0.192	0.265	0.191	0.049	0.198
Standard Deviation	0.102	0.131	0.071	0.162	0.086
Maximum	0.285	0.488	0.292	0.233	0.333
Minimum	0.028	0.138	0.113	-0.195	0.105

Source: Research Findings (2016)

From the above, the study findings indicate there were fluctuations in Interest Rates Spread among Deposit Taking Microfinance (DTM) institutions in Kenya over the period under the study (2011-2015). The year 2012 recorded the highest Interest Rates Spread (M= 0.265, SD= 0.131) while the year 2014 recorded the lowest Interest Rates Spread (M= 0.049, SD= 0.162). The standards deviations that registered within the period under the study indicated fluctuations in Interest Rates Spread over the study period. The trend in the Interest Rates Spread over the period of the study is as shown Figure 4.2.1.

Table 4.2.1: Interest Rates Spread

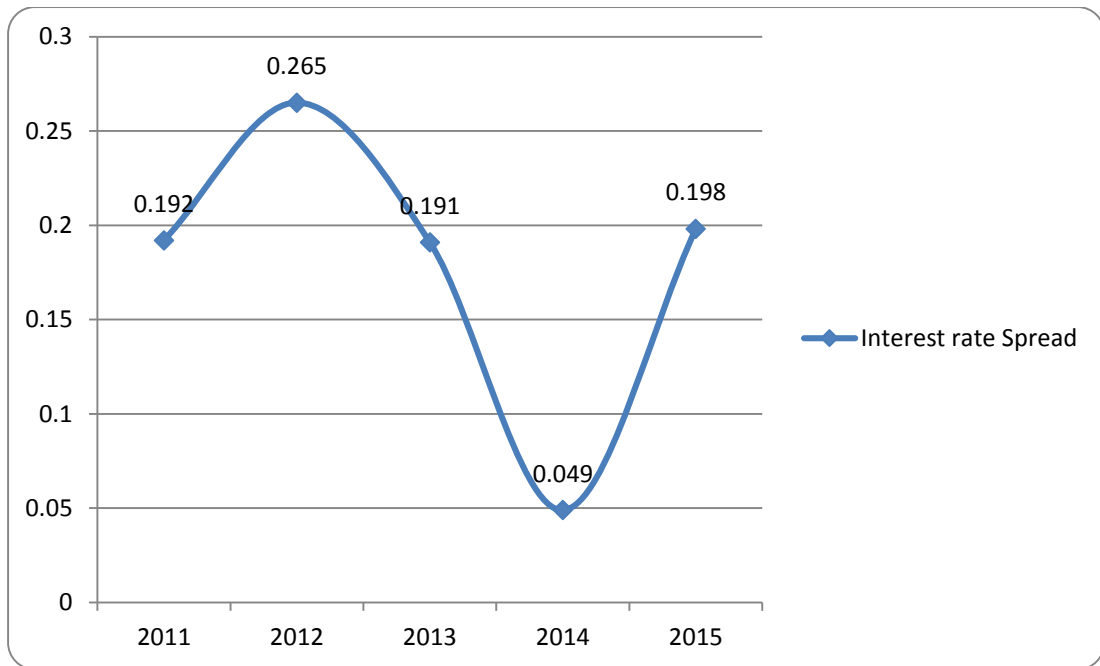


Figure 4.2.1: Interest Rates Spread Trend

4.2.2 Annual Average Inflation

The study further sought to establish Annual Average Inflation rate of Kenya. The computations results of the annual average inflation within the period (2011-2015) of the study are as highlighted in Table 4. 2. 2 here below.

Table 4.2.2: Annual Average Inflation

Inflation	2011	2012	2013	2014	2015
Mean	7.99	14.28	5.56	6.81	6.54
Standard Deviation	0.00	0.00	0.00	0.00	0.00
Maximum	7.99	14.28	5.56	6.81	6.54
Minimum	7.99	14.28	5.56	6.81	6.54

Source: Research Findings (2016).

The study established fluctuations in Kenya’s inflation rate over the study period (2011-2015). The findings revealed that inflation rate ranged between a high inflationary pressure

of 14.28% in the year 2012 and a low inflationary pressure of 5.56% in the year 2013. High inflationary pressure of the year 2012 can be attributed to the high global fuel prices following the Arab uprisings in the Middle East starting 2011. The low inflation witnessed between the year 2013 and 2015 is attributed to the stringent monetary policies put in place by the government to control the cost of living. The trend of Kenya's inflation rate during the study period is as shown in Figure 4.2.2.

Table 4.2.2: Annual Average Inflation

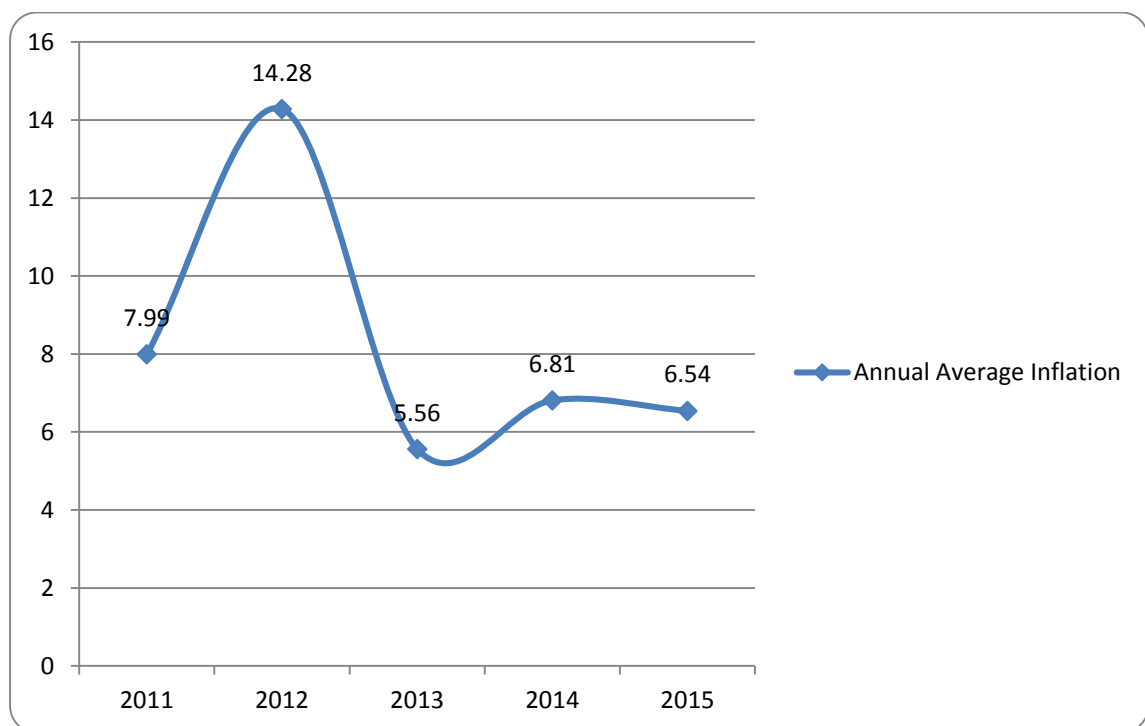


Figure 4.2.2: Average Annual Inflation

4.2.3 Operating Cost

Further, the study sought to evaluate the Operating Costs of Deposit Taking Microfinance (DTM) institutions in Kenya. The study results are as shown in Table 4.2.3.

Table 4.2.3: Operating Cost

Operating Cost	2011	2012	2013	2014	2015
Mean	1.40	0.93	0.93	0.84	0.91
Standard deviation	0.61	0.29	0.18	0.11	0.14
Maximum	2.05	1.47	1.16	0.96	1.17
Minimum	0.78	0.73	0.76	0.69	0.79

Source: Research Findings (2016).

From the study results obtained above, it is indicated that there was a steady decrease in operating costs among Deposit Taking Microfinance (DTM) institutions in Kenya over the period (2011-2014). The highest operating cost (M= 1.40, SD= 0.61) was recorded in the year 2011 while the lowest (M= 0.84, SD= 0.11) was recorded in the year 2014. The trend of operating cost is as shown in Figure 4.2.3.

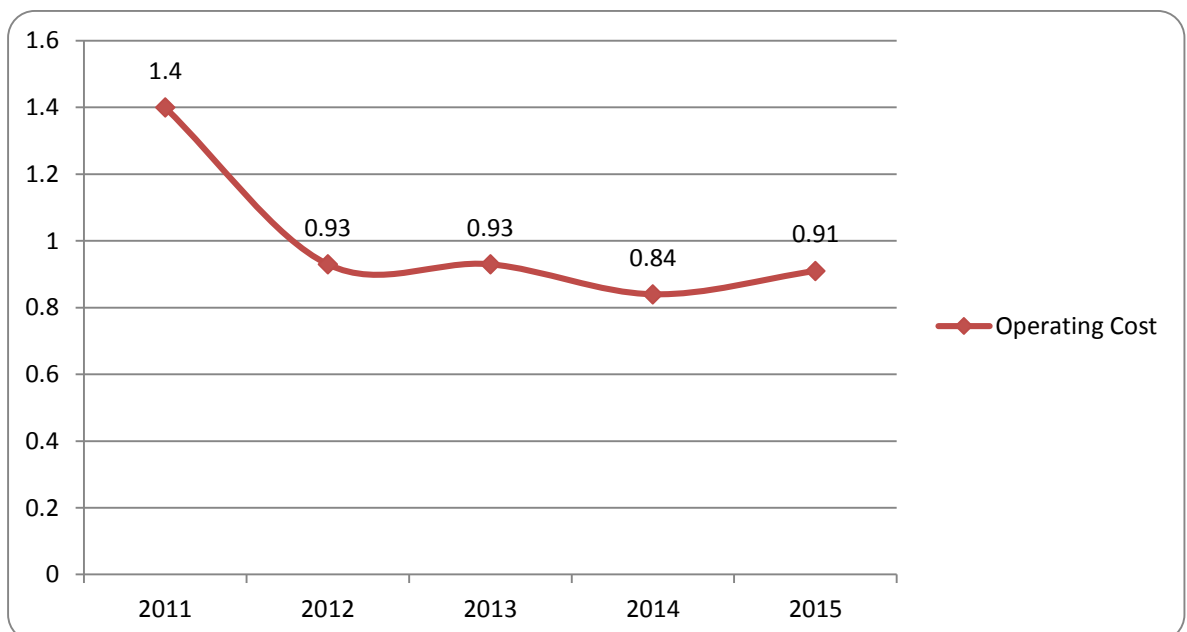


Figure 4.2.3: Operating Cost Trend

4.2.4 Credit Loss Provisions

The study also sought to establish Credit Loss Provisions among Deposit Taking Microfinance (DTM) institutions in Kenya. The findings of the data analysis are as shown in Table 4.2.4.

Table 4.2.4: Credit Loss Provisions

Credit Loss Provisions	2011	2012	2013	2014	2015
Mean	0.023	0.034	0.009	0.018	0.022
Standard Deviation	0.032	0.048	0.007	0.022	0.020
Maximum	0.063	0.131	0.020	0.062	0.058
Minimum	-0.020	0.003	-0.002	0.002	0.003

Source: Research Findings (2016).

The results of the study revealed fluctuations of the credit loss provisions over the study period. The highest (M= 0.034, SD= 0.048) credit loss provisions were recorded by Deposit Taking Microfinance institutions in the year 2012. The lowest (M= 0.009, SD= 0.007) credit loss provisions were recorded in the year 2013. The trend of credit loss provisions is as shown in Figure 4.2.4.

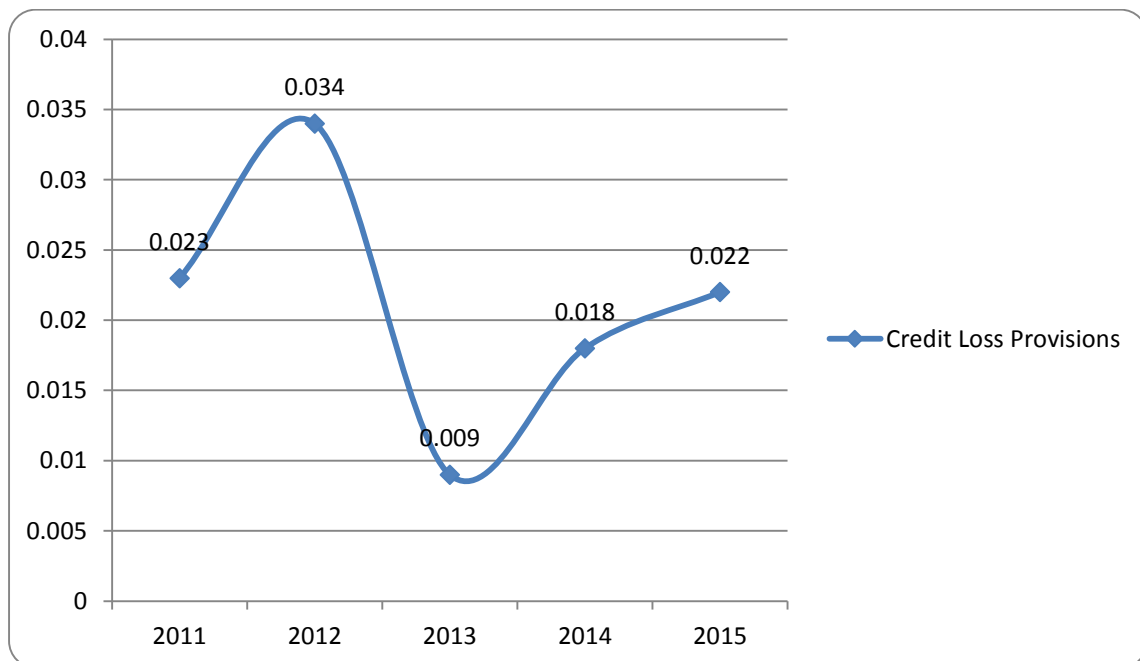


Figure 4.2.4: Credit Loss provisions trend

4.2.5 Return on Average Assets

The study lastly sought to establish the Return on Average Assets Deposit Taking Microfinance institutions in Kenya. The table 4.2.4 below shows the study results on the Average return on Assets for the period (2011-2015);

Table 4.2.5: Return on Average Assets

ROAA	2011	2012	2013	2014	2015
Mean	-0.040	-0.001	0.005	0.054	-0.008
Std. Deviation	0.066	0.024	0.023	0.099	0.166
Maximum	0.018	0.023	0.032	0.212	0.232
Minimum	-0.136	-0.041	-0.026	-0.045	-0.290

Source: Research Findings (2016).

From the study data analysis, the study indicated that there is a steady growth in ROAA from (M= -0.04, SD= 0.066) in 2011 to (M= 0.054, SD= 0.099) in 2014 before dropping to a low of (M= -0.008, SD= 0.166). This implies that the financial performance of the DTM Institutions in Kenya had been improving for the better part of the study period. Over the same period, operating costs of the firms was also found to decrease.

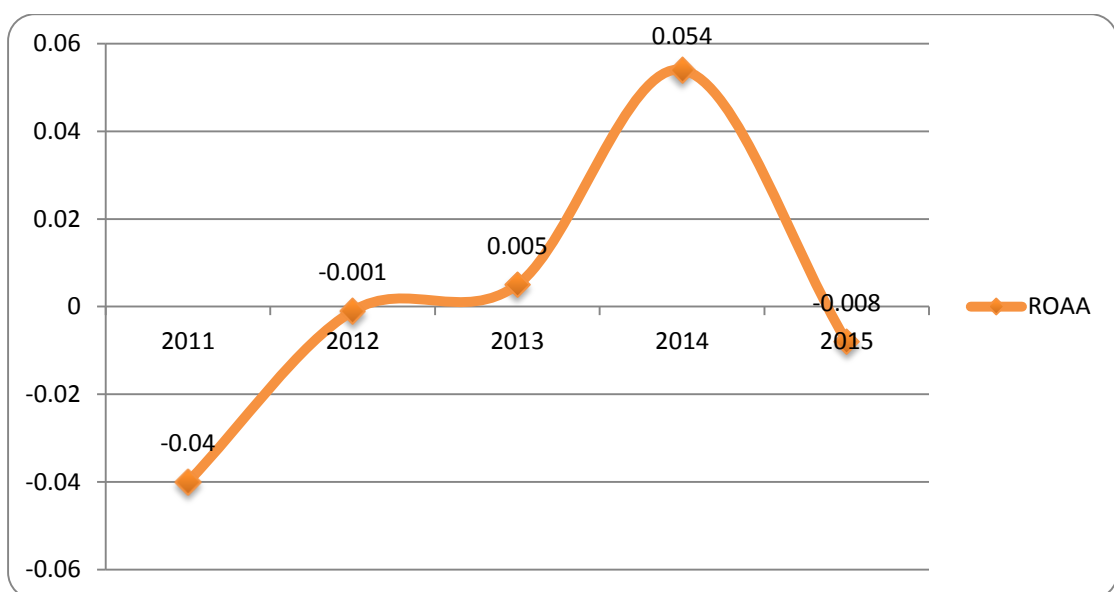


Figure 4.2.5: Return on Average Assets

4.3 Inferential Statistics

The research sought to establish the determinants of the interest rates spread in DTM institutions in Kenya. Credit Loss Provisions, Operating Cost, Inflation Rate and Return on Average Asset were identified as the determinants. Interest Rate Spread was used as the dependent variable and it was regressed against its determinant variables. Conducting of regression analysis was done using SPSS Version 21. The discussion and presentation below entails the results obtained.

4.3.1 Model Summary

The model summary shown in table 4.3.1 below gives details of the general findings of the study.

Table 4.3.1 the Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.578 ^a	.334	.228	.113181
a. Predictors: (Constant), Credit Loss Provisions, Operating Cost, Inflation Rate, Return on Average Asset				

Source: Research Findings (2016).

The research findings indicated that there was a strong relationship ($R = 0.578$) between Interest Rate Spread and the determinants (Credit Loss Provisions, Operating Cost, Inflation Rate and Return on Average Asset). The adjusted R-Square value of 0.228 revealed that 22.8% of the total variance in the Interest Rate Spread of the DTMs can be attributed to the determinants. The hypothesis (H_0) that there is no relationship between interest rate spreads and its determinant variables is hereby rejected and the alternate hypotheses (H_1) accepted.

4.3.2 Coefficients of Determination

Regression co-efficient indicate the direction of the relationship between the dependent variable and the independent variables. The results of this study are as shown in Table 4.3.2.

Table 4.3.2: Coefficients of Determination

Model	Unstandardized Coefficients		Standardized Coefficients	t	P-Value/Sig.
	B	Std. Error	Beta		
(Constant)	.064	.149		.432	.670
Inflation Rate	.177	.152	.197	1.163	.256
Return on Average Asset	-.190	.276	-.134	-.687	.498
Operating Cost	.088	.068	.249	1.294	.208
Credit Loss Provisions	2.142	.803	.470	2.668	.013
a. Dependent Variable: Interest Rate Spread					

Source: Research Findings (2016).

At 95% confidence level, the Credit Loss Provisions was the only variable that produced statistically significant values (high t-value i.e. t=2.668 and p-values less than 0.05 i.e. 0.013). Inflation rate (t= 1.163, p-value= 0.256), Return on Average Asset (t= -0.687, p-value= 0.498) and Operating Cost (t= 1.294, p-value= 0.208) produced statistically insignificant results. However, only Return on Average Asset was found to negatively affect Interest Rate Spread.

From the above analysis in table 4.3.2, the following regression equation was established;

$$Y = 0.064 + 0.177X_1 - 0.190X_2 + 0.088X_3 + 2.142X_4$$

Where:

Y= Interest Rates Spread

X1= Inflation

X2= Return on Average Assets

X3= Operating Cost

X4= Credit Loss Provision

The constant which is 0.064 implies that if all the determinant variables were rated zero, Interest Rate Spread of the DTM institutions in Kenya would be 0.064. A unit increase in Inflation Rate, Operating Cost and Credit Loss Provisions would lead to increase in Interest Rate Spread by 17.7%, 8.8% and 214.2% respectively. A unit increase in Return on Average Asset lead to a decrease in Interest Rate Spread by 19%. The assumption of this study was that the stochastic error term estimate was zero.

These findings support existing literature. According to Hanson and Rocha (1986), high inflation rates are the main cause of the high interest rates spread in Jamaica. Hawtrey and Liang (2008) also observe that existence of high interest rates spread among the banks in Jamaica is attributed to the high business execution costs incurred. Aregu (2014) on addition asserts that high profitable banks have the power to maintain lower spreads. This is because they have the muscle and capital to mobilize for cheaper deposits and charge low interest rates on their credit facilities to attract more borrowers. This implies that banks with adequate return on asset are less sensitive towards interest income thus they are more likely to charge low lending and high deposit rate in order to attract new customers and take competitive advantage.

4.3.3 Analysis of Variance (ANOVA)

ANOVA statistics was used to help further verify goodness of fit of the model and reliability of the model. These results are highlighted in the Table 4.3.3 below;

Table 4.3.3: ANOVA^b (Analysis of Variance)

ANOVA ^b						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.161	4	.040	3.137	.032 ^a
	Residual	.320	25	.013		
	Total	.481	29			
a. Predictors: (Constant), Credit Loss Provisions, Operating Cost, Inflation Rate, Return on Average Asset						
b. Dependent Variable: Interest Rate Spread						

Source: Research Findings (2016).

From the ANOVA statistics results shown above, the study established that the regression model was significant owing to F-test value of 3.137 at significance level of 0.032 ($p < .05$) which indicates that the regression model is ideal for predicting how credit loss provisions, operating cost, inflation rate and return on average asset affects Interest Rate Spread. Again, this is as such because the significance level was less than the recommended value of 5%.

4.4 Interpretation of the Findings

The objective of the study was to establish the determinants of the interest rates spread in DTM institutions in Kenya. Interest Rate Spread was used as the dependent variable while the determinant variables were credit loss provisions, operating cost, inflation rate and return on average asset. The results from the study indicated an existence of a strong relationship

($R= 0.578$) between Interest Rate Spread and the determinants (credit loss provisions, operating cost, inflation rate and return on average asset). The adjusted R-Square in the study revealed that 22.8% of the changes in Interest Rate Spread of the DTM institutions in Kenya can be explained by credit loss provisions, operating cost and inflation rate. According to ANOVA statistics, it was revealed that the regression model had a significance level of 0.032 indicating that the model had goodness of fit and was therefore reliable to predict Interest rate Spread.

The study also established that credit loss provisions, operating cost and inflation rate affects Interest Rate Spread of the DTM institutions positively while return on average asset had a negative effect on the Interest Rate Spread. Notable from the study is that only credit loss provisions had a statistically significant positive effect on Interest Rate Spread. These findings support existing literature such as those of Hanson and Rocha (1986), Grenade (2007), Romero (2011), Were and Wambua (2013), Hawtrey and Liang (2008) and Aregu (2014).

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents summary of the research findings, conclusions, recommendations, limitations of the study and suggestions for the further study. The determinants of the IRS analyzed included Inflation, return on average Assets, Operating Cost and the credit loss provisions. The objective of the study was to investigate the determinants of Interest rates spread.

5.2 Summary

The objective of the research was to establish the determinants of the interest rates spread in DTM institutions in Kenya. Interest Rate Spread was used as the dependent variable while the determinant variables were credit loss provisions, operating cost, inflation rate and return on average asset. Descriptive statistics was used to analyze the secondary data. Regression analysis was used to test the effect of various determinants on interest rates spreads of Deposit Taking Microfinance (DTM) institutions in Kenya. ANOVA analysis was used to test the Reliability and goodness of fit of the regression model.

From the study results, there is a strong relationship ($R= 0.578$) between Interest Rate Spread and the determinants (credit loss provisions, operating cost, inflation rate and return on average asset). From the R-Square in the study, it was established that only 22.8% of the changes in Interest Rate Spread of the DTM institutions in Kenya can be explained by credit loss provisions, operating cost and inflation rate. The study also established that credit loss provisions, operating cost and inflation rate affects Interest Rate Spread of the DTM institutions positively while return on average asset had a negative effect on the IRS. It was noted that only credit loss provisions had a statistically significant effect on Interest Rate Spread. Additionally, the ANOVA statistics produced a significance level of 0.032 of the

regression model used which indicated that the model had goodness of fit and was therefore reliable.

5.3 Conclusion

From the study findings, it can be concluded that the determinants of Interest Rate Spread are credit loss provisions, operating cost, inflation rate and return on average asset. The study also concludes that credit loss provisions, operating cost and inflation rate affects Interest Rate Spread of the DTM institutions positively but only credit loss provisions has a significant effect. Return on average asset has a negative but insignificant effect on the Interest Rate Spread.

This findings are consistent to the following various empirical studies. Hanson and Rocha (1986) did a suggestion that, high inflation rates are the main cause of the high interest rates spread. Hawtrey and Liang (2008) also observed that existence of high interest rates spread among the banks in Jamaica is attributed to the high business execution costs incurred. Romero (2011) established that the cost play a major role in determination of the interest rates spread charged by the banks. Aregu (2014) asserts that high profitable banks have the power to maintain lower spreads. This is because they have the muscle and capital to mobilize for cheaper deposits and charge low interest rates on their credit facilities to attract more borrowers. This implies that banks with adequate return on asset are less sensitive towards interest income thus they are more likely to charge low lending and high deposit rate. Credit loss provision is used as an indicator of credit risk as measured from by non-performing loans to the total loans by Were and Wambua (2013). Increase in Loans losses provision implies a higher cost resulting from the bad debt write offs. Since Banks tend to exhibit risk-averse behavior, it is therefore probable that the banks that are facing higher credit risk are likely to pass the risk premium to the borrowers, leading to higher spreads. Therefore, the higher the risk, the higher the pricing of loans and advances to compensate for

the likely loans losses (Were and Wambua, 2013). Further, Grenade (2007) from the research on the factors affecting the commercial banks interest rate spreads deduced that Operating costs and provision for loans losses among other factors were key determinants of the interest rates spreads among the commercial banks.

5.4 Recommendations for Policy and Practice

The study established that increase in credit loss provisions, operating cost and inflation rate leads to increase in Interest Rate Spread. The study recommends that the DTMs should enhance their credit policy on loans appraisal and risk profiling of their borrowers in order to reduce their IRS which will attract more potential borrowers. This is because the DTMs charge higher IRS to compensate for likely default (loan losses). With enhanced credit appraisal, the default rate is reduced as only creditworthy borrowers are granted loans facilities. Reduced default rate reduces non-performing loans, the credit loss provisions and consequently charging lower IRS.

Also, the study recommends that the management of the Deposit Taking Microfinance institutions should aim at reducing operating costs as a way of reducing Interest Rate Spread. The study also recommends that the government of Kenya should come up with fiscal policies aimed at cushioning DTMs from high inflationary pressure.

The DTMs should maintain adequate return on assets (ROA) which makes them less sensitive towards interest income thus enabling them to charge low lending rates and give high deposit rate which will create low IRS in order to attract new customers and increase their competitive advantage.

The study revealed that, only one independent variable (i.e. Credit loss Provisions) had significant influence on the IRS of the DTMs. Therefore, the study recommends other factors that influence IRS of DTMs be used to ensure DTMs set their optimal IRS in order to improve their performance.

5.5 Limitations of the Study

The study mainly dependent on the secondary data available at the Central Bank of Kenya that had been compiled and submitted to the CBK by the DTMs. The researcher had no means to verify the validity of the data hence it was assumed to be accurate. This implies that the accuracy of the study findings is dependent on the data validity that was available for the use in the research.

The study relied on the regression method in data analysis which may have its own weaknesses compared to other methods. This may have limited the applicability of the results from the study.

The study period of five years (from 2011 to 2015) was chosen due to limited availability of the data on DTMs from the CBK. This is considering the CBK started licensing the DTMs in the year 2010 hence their full annual reports were only available from the year 2011 to 2015. Additionally, considering the DTMs do not submit to CBK nor publish their Quarterly reports was also another limiting factor to the study. Such short period was insufficient for one to draw inferences in the long run.

Finally, the researcher was not able to identify all the possible variables that determine the interest rates spread in deposit taking Microfinance institutions in Kenya. It is possible lack of inclusion of all the variables may have an impact on the findings and its interpretations.

5.6 Suggestions for Further Studies

The study relied on secondary data available on the DTMs in Kenya. This secondary data did capture the quantitative information only. It is therefore important for the future studies to be done which will entail usage of primary data. This will be helpful to use primary data because it incorporates the qualitative information which cannot be obtained in the secondary data contained in the financial statements of the DTMs.

The study findings revealed that only 22.8% of the changes in Interest Rate Spread of the DTM institutions in Kenya can be explained by credit loss provisions, operating cost, inflation rate and return on average asset. In future, researchers should investigate the other determinants of interest rates spread among DTM institutions in Kenya such as Real GDP, Deposit Reserve requirements by the CBK and Inter banks' Lending rates.

The study also recommends that further researches be done which will take a comprehensive view of the determinants of interest rates Spread in the other subsectors found in the financial sector of the economy such as SACCOs, the commercial banks and even MFIs (Microfinance institutions) in general. The results obtainable from these studies will be beneficial in helping to compare the factors affecting IRS across the subsectors.

Further study is also important to establish the impact the information capital has on the IRS. This is because various analysts have argued that, credit reference bureau licensing is construed to help in lowering the spreads. A research in this topic would help establish the truth of the impact of the CRB licensing on the interest rates spread.

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APPENDICES

Appendix I: List of the Registered DTMs in Kenya.

1. Faulu Kenya DTM Limited
2. Kenya Women Finance Trust DTM Limited
3. SMEP Deposit Taking Microfinance Limited
4. Remu DTM Limited
5. Rafiki Deposit Taking Microfinance
6. Century Deposit Taking Microfinance Limited
7. SUMAC DTM Limited
8. UWEZO Deposit Taking Microfinance Limited
9. U&I Deposit Taking Microfinance Limited
10. Daraja Deposit Taking Microfinance Limited
11. Choice Deposit Taking Microfinance Limited
12. Caritas Deposit Taking Microfinance Limited

Source: Central Bank of Kenya (2016)

Appendix II: Panel Data

DTM	Year	IRS	Annual Average	Operating Cost	Credit Loss Provisions	ROAA
Kenya Women Microfinance	2011	0.284	7.99	0.938	-0.0200	0.017727
	2012	0.289	14.28	0.747	0.0030	0.008529
	2013	0.292	5.56	0.756	0.0073	0.018181
	2014	0.233	6.81	0.761	0.0123	0.212209
	2015	0.237	6.54	0.791	0.0130	0.231837
Faulu Microfinance	2011	0.285	7.99	0.826	0.0090	0.005252
	2012	0.201	14.28	0.791	0.0077	0.017939
	2013	0.143	5.56	0.807	0.0080	0.031767
	2014	0.117	6.81	0.686	0.0091	0.137781
	2015	0.105	6.54	0.855	0.0100	0.004541
Smep Microfinance	2011	0.246	7.99	0.777	0.0367	0.013013
	2012	0.317	14.28	0.731	0.0220	0.023181
	2013	0.252	5.56	0.849	0.0202	0.01916
	2014	0.195	6.81	0.956	0.0623	-0.04544
	2015	0.234	6.54	0.940	0.0026	-0.00039
Uwezo Microfinance Bank	2011	0.188	7.99	1.889	0.0625	-0.13559
	2012	0.488	14.28	1.063	0.1306	-0.01364
	2013	0.207	5.56	1.159	-0.0019	-0.02563
	2014	-0.195	6.81	0.941	0.0016	0.006244
	2015	0.333	6.54	0.854	0.0581	0.000883
Remu Microfinance Bank	2011	0.122	7.99	1.929	0.0488	-0.10484
	2012	0.138	14.28	1.475	0.0177	-0.04128
	2013	0.113	5.56	1.163	0.0064	-0.01765
	2014	-0.025	6.81	0.907	0.0097	0.007604
	2015	0.127	6.54	1.174	0.0290	-0.28992
Rafiki Microfinance Bank	2011	0.028	7.99	2.050	0.0000	-0.03401
	2012	0.156	14.28	0.793	0.0239	-0.00079
	2013	0.138	5.56	0.825	0.0130	0.002531
	2014	-0.033	6.81	0.815	0.0111	0.003515
	2015	0.150	6.54	0.825	0.0193	0.003752

Source: Central Bank of Kenya (2016)