

**THE EFFECT OF LENDING RATE ON THE FINANCIAL PERFORMANCE  
OF DEPOSIT TAKING MICRO FINANCE INSTITUTIONS IN KENYA**

**BY**

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## DECLARATION

### Declaration by student

I, the undersigned declare that this is my original work and it has never been presented before to any institution or examination board for any academic credit.

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### Declaration by supervisor

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## **DEDICATION**

I hereby, dedicate this project and course work at the University of Nairobi to the Almighty God who has granted me the strength and provided the necessary, financial resources to undertake this noble course throughout my duration at the University of Nairobi.

## **ACKNOWLEDGEMENT**

I take this opportunity to thank the Almighty God for being with me till this far, it was a long journey which needed strength and guidance, I am also greatly indebted to my supervisor the Senior Lecturer Dr. Cyrus Iraya for His professional guidance, advice, patience while working on this research, my profound appreciation to Him.

A special feeling of gratitude to my loving parents, Mr. James Were and the late mother Florence Were. They have played their parental role to ensure that I got the basic education, which I could not learn from school, to my ever loving and caring family members for being great source of encouragement for me to go back to school and undertake a postgraduate course.

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## **ABBREVIATIONS AND ACRONYMS**

**AMFIS**.....Association of Microfinance Institutions in Kenya

**LR**.....Lending Rate

**MFI**.....Microfinance Institutions

**MFS**.....Microfinance Sector

**SACCO**.....Savings and Credit Cooperative Organization

**CBK**.....Central Bank of Kenya

**DTMBs**..... Deposit Taking Microfinance Banks

**ANOVA**..... Analysis of the Variance

## **ABSTRACT**

The study mainly focused on the relationship between the lending rates and financial performance of the deposit taking microfinance institutions in Kenya. This has been noted that Microfinance institutions had increased from 2011 to May 2016. The main objective of this study was the effect of the lending rate on the financial performance of deposit taking microfinance institutions in Kenya. In data collection and data, analysis the data collection form was used to analysis the ten microfinance institutions out of the thirteen in the CBK registered list as at 21<sup>st</sup> May 2016. The Microfinance data collection form; were studied as from 2011 to 2016 that is the reference period the research. From the correlation matrix, lending interest rate ( $p=.571$ ) was found to be significant in explaining DTMs financial performance (ROA) better than management efficiency ( $p=.262$ ) and operating cost efficiency ( $p=.490$ ) all the variables led to positive financial performance. From the overview of this study, it is apparent that more light needs to be shed in this area of research by widening the scope of the study to concentrate on microfinance institutions in Kenya. It is essential that the gaps to be filled hence the study set to answer the following question. The study used secondary data from the banking reports and the individual deposit taking MFIS. In summary DTMS, ability to improve informal irregularities between borrowers and lender will highly depend on the three variables that formed the core of this analysis that is better lending rate efficient management and prudent allocation of resources to minimize the cost of resources.

# CHAPTER ONE: INTRODUCTION

## 1.1 Background of the Study

The background of the study indicated that microfinance sector had a wide range of people borrowing and saving at the same time, this was one of the formal sources of financial institution. Some of the services offered on informal financial services are; loan sharks, saving group and community members. In microfinance, many people are opting for it and it is at 38% of Kenya compared to other forms of credit access. In addition to this, there are 35% who do not appreciate informal financial services offered (Microfinance Act, 2006).

Here in Kenya we have different types of microfinance services that offered in financial institutions, thus consumers have a variety of choices to pick. The Non-governmental organizations and Microfinance Institutions were the only sources for Microfinance. Currently SACCOs and Commercial banks are providing microfinance services to Kenyans Sauder and Schumacher (2000). According to Kenya Vision (2030), it is the mandate of Central Bank of Kenya to ensure that microfinance industry all goals and purposes fulfilled. These have helped many families that are in need of accessing financial services that have low interest rates. This goal helps to fulfil Kenya Vision 2030 to improve the living standard of Kenyan citizen by 2030.

### 1.1.1 Lending Rates

Lending rate is the amount that a bank charges on money that it lends. Most interest rate charged by banks is given short term loan to creditworthy customers. Prime rate is a guide for computing interest rates for other borrowers, Brown. W. M (1992). According to Brown. W. M (1992). defined base lending rate as minimal interest rate on which financial institutions base the rates use for lending. The Federal Reserve is where the credit facility which financial

institution goes borrowing funds. In reserve market, the loan priced at the discount rate, which are well structured. All this ensure that liquidity reduced, and stability of financial markets restored at the banks. This will alleviate potential crisis in financial institutions.

In Kenya, lending rate is determined by CBK through its monetary policy committee and the decision to increase or decrease the lending rate depends on inflation rate. Increases on credit borrowing rate affected by interest rate charged by commercial bank. According to Kiva (2015), microfinance generates its revenue though lending credit, however some microfinance institutions are not dependent on Central Bank of Kenya and commercial banks, which may react differently.

### **1.1.2 Financial Performance**

The financial performance is described as act ensuring that all financial activity is performed to fulfil financial goals. It measures two distinct monetary operations and the company's policies by getting the overall financial success of the firm over a given period Forster and Clark, (2010). MFIS usually earn its financial service from loans, which has interest fees, penalties and commissions. It also has other form of income such as from financial assets, investment income. In addition to that, expenses are incurred from operating expenses and from loan defaulters. Each MFIS assets are match up to from revenue and expense in each firm (MIX, 2005). Any financial management requires analysis of financial performance to be carried out periodically. This useful information about the financial performance of an MFIS retrieved from performance indicators and financial data. The achievement of MFIS is evident by financial performance, portfolio quality, efficiency and productivity. (Forster and Clark ,2010)

### **1.1.3 Lending Rates and Financial Performance**

According to Fallah (2012), indicated that FRB has three credit rates that charged namely the secondary, seasonal and primary credit. The primary credit is where the MFIS will charge smaller percentage rate in short term. In a situation where the MFIS have not qualified for primary credit then they charged at a short term, called secondary credit. Seasonal credit for rate on discount is normally average as per the market lending rate. While for secondary credit, the rate usually highly charged in construct to primary on the market. All three lending interest are same across reserve banks and at times lowered by the Federal Reserve and it's called discount window, which many financial institutions takes advantage (Roley & Troll, 1984)

### **1.1.4 Kenya Microfinance Institutions**

Most of MFIs were formed by the colonial ruler's way back before we got our independence in Kenya. They never provided financial credit services to black Africans, the only financial credit the Black knew were Merry go rounds, which assisted Africans. These were formed many at rural area and clan levels to assist the African People. The Microfinance business is mandated with the task of receiving money, lending it and earning interest rates to the money (Microfinance Act, 2006)

In Africa continent Kenya has the largest borrower base and is the largest savings and credit cooperative (MIX and CGAP 2010). In addition to that it is country world leading position in mobile banking which has been driving force in financial inclusion (Andrianaivo and Kpodar 2011). Most microfinance industry has a lot of difficulties as funding becomes a problem. More critique focuses on; bolder claims, policymakers and consultants than focusing on practitioners (CSFI, 2011).

## 1.2 Research Problem

According to Napier .M. (2011) attempt to charge higher interest rate negatively affects the quality of loans at banks. These have two effects; incentive and adverse selection effects. The increase project of interest rates reduces the return and decreases project profitability. These makes more firms go for risky project because of the interest rate rise. This implies that MFIs will practice credit rationing and financial institution can maximize profits depending on interest rate to expect larger profit peak Gibson (1992).

Mang'eli (2012) in his study indicated that many banks would tend to hike loans when the CBK rates are higher so that they can yield more profits. Regulation for interest rate has a lot of significance on financial institutions, because it determines the interest rate on banks and it also assist to reduce hazard incidental. On credit risk, management interest rates benchmarked against NPLs since value of banks interest rate spread across. Some banks are making losses while MFIs are making high interest since they are charging higher lending rates, this is as a result of Bank been controlled by CBK.

According to Kagwe (2008) his study states that microfinance has the ability to reach and serve clients more and that it meets their cost. Capitals, is well to suite can attract and serve largely excluded financially population in country Kenya. Njoroge (2013) indicates that linear regression model in forecasting can be use to valuate financial performance of the firms at different level of interest rate. Albeit interest rate on financial performance was not significant, other factors need to check to improve the financial performance of the firms.

Wesheng et al. (2003), during any change on domestic interest rate would have less effect in the edge during the study time. Ashim & Ranjula (2013) found that financial performance

would be highly affected by loan delivery ways. Each lender shows a higher profitability but it depends with certain levels. Gardner et al., (2005) found that profitability of banks determined by interest rate charged. It concluded also that when the interest rate is higher it is very difficult to eliminate them since it remained a macroeconomic problem. Different group in Kenya academicians and economic analyst have observed that when the interest rates are higher it makes the development of a country to be slower. The study focused on the effect of central bank base lending rates in MFIs in Kenya.

### **1.3 Research Objective**

The objective of this study was to investigate the effect of lending rates on financial performance of deposit taking microfinance institutions in Kenya.

### **1.4 Value of the Study**

This research has the following practical value: the Kenya Government can use the published financial statements to plan on tax revenue for the MFIS. The management of MFIS were interested in the feedback of the analysis since it was their key area of interest. The most important part is valuation of management on the effectiveness and challenges of interest rate in their institution. It is also important for MFIS to do comparison with other MFIS in other country.

MFIS managers will better placed in understanding rate consequence on MFIS performance. Given that most of the MFIS revenue can be derived from loans advanced to customers, it will be beneficial to researcher and academicians to create a platform for other researchers intending to take on this topic.

In addition to that, the research has helped to highlight other important area for further



research study; focus can be on other variables on this subject in Kenya. Last but not list, the study can help CBK in policy formulation aimed at controlling and regulation interest rates in Kenya.

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.1 Introduction**

In this chapter the main focus is on literature review, theoretical foundation, loanable funds theory, determinant of MFIs financial performance, empirical review, conceptual framework and summary.

### **2.2 Theoretical Foundation**

This section sheds light on the theoretical foundation supported by different author's views on Central Bank Rates on financial performance and the various theories of central bank rates.

#### **2.2.1 Loanable Funds Theory**

In 1930s, loanable funds theory formulated by British economist called Dennis Robertson and Swedish economist Bertil Ohlin. The theory found that supply of and demands for loanable funds determined by market interest rate. The study used to explain interest rate in general at particular country and used to expound on interest rates among debt securities, on which each country varies (Robertson & Ohlin 1934)

According to, Ohlin (op. Cit., p 222), the rate of interest usually planned by investment and savings. Therefore, it indicates supply and demand is determined by the rate of interest in which is the price of credit. It is therefore the duty of banking system to give credit and thus this might affect the interest level.

### **2.2.2 Classical Theory**

In this theory it indicates that interest is rewarded as capital; for productivity use. Marginal productivity is equal to capital, thus physical capital can be obtained by monetary capital on which the yearly rate of return is taken per capital when invested on the assets. Keynes, on the theory stated that interest rate is also the saving investment. This was further presented by economist Marshall, Pigou, Taussig and others. The theory holds the state of equilibrium theory that the interest rate is experienced where demand for capital equals supply. The demand schedule stipulates that demand on capital reflects the investment. The interest of rate is determined by savings and investment. It is also noted that when the mid point intercept between demand and savings schedule the interest rate is at equilibrium state where total of investment and savings are equal.

In real savings on the real income part left unconsumed usually provides investment resources. Factory plants, tools and equipment are capital assets called reinvestment. In relation to this study classical economists believe that under the above circumstances the interest rate will fall, thus will cause investor to demand more on savings. When savings rises it leads to raise on investments of the interest rate reductions. This leads to a normal level GDP in the economy. GDP is always in a natural state level when interest rate and prices self adjust to normal as explained in classical theory. The flexibility of interest rate will retain the money market in an equilibrium state that maintains real GDP from falling below natural state. (Keynes & Moggridge, 1978)

### **2.2.3 Keynesian Interest Theory**

John Maynard Keynes developed Keynesian interest theory book. It demands for money depends on interest rate foregone. Bond represents stocks and liquid assets in general

including also government bond. In Keynes, argument interest rate used as one form of rewarding because some might hoards for speculations to earn or receive interest. In that content, Keynes instead rewards savings for parting with liquidity. In addition to that, Keynes said money is the liquid asset thus the more quickly the asset converted into money the more liquid it is (Keynes 1936)

In a paradox of Thrift people will save more individually and there is no spending thus resulting in everyone having less money. This will result to the total saving going down, Keynes argued that prices and wages were sticky and could not change quickly. Given that, the economy of self-correct need to stimulate it the monetary policy is not enough. This implies that once the money injected in the economy putting more will affect people liquidity trap. Fiscal policy needed government spending, taxes be lowered thus leads to budget deficit. The budget deficit be experienced during recessions and budget surplus taxes expansions raise and the reduce government spending equalize business cycle on an upward trend. This expansionary policy had a multiplier effect at long run (John Maynard Keynes, 1936)

## **2.3 Determinants of MFIs financial performance**

The performance of an MFIS is influenced by various factors such as lending interest rates, leverage, size of the firm, economic growth and risk.

### **2.3.1 Risk and growth**

MFIs financial performance largely affected by risk and growth been the keys factors. The MFIs result determined by the market value and on which it can change drastically due to risk levels. On other hand, it performs better when there is growth in economy; and predicts

future performance on profits increase (Bekan, 2011).

Any change on market value usually results in risk level going up thus affecting the firm's results. In addition to this moral hazard can lead to lenders not been able to justify return of the project or any action made by the borrower. In the act the borrower are have advantage of limited liability, which allow them not to pay back more cash. The advantage of this the borrowers are not required to have collateral (Bekan, 2011)

### **2.3.2 Lending Interest**

A higher percentage of revenues generated by MFIS come from interest income on lending. This means MFIS with quality loan portfolios tend to have a growth. Many investors prefer investing in MFIS with a growth since assured return on their investment (Fernando, 2006). According to Saunder (1995) indicated that lending interest is widely connected to present and future value on money would greatly affected by economic activities. These are because of goods and service day-to-day exchange.

Many MFIS offers loans that are known best to the population in a country. Other small investors prefer informal lenders form which is usually on short time. Many families who are not able go for these loans (Armendariz and Morduch, 2005). MFIs offers low interest rate loans to borrowers and which attract many families to take up registration. The amounts of loans are accessible by many and readily available. In (MIX) its indicate that the lending rate of MFIs as from 2000-2008 was at 42% in Africa and America Latin. However in Asia 35% were witnessed Moser (2013).

### **2.4 Empirical review**

(Moti, 2012) indicates that Microfinance Institutions has a reliable system of credit that

manages and assess all the analysis required. The study focused on key issues like appraisal of client, credit measures and policies in the overall performance of the MFIs. All the policy on credit had a higher pay back effect on loans.

Mangeli (2012) in his study found Regulation interest rate has a lot of significance on financial institutions, because it determines the interest rate on banks and it also assist to reduce hazard incidental. On credit risk, management interest rates benchmarked against NPLs since value of banks interest rate spread across. Some banks are making losses while MFIs are making high interest rate spread across. Some banks are making losses while MFIs are making high interest since they are charging higher lending rates, this is as a result of Bank been controlled by CBK.

Kar and Swain (2014) investigated MFIs financial performance are due to high interest rates which enable them make profits. In a sample of 50 Microcredit firms, the study was analysed by regression analysis. The study guide microfinance while investors can use the results obtained from the research to make decisions on which institutions of the economy to invest in at different levels of interest rates.

According to Rasheed (2010) indicates that used ECM to found out the rate interest in MFIs in Nigeria. However, the study summarised by indicating that wider markets works as a unit and that the rates will be determined by the global assets that have an effect on a local assets.

Ndichu (2013) in his study focused on ROE and interest rate using a regression model. Also on the study, its independent variable was financial performance while also focuses on dependent variable as the interest rate. In his, view all the other factors, which influence

profitability enhanced to accelerate the profitability of financial performance in MFIs in Kenya.

Fallah (2012) on his research indicated that banks tend to increase their lending rate on loans when the system and business environment is not stable. Lending rate increases when the foreign exchange rate of Liberian dollar and USA dollar tend to go down wards when the margin closes of the two currencies tend to be almost steady on one another. In Liberia the CBK published a law that will regulate the interest rate on commercial banks to address the widening rate interest. By enacting this act both the lending and deposit interest rates are as 1% on reducing general and 5% on substandard provision. The CBK for Liberia indicated that it gave out US\$5, 000,000) to commercial banks at the rate of 3% for lending to business at rate of 8% per annual.

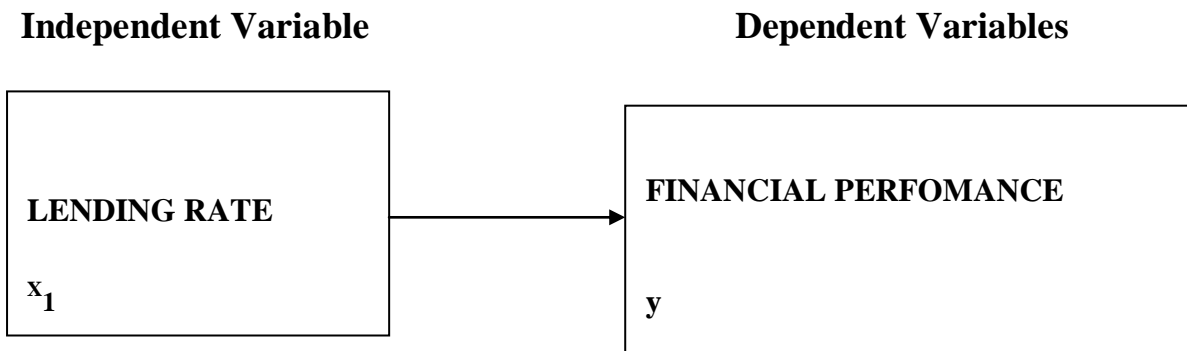
Dominic (2010) research was based on deposit taking in microfinance which tends to focus on interest and the non performing loans. The researcher in his study used regression analysis. The dependent variable was non performing loans and independent variable which was interest rate. However, the study shows positive results on both interest rate and non performing loans on MFIs in Kenya. The study also concluded that any improvement of financial performance of MFIs does not necessarily affected by increase of interest rate.

Ngumo (2012) indicates that the research target population was 33 that were at 31<sup>st</sup> December 2011 for the mortgage lending. The study used secondary data sourced from CMA library and CBK. The study concluded that mortgage advanced on the firms would lead to a high financial performance.

In their study, Garman & Grable (2012) indicates that the study focused on effects of interest rate in agricultural firms and how it's significant on financial performance. The study used secondary data on a five years trend from 2008 to 2013. The data analysis was done using regression model on which it shows inverse correlation on financial performance interest rate. When the interest rates were low most borrowers tend to borrow more money to invest.

## 2.5 Conceptual framework

**Figure 2.1: Conceptual Framework Diagram**



**Source: Author (2016)**

### 2.5.1 Financial Performance Indicators definitions

Return on equity is defined as the measure of profits that is used to calculate the amount of money the firm generates on each amount of shareholders equity. While capital adequacy is the value of capital that any given financial institution or bank hold as required by CBK Cargill and assets quality is the evaluation of examining the credit risk of a given asset. The given asset will require interest to be paid and such are loans and investment Joy. Management efficiency defined as the quantity on which the information communicates to ensure that the unit allocated time is efficient. In addition to that, liquidity management is where by assets are trade that are in form of stock or bond without changing its recent price (investinganswers, 2016).



## **2.6 Summary**

The studies main focused mainly on the relationship between Lending Rate and financial performance in the Micro Finance Institutions. 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 Micro Finance Institutions. It is thus essential that the gaps to be filled hence the study set to answer the following question; that what are the effects of lending rate on the financial performance of deposit taking on microfinance institutions in Kenya.

## **CHAPTER THREE: RESEARCH METHODOLOGY**

### **3.1 Introduction**

This chapter elaborate on research methodology; it captures the research design, data collection and data analysis. The chapter helped to fulfil the objectives of the study.

### **3.2 Research Design**

According to Mugenda and Mugenda (2003), indicates that descriptive research entails collecting data for testing hypotheses for either acceptance or rejection, in order to answer the status of the study statement. The researcher used descriptive research design to determine the reports on the status of the variables. Descriptive statistics assist in describing characteristics demography of research sample. It does not give an analysis or report to answer the objectives of the study. Rather it addresses what question hence descriptive research is perfectly fit for the research question. These study answers the topic effect of lending rate on the financial performance of deposit taking microfinance institutions in Kenya.

### **3.3 Population Census**

The population census of this study covered 10 Microfinance banks; therefore as at 21<sup>st</sup> May 2016 CBK website had 13 Microfinance banks registered.

### **3.4 Data Collection**

The study entails use of secondary data obtained from the following sources; Data on borrowing interest rates trends and monthly averages from the individual deposit taking MFIS. Annual financial statements and banking supervision reports on the deposit

considering MFIS, had obtain from the Central Bank of Kenya Website and the deposit taking MFIS themselves. The information obtained from the existing thirteen deposit taking microfinance banks only ten selected. Therefore ten DTMBs analyzed for a period of five years from 2011 to 2016.

### **3.5 Data Analysis**

The researcher used multivariate regression model in data analysis to confirm the existence of relationship between the dependant and the independent variables. However, the study also used statistical package for social sciences: SPSS version 22, it assisted in descriptive and inferential statistics analysis for data analysis.

#### **3.5.1 Analytical Model**

A multivariate regression model for this study will be  $Y = \alpha + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \epsilon$

Y=Financial Performance

$\beta_1X_1$ = Return on Equity

$\beta_2X_2$ = Capital Adequacy

$\beta_3X_3$ =Asset Quality

$\beta_4X_4$ =Management Efficiency

$\beta_5X_5$ = Liquidity Management

$\beta_i$  = Co-efficient of variable  $i$  that measures the responsiveness of a unit change in Y for a unit change in  $i$

$\epsilon$  = Error term

where;

Y = Financial performance as measured by ROA. ROA will be measured by taking a ratio of Net profit after taxes/Total assets.

$\alpha$  = the regression constant

X1 = Lending rate is a ratio of interest on the income to asset amount of asset generating that particular income.

X2 = The Return on Equity is a measure of the ratio of net income with shareholders' amount of equity.

X3 = Capital Adequacy as measured by ratio of return on assets and return on equity.

X4= Asset Quality is measured by the ratio of loan less reserves by net loans.

X5= Management Efficiency as measured by information communication quantity by in a unit on time and from what we base the method of measuring management efficiency.

X6= Liquidity management as measured by the ability to measure companies to pay debts in short term in owing its suppliers.

### **3.5.2 Test of Significance**

Y was the dependant variable financial performance,  $\beta_0$  was the regression constant or Y intercepts  $\beta_1\beta_3\dots\beta_n$  were the coefficients of the variables in regression model. The basis of the model was to help in determining the extent to which lending rate contribute to financial performance of Microfinance Institutions. Correlation used to establish whether there exists relation statistically between the variables of lending rate and financial performance to affect the performance of Microfinance Institutions in Kenya.

## CHAPTER FOUR: DATA ANALYSIS, RESULTS & DISCUSSIONS

### 4.1 Introduction

This chapter accede the findings of the study, by data analysis, results and discussions on DTMS within Kenya. The research sought to assess the performance of ten DTMs in Kenya within a five-year period; from 2011 to 2016. The data was collected on net profit after taxes, total assets, interest income, loan and advances, operating cost, net operating income, non-interest expense. To achieve the study's objective, the data obtained was analyzed through multiple linear regression analysis.

### 4.2 Descriptive Statistics

Table 4.1 summarized the statistics main variables that have been included in the model including minimum, maximum, mean, standard deviation, skewness and kurtosis.

**Table 4.1: Descriptive Statistics**

		<b>ROA-Non-Current Assets (Net Income/Total Assets) (%)</b>	<b>Lending Rate charged (%)</b>	<b>Total Operating Cost(bn)</b>	<b>Management Efficiency(Total Non-Interest Expenses in bn)</b>
N	Statistic	10	10	10	10
Min	Statistic	4.48	9.50	1.04	.196
Max	Statistic	75.60	22.60	9.20	1.700
Mean	Statistic	35.0440	18.9800	3.3760	1.02160
Std. Deviation	Statistic	25.87355	4.09031	2.43169	.534306
Skewness	Statistic	.075	-1.757	1.672	-.189
	Std. Error	.687	.687	.687	.687
Kurtosis	Statistic	-1.591	2.726	3.271	-1.008
	Std. Error	1.334	1.334	1.334	1.334

**Source: Research Finding**

The results showed that return on assets (ROA) had a mean of 35.0440 with a minimum of 4.48, a maximum of 75.60, and standard deviation of 25.87355. This depicts that all the DTMs have been making profits within the five year period, none of the DTM made loss as the values for the minimum (this represents the list profit made, and a negative value would mean a loss, but in this instance the findings indicate that the minimum had a positive value indicating a profit) was also positive.

This shown by standard deviation value higher than the mean value depicts a high variability in performance. Maximum value of 75.60 indicating that that some DTMs experienced very high profitability that almost equalled their asset value. This owes to the fact that financial sector is not capital intensive. ROA had skewness of 0.75 and kurtosis of -1.591. This depicts a positively skewed and lowly/flatly peaked distribution.

Lending interest rate had a mean of 18.9800, minimum of 9.50, maximum of 22.60 and a standard deviation value of 4.09031. This shows that on average, the DTMs charged high interest rates of 18.98%. Some DTM charged lending rates as high as 22.6% while others charged as low as 9.5%. There was less variability in lending interest rate charged from one DTM or from one period to the next given a standard deviation value of 4.0%. Lending interest rate had skewness of -1.757 and kurtosis of 2.726 this point to a negatively skewed and moderately highly peaked distribution. That is, most of the data were lower than the mean value of 18.98%.

Operating cost efficiency had a mean of 3.3760, minimum of 1.04 and maximum of 9.20. The descriptive statistics shows that on average, every shilling of income attracted Ksh3.3760 in operating costs. However, this figure was as low as Ksh1.04 or as high as Ksh9.20. This is true to the high performance of the DTMs. Standard deviation value of Ksh2.43169 show high variability in the DTMs' operating cost efficiency. Skewness of

1.672 and kurtosis of 3.271 depict positively skewed and moderately peaked distribution.

Management efficiency had a mean of 1.02160, minimum of 0.196, maximum of 1.700 and standard deviation value of 0.534306. Thus, the DTM generally incurred non-interest expense of Ksh1.02160 on every shilling invested in assets irrespective of its class. However, while some DTMs incurred as low as Ksh0.196 others incurred as high as Ksh1.700 on every shilling invested in assets. As depicted by the variance between minimum and maximum values, standard deviation value of 0.534306, which is lower than the mean show that there was low variance in management efficiency; most of the DTMs are efficient. Management efficiency had skewness of -0.189 and kurtosis of -1.008. This depicts a negatively skewed and lowly peaked distribution.

### **4.3 Pearson Correlation Analysis**

The study also carried out Pearson correlation analysis to designate the correct linear connection among dependent and independent variables; which assisted in shaping the relationship in the representation.

Trying to find which variable best explained the relationship between lending rate and financial performance as measured ROA. It also helped in deciding which variable(s) to drop from the equation given low linear relationship or multi-collinearity.

**Table 4.2: Correlation Matrix**

		<b>ROA-Net Income(Total Revenue/Tota l Expenses) in (bn</b>	<b>Lending Rate charged (%)</b>	<b>Management Efficiency (Total Non- Interest Expenses in (bn))</b>
Lending Rate charged (%)	Pearson Correlation	.204	1	-.163
	Sig. (2-tailed)	.571		.653
	N	10	10	10
Management Efficiency(Total Non-Interest Expenses in (bn))	Pearson Correlation	.392	-.163	1
	Sig. (2-tailed)	.262	.653	
	N	10	10	10
Total Operating Cost(bn)	Pearson Correlation	.248	-.076	.198
	Sig. (2-tailed)	.490	.835	.583
	N	10	10	10

**Source: Research Findings**

From the Table 4.2, we can draw a conclusion that there was optimistic significance correlation among ROA lending interest rate given correlation value (R) of 0.204 at p = 0.571. The management efficiency and operational cost efficiency also had positive significant correlation with ROA. The values of the coefficients were as follows: Management efficiency (R = 0.392; p = 0.262); and, operating cost efficiency (R = 0.248; p= 0.490).

**4.4 Linear regression analysis**

The linear regression method used for this study was the least squares method. This was used to determine the line of best fit for the model through minimizing the sum of squares of the distances from the points to the line of best fit. The regression model was of the form:

$$ROA = \alpha + \beta_1LEN + \beta_2MGT + \beta_3OPE + \epsilon$$

Whereby ROA is return on assets,  $\alpha$  is regression constant,  $\alpha - \beta_3$  is regression



coefficients, LEN is lending interest rate, MGT is management efficiency, OPE is operating cost efficiency, and  $\epsilon$  is error term.

**Table 4.3 Model Summary**

<b>Model Summary</b>				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.728 <sup>a</sup>	.529	.294	21.74062
<p>a. Predictors: (Constant), Total Non-Interest Expenses in (bn), Lending Rate charged (%), Total Operating Cost (bn)</p>				

**Source: Research Findings**

The model had a Correlation value of 0.728 which depicts good linear relationship between predicted and explanatory variables. The model was also moderately strong owing to R-square values of 0.529, which was adjusted for errors to 0.294. This depicts that the independent variables explains 52.9% of the changes in financial performance as measured by ROA.

**Table 4.4: Analysis of Variance (ANOVA)**

ANOVA <sup>b</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3189.041	3	1063.014	4.179	.0283 <sup>a</sup>
	Residual	1526.223	6	254.370		
	Total	4714.264	9			
a. Predictors: (Constant), Total Non-Interest Expenses in (bn), Lending Rate charged (%) b. Dependent Variable: Non-Current Assets (Net Income/Total Assets) (%)						

**Source: Research Findings**

Table 4.4 shows that the model was significant owing to F-test value of 4.179 at significance value of 0.0283 ( $p < .05$ ). Belle (2008) stated that insignificant F-significance indicates weak regression model as means of the groups (independent and dependent variables) are equal. Thus, the study's regression model was good.

**Table 4.5: Regression Coefficients**

Coefficients						
Model		Unstandardized Coefficients		Standardized coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-57.275	40.561		-1.412	.208
	<b>Lending Rate charged (%)</b>	3.556	1.798	.562	1.978	.095
	<b>Management Efficiency (Total Non-Interest Expenses in (bn))</b>	27.473	14.000	.567	1.962	.097
	<b>Operating Cost Efficiency (bn)</b>	-.957	3.044	-.090	-.315	.764
a. Dependent Variable: Non-Current Assets (Net Income/Total Assets) (%)						

a. Dependent Variable: ROA

From table 4.5 above, the following regression equation was established:

$$\text{ROA} = -57.275 + 3.556\text{LEN} + 27.473\text{MGT} - 0.957\text{OPE}$$

$$p = .0283$$

From the model, when other factors (lending interest rate, management efficiency, operating cost efficiency) are at zero, the financial performance (ROA) will be -57.275. Holding management efficiency and operating cost efficiency constant, one unit increase in lending interest rate would lead to 3.556 increases in DTMSs' financial performance.

Holding other factors (lending interest rate, operating cost efficiency) constant, one charge rise on management efficiency would direct to 27.473 rises DTMs ROA. Furthermore, holding lending interest rate and management efficiency constant, one charge would result to rise in operating cost thus; results to 0.957 fall on DTMs ROA.

Variance Inflation Factors (VIF) shows that there is lack of collinearity amongst the independent variables as the VIF values were way below the critical value of 10: lending interest rate (0.095), management efficiency (0.097) and operating cost efficiency (0.764). As stated by Studenmund (2006). The value of variance which forms an estimated of regression coefficient is increased because of the presence of the collinear relation. This depicts missing collinear relationship problems in the model.

#### **4.5 Interpretation of the Findings**

The research objective was on how lending interest rate affects the financial performance outcome of the DTMs in Kenya.

On the correlation matrix for the three variables shows that there are good correlations between individual independent variables and DTMs' financial performance as measured by ROA. The correlation coefficient indicated all the three factors had a positive effect on ROA.

This implied that increase in lending rate(LEN), management efficiency(MGT) and the Operation Cost efficiency(OPE) would have a positive change on the rate of ROA, and vice versa.

From the regression results, lending interest rate ( $p = .571$ ), management efficiency ( $p = .262$ ), and Operational cost efficiency ( $p = .490$ ) all were found to be significant in explaining DTM's financial performance (ROA) as all indicated positive financial performance. The explanatory variables explain 52.9% in the dependent variable explains this variation. Jointly, all the variables were found to be significant as depicted from the F-statistic ( $p = .0283$ ).

To test the significance of the findings, analysis of variance (ANOVA) was done. A p-value of 0.0283 was registered indicating that the relationship was significant since the value is below the recommended value of 0.05 or less. An F-value of 4.179 also confirms the same findings since it's above the recommended value of 1 or below.

Pearson correlation analysis established that lending interest rates, management efficiency and operational cost efficiency were all positively related to financial performance.

## CHAPTER FIVE: SUMMARY, CONCLUSION & RECOMMENDATIONS

### 5.1 Introduction

This chapter five focuses on the summary, research outcome, conclusion and recommendations that results of the study meant to sought. The researcher then present the major limitations faced in the course of this study and the recommendations for further research and for the policy and practice.

### 5.2 The Study Summary

The research employed annual secondary data on lending interest rates, DTMs' management efficiency, operating cost efficiency and ROA, which were obtained DTMs' financial performance from the CBK and DTMs' offices. The study regression model expressed ROA as a function of lending interest rates, operating cost efficiency and management efficiency. The study covered a period from June 2016 to October 2016 and the analysis of data was done using multiple linear coefficient matrix, regression models and Anova analysis.

The correlation matrix for the three variables shows that there are good correlations between individual independent variables and DTMs' financial performance as measured by ROA. All the correlation coefficient between all the variables lending interest rate, management efficiency and operational cost efficiency in relation to ROA were all positive. The positive coefficient for all the variables implied that increase in any of the tree variables would yield positive results on ROA and vice versa.

From the correlation matrix, lending interest rate ( $p = .571$ ) was found to be significant in explaining DTM's financial performance (ROA) better than management efficiency ( $p = .262$ )

and operating cost efficiency ( $p = .490$ ) all the variables led to positive financial performance. The explanatory variables explain 52.9% ( $R^2$  on the regression summary model) of the variation in the dependent variable. Jointly, all the variables were found to be significant as depicted from the F-statistic ( $p = .0283$ ).

### **5.3 Conclusion**

DTMs' ability to improve informational irregularities between borrowers and lenders will highly depend on the three variables that formed the core of this analysis. ROA measures the improvement of this relationship is highly depending on the three variables that form the basis of this analysis. As indicated by the findings, all three factors directly related to ROA, hence indirectly related to the relationship between borrowers and lenders. Hence, for any DTM to be effective, better rate of lending, efficient management and prudent allocation of resources to minimize cost of operation is highly vital in achieving outstanding DTMs financial performance.

The literacy works regarding financial precautions regarding non-credit worthy customers gives the suggestion to the commercial financial institutions such banks with inclusion of DTMs. That they should have a robust pre-screening and monitoring of borrowers, in their bid to mitigate the impacts immoral hazard on their part and the part of the customer so that they curb the selection problems caused by false information being provided by the borrowers or the lender.

The extent of interest rate, amount of loan taken, and the salary advances were significantly with positivity impact on interest income generated. It was noted that in dominantly high interest rate environment, an incremental change in lending rates was usually larger than their

corresponding increase in the level of deposit rate, this has had the impact in pushing up the DTMs' spreads and coverage of the financial market place. There has always been low responsiveness to increase in interest rate on the part of deposit rate as compared to lending rates which has proved to be highly responsive. Its effect the demand for and allocation of available loanable funds. As higher interest rates discourage borrowing and encourage savings. Though with the Central Bank of Kenya capping the rate of interest on loans, this situation is bound to change, in the near future may affects DTMs adversely.

Lower interest rate encourage borrowing and economic growth i.e. the lower the interest rate, the higher the profit expectation as business are expected to pay certain percentage of the money borrowed (little) as interest for fund borrowed. Conversely, the higher the rate of interest the less the profit expectations.

However, the high rate of interest to the borrowers on lending has contributed to banks' failure in higher-risky customer segments of the prevailing credit market.

#### **5.4 Recommendation for Policy**

The interest rate capping regulation enforced in the last few months by the CBK will greatly assist attainment of growth and advancement of DTMs. It will encourage borrowing on the part of the customers. This will eliminate short-term interest rate changes that have been a norm by most financial institutions in their bid to attract customer. This has always a thoughtful issue among shareholders of the DTMS whose action needs a thorough and precedence analysis before any decision can be made. However, it does not always represent a serious impediment to long-term interest rate creating a ripple effect on the performance and credit standing or worthiness of a financial institution.

The findings clearly suggested that the main determinants of DTMs profitability in terms of financial performance are interest rate, loan, advances, management efficiency, and operational cost efficiency. Therefore, the only way to enhance sustained profitability is to have good loan portfolio, prudent management empowering policies, through risk assurance, and proper monitoring and evaluation of operational cost. The default risk has been a big elephant in the financial institution and a sober approach to it through involvement of various bodies that can help evaluate customer credit worthiness is very necessary.

The study is of the view that DTMs in Kenya need to thorough have deep segmentation of their clients and the decide of on amicable rating of charging the interest rating taking consideration of the regulation by Central Bank of Kenya capping the level of interest rates. Ineffective policies on lending rates of interest have the repercussion of increasing the interest rates and consequently performance of the institution. This study also recommends that DTMs need to apply strict rules and regulations regarding their lending interest rates charged in order to control lending interest rates and improve the auditing of their loan portfolio performance to strengthen credit risk exposure for utmost financial performance.

This study further recommends that DTMs should cautiously manage their interest rate, management efficiency and operational cost to improve their financial performance since it has a positive effect on their financial performance and recommends for income source diversification.

All the results suggest higher efficiency in part of management and cost of operations resulting in lower rates of lending. For better improvement, the other overriding factors on



financial performance like management efficiency and operational cost efficiency, Incorporation of technology and management quality system should be implemented. Quality monitoring benchmarks like ISO standards should be used as the best practise at the organizational level. Also, the DTMS can also form conglomerates to enhance better market penetration and competition, like the case we saw in the recent past when Faulu formed a common acquisition with the South African insurance firm, Old Mutual. This approach is taken because the lending rates increases with increase in the sizes of MFIs.

This necessitates the government to encourage the DTMS to venture into mergers and acquisitions to encourage their better competition in the financial market, and with the lending technology used by the DTMs much of public policy is needed to help improve efficiency to help loan officers venture into market and meet their target clients.

Loan portfolio performance was a subject of the amount of recoverable loans by DTM and the amount of returns that the portfolio yields. However, the study discovered that this could be achieved when the DTM lends at favourable interest rates such that the demand for the loans increases, the increasing demand for the loans should not however compromise the DTMs' credit management policies. The DTMs should therefore ensure that the customers are adequately screened to eliminate those who cannot repay the loans.

## **5.5 Limitations of the Study**

There were number issues proving to be limiting factors to the smoothing execution of this study. These factors were notably as the following, the use of secondary data from DTMs in computing the descriptive, inferential and co relational as were found without any further modification or verification. The validity of data was assumed to have met the minimum threshold without any verification for the use in this study. Hence the result of the study relied heavily in the validity of the data which was not tested priori to commencing the

project. Secondly, the results from this study is only applicable to other DTMSs and may not be generally applicable in other financial firms such as SACCOs, commercial banks and other MFIs that are not deposit taking. The prevailing condition at the time of these study may not be the same when at any point in time, hence the study cannot

Finally, the study used the ordinary least square regression method of analysis, which may have its own weaknesses compared to other methods, which may limit the general applicability of the study results. We could have incorporated other forms of analysis such as qualitative that do use first hand data gathering and collection methods such as use of observation, carrying out interviews, and participation in focused group discussions with the staff and key stakeholders in DTMS on issues affecting their progress.

## **5.6 Areas for Further Research**

On the study it recommends future studies be carried in a holistic view on effect of lending rates and its financial performance on in commercial banks, SACCOs, DTMs and general MFIs. This would be useful for comparison reasons. This will has the power of creating a synergic front in tackling the issues affecting the financial market in Kenya.

Future studies can also use primary data such as interviews and focused group discussion that would better help in capturing qualitative information that cannot be quantitatively captured in financial statements.

Finally, future studies could also look at the interest rate spread over a longer duration of time to capture market imperfections or intermediation issues on how lending interest rates impacts on the financial performance DTMS in Kenyan financial market.

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## APPENDICES

### Appendix I: List of the Registered MFIs in Kenya as of 21st May 2016.

1. Faulu Kenya MFI ltd
2. KWFT DTMS LTD
3. SMEP DTMS LTD
4. Remu DTMS LTD
5. Rafiki DTMS LTD
6. UWEZO DTMS LTD
7. Century DTMS LTD
8. Sumac DTMS LRD
9. U&I DTMS LTD
10. Choice Microfinance Bank Limited
11. Daraja Microfinance Bank Ltd
12. Caritas Microfinance Bank Ltd
13. Maisha Microfinance Bank Limited

**Source: Central Bank of Kenya Website**

## **Appendix I: Letter to the Respondent**

University of Nairobi  
School of Finance and Accounting  
Nairobi, University

Dated \_\_\_\_\_

Dear Sir/Madam,

**Re: A Research on the effect of lending rate on the financial performance of deposit taking microfinance institutions in Kenya.**

I am undertaking a Master degree in Business administration at the school of finance and accounting, UoN. Currently I am undertaking study on the effect of lending rate on financial performance on deposit taking of financial institution in Kenya.

I here by request you to provide information on the data collection form. The result of the report is will be treated with confidential and its mainly for the purpose of academic. I will be very glad and appreciate a lot on your corporation in assist on academic project.

Thank in advance

Yours truly

Kevin .O. Were



## Appendix II: Data Collection Form

### A.MFI PROFILE

1. Name of MFI
2. Year of Establishment
3. Current Number Employees (Tick where appropriate)  
Below 20 { } 21-50 { } 51-100 { } 101 and above { }
4. Lending rate charged { }

### B. FINANCIAL PERFORMANCE OF THE MFI FROM 2011-2016

Year/ Performance measure	2011	2012	2013	2014	2015
NET INCOME (Total Revenue – Total expenses)					
Total Assets (Current + Non Current Assets)					
ROA (Net income – Total Assets)					
Total Operating cost					
Total Non- interest expenses					

Source: Author (2016)