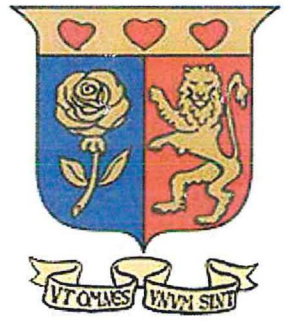


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# THE IMPACT OF DELINQUENT LOANS ON THE PERFORMANCE OF MICROFINANCE BANKS IN EAST AFRICA

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**DECLARATION**

I declare that this work has not been previously submitted and approved for the award of a degree by this or any other University. To the best of my knowledge and belief, the Research Proposal contains no material previously published or written by another person except where due reference is made in the Research Proposal itself.



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

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**List of Abbreviations**

| | |
|---|---|
| MFBs | Microfinance Banks |
| NPLs | Non-performing Loans |
| CBK | Central Bank of Kenya |
| FP | Financial Performance |
| INT | Interest Income |
| BS | Bank Size |
| ROA | Return on Assets |
| ROE | Return on Equity |
| OLS | Ordinary least squares |
| GMM | Generalized Method of Moments |
| FE | Fixed Effects |
| RE | Random Effects |

# 1 Introduction

## 1.1 Background to the study

Financial institutions all over the world are faced with the challenge of loan delinquency which has necessitated the need for reviewing lending policies to mitigate the delinquency risk as well as putting in place mechanisms that monitor the behavior of borrowers. Irena (2014) notes that loan default was one of the major causes of the financial crises of 2008 and consequently, after the Global Financial Crisis, credit management increased, especially with the purpose of improving the resiliency of the banking sector by requiring more and higher quality capital and more balanced liquidity.

Per a study by Alawiye (2013) credit administration and the incidence of bad loans, increase in the loses of Nigerian Banks result from problem loans and the effects of such loans in the form of bad debt provisions can be minimized through effective monitoring and evaluation to avoid the diversion of facilities for unapproved purposes. Similarly, Arko, (2012), in a study on the causes and impact of nonperforming loans on the operations of microfinance institutions in Ghana, states that some of the loans advanced to beneficiaries underperform and do not earn the projected returns resulting into the reduced quality of the loan portfolio which constitutes a considerable percentage of the assets of the MFIs. In regards to these studies, the importance of credit risk management cannot be taken for granted and this explains why the practice has increased for both borrowers and lenders.

The Microfinance sector in East Africa has undergone numerous reforms with the aim of improving delivery of microcredit to the poor as well as small and medium sized Entrepreneurs. However, despite the notable progress, loan delinquency is still a major problem that undermines profitability in institutions. Bikki (2003) states that the microfinance institutions in Tanzania continue to face the major risk of loan delinquency despite stringent measures like compliance of Microfinance banks to with Bank of Tanzania prudential standards and internationally accepted sound banking practice by setting aside adequate reserves to protect against anticipated loan delinquencies.

Loses in microfinance institutions have resulted from extending huge amounts of credit with little or no credit assessment with the aim of increasing profitability, loans which later materialize into non-performing loans and subsequently erode profits of the institutions (Wangai, 2014). This is especially evident in Kenya where the Central Bank of Kenya (CBK) sector report for 2013 and 2014 listed the following statistics: bank loans in the amount of Kshs 80.6 billion as at December 2013 had not been serviced for more than three months, which was an increase from Kshs 61.6 billion the previous year.

A new directive by the CBK resulted from the record of high delinquency loans that required lenders to classify as non-performing loan accounts of a borrower who defaults on the repayment of any one of their multiple loans for more than three months. According to Wangai (2014), High interest rates in the year 2012, and the introduction of CBK prudential guidelines obliged banks to set aside additional cash as provision for defaults measures necessary to delve into how NPLs affect financial performance in microfinance banks in Kenya.

Digging deeper into the issue of non-performing loans and their effect on profitability, A social research Commissioned by the Austrian Ministry of Foreign Affairs of Micro finance in Uganda notes that a significant number of MFIs in the country (Uganda) that are making progress in terms of profitability have taken important steps towards tackling the issue of non-performing loans by professionalization and transformation into well-organized, well-managed and commercially viable institutions that provide financial services to an increasing number of clients with proven poverty reducing impact. The research states that once the bigger microfinance institutions had embraced professionalism none faced serious delinquency problems.

## 1.2 Problem Statement

Financial institutions face the enormous risks of non-performing loans (NPLs) which adversely affect their financial performance. Loan delinquency among Microfinance institutions in East Africa has become so crucial, which, as Warui (2012) argues may be a pointer to increasing ineffectiveness of financial Institutions. Because of the far-reaching implications of NPLs on Microfinance Banks as well as the overall economy, stringent evaluation and monitoring strategies have been put in place by the institutions to ensure repayment of loans by borrowers to mitigate NPLs. In Kenya, The Central Bank of Kenya has set prudential guidelines which oblige banks to set aside additional cash as provision for defaults and in Tanzania, Microfinance banks are to comply with Bank of Tanzania prudential standards and internationally accepted sound banking practice by setting aside adequate reserves to protect against anticipated loan delinquencies. Extensive research has been done on the impact of delinquent loans on Commercial banks, however, there has been limited research done on the impact of such loans on Microfinance banks in the East Africa. From existing literature, it has already been deduced that these loans do affect the profitability of Microfinance banks, therefore with limited empirical evidence of this impact on microfinance banks in East Africa there exists a gap that this research seeks to fill by addressing the question of: to what extent delinquent loans affect the financial performance microfinance banks in East Africa.

## 1.3 Research Hypothesis

The main objective of this study is to analyze the impact of delinquent loans on the financial performance of Microfinance Banks in Kenya, Tanzania and Uganda.

In conceptualizing the impact of delinquent loans on FP of Microfinance banks, it is considered that interest income is significantly influenced by delinquent loans.

The research hypothesis is:

$H_0$: Delinquent loan does not have a significant impact on interest income

$H_1$: Delinquent loan has a significant impact on interest income

# 2 Literature Review

## 2.1 Theoretical Literature Review

### 2.1.1 Asymmetry Theory

The theory explains that in an economic transaction the party that possesses more information on the specific product to be transacted is in a position to negotiate optimal terms for the transaction than the other party. (Auronen,2003) In a lending transaction asymmetry information makes it difficult to distinguish between a good and bad borrower and according to Bester(1985) the party that knows less about the same specific item to be transacted is therefore in a position of making either right or wrong decision concerning the transaction. The adverse selection has led to significant accumulation of Non-Performing loan in banks, therefore, information sharing is said to reduce adverse selection by enhancing banks' information on credit applicants.

According to Wangai (2014), in a world with simple debt contracts between risk-neutral borrowers and lenders, the presence of limited liability of borrowers imparts a preference for risk among borrowers, and a corresponding aversion to risk among lenders. This is because the limited liability of borrowers implies that lenders bear all the downside risk. On the other hand, all returns above the loan repayment obligation accrue to borrowers. It is further asserted that, just like moral hazard, adverse selection can lead to significant accumulation of NPLs. (Bofondi,2003)

The effect of asymmetry information and adverse selection on loan delinquency can further be illustrated in joint liability lending. Beatriz (2004) states that in an economy where there exists safe and risky borrowers who know each other's risk type assortative matching will be induced, where the safe borrowers will group themselves with other safe borrowers and risky borrowers will have no choice but to form groups with other risky borrowers who opt to default more often.

Ghatak (1999) states that all borrowers prefer to have safe partners because of lower expected joint-liability payments, in the case of joint liability, borrowers therefore end up with partners of the same type and as a consequence, the lender can screen borrowers by varying the degree of joint liability because risky borrowers have risky partners and hence, will prefer a contract with less joint liability than will a safe borrower for the same reduction in interest rates. This creates a

situation where the safe borrowers might be forced out of the credit market because the presence of risky borrowers drives the interest rates from credit institutions too high.

While all borrowers face exactly the same contracts with exactly the same interest rates, the fact of assortative matching means that safe borrowers pay lower effective interest rates because their expected costs will be lower. This in turn encourages them to enter the credit market, take loans, and improve efficiency which lowers the average incidence of default and thus lowers costs, group lending thereby can eliminate adverse selection inefficiencies.

### 2.1.2 Moral Hazard Theory

Moral hazard is a consequence of concealment of crucial information pertaining to a transaction such as a lending and borrowing transaction. According to Wangai (2014), Moral hazard refers the risk in which a party to a transaction provides misleading information about its assets, liabilities or credit capacity, or has an incentive to take unusual risks in a desperate attempt to earn a profit before the contract settles. Usually, a party to a transaction may not enter into the contract in good faith, thus providing misleading information about its assets, liabilities or credit capacity.

Information from such transactions is vital for the efficiency of financial institutions on which the economic growth rate is dependent on. According to Marcello (2003), moral hazard has led to the substantial accumulation of NPLs and the financial systems themselves depend on accurate information about borrowers and the project the funds are used for. The "moral hazard" hypothesis, which was discussed by Keeton and Morris (1987) in their study of why banks' loan losses differ., argued that banks with the relatively low capital respond to moral hazard incentives by increasing the riskiness of their loan portfolio, which in turn results in higher non-performing loans on average in the future.

Banks that tend to take more risks, including in the form of excess lending eventually absorbed higher losses and excess loss rates were prominent among banks that had relatively low equity-to-assets ratio. Morris (1996) stated that the accumulation of NPLs is generally attributable to a number of factors, including economic downturn, macroeconomic volatility, and terms of trade deterioration, high interest rate and excessive reliance on overly high-priced inter-bank borrowings, insider borrowing and moral hazard.

## 2.2 Empirical Literature Review

### 2.2.1 Delinquent Loans

The term Non-Performing Loans is used interchangeably with Bad loans and impaired loans as identified in (Fofack, 2005). A Non-Performing Loan is a loan that is in default or close to being in default. A loan is non-performing when payments of interests and principal are past due by 90 days or more, or at least 90 days of interest payment have been capitalized, refinanced or delayed by agreement, or payments are less than 90 days overdue, but there are other good reasons to doubt that payment will be made in full. (IMF, 2009)

According to Bismark (2015), there are several definitions to a delinquent loan, a loan is said to be delinquent if the debtor is either unwilling or unable to pay the amount borrowed when it is due or when the debtor does not make required payments or comply with the loan covenant or agreement between the borrower and the lender. The delinquent loans can also be termed as loans for which both principal amount and interest charges are outstanding contrary to the terms and conditions of the loan agreement between the borrower and the lender and mostly are at least 90 days overdue. Delinquent loans also are referred to as non-performing loan or impaired loans or bad loans or even problem loans, are loans that are ninety days or more past due.

Delinquent loans have created a global problem in the banking industry and in Indonesia where NPLs represented about seventy-five percent of total loan portfolios shows that there were increase in the NPLs in the period leading up to the financial crisis and over sixty banks collapsed during the crisis. (Cortavarria, 2000) The growth of banks in both Malaysia and Singapore was constrained by banks which faced the accumulation of NPLs that eroded their capital. (Karim, 2010)

Gulf Cooperation Council (GCC) in the Middle East had a favorable credit conditions and lower NPLs as well as significant banking credit between 2003 and 2008 but in 2009 the global crisis exposed the vulnerabilities of the banks in the Gulf Cooperation Council (GCC) and the NPLs rose sharply and credit stagnated, causing worries that economic recovery could be stagnated by credit constraints. NPL levels increase as the economic situation deteriorates and interest payments rise. (Raphael, 2010)

### 2.2.2 Impact of Delinquent Loans on Banking Institutions

The financial performance of banking institutions is measured in terms of profitability and NPLs have a direct adverse impact on that profitability. As stated earlier the loan portfolio forms the greatest asset of a microfinance institution. Revenues of banks depend on lending and as a result, the financial performance and success of banks depend on how effectively lending activities are managed because the revenue (interest income) is usually generated from performing loans.

Among the studied impacts, one effect of delinquent loans on the institutions is paramount; limitation on FP. The provisions for delinquent loans reduce total loan portfolio of banks and consequently reduce the interest earnings on such assets. (Bismark, 2015). According to Kwan (2003), in his study of the Operating Performance of Banks among Asian Economies empirically reveals, using regression analysis that an increased delinquent loans negatively influence earnings on loans.

According to Achou (2007), NPL ratio has an inverse relationship with banks' profitability. An increase in NPLs rate is evidence of the failure of credit and according to Khemraj (2009), high percentages NPLs are often associated with performance problems of banks and financial crises in both developing and developed countries. The occurrence of banking crises with a massive accumulation of NPLs and further observes that the NPLs account for a significant portion of total assets of insolvent banks and financial institutions. (Fofack, 2005)

Many banks in the Central, Eastern, and South-Eastern Europe (CESEE) region experienced a rapid deterioration in assets' quality, leading to substantial losses and reduction of capital buffers. The fast increase in NPLs not only increased banks' vulnerability to further shocks but also limited their lending operations with broader repercussions for economic activity (Klein,2013). In the 2012 study with the objective of examining the determinants of commercial banks' performance in Tanzania Xuezhi (2012) revealed that liquidity and asset quality had positive impact, whilst NPLs had a negative influence on profitability.

The Government of Tanzania embarked on financial sector reforms in 1991 with the aim of creating an effective and efficient financial system. The main and most notable reforms in Tanzania's financial sector included liberalization of interest rates, elimination of administrative credit allocation, strengthening the Bank of Tanzania's role in regulating and supervising financial institutions, restructuring of state-owned financial institutions, and allowing the entry of local and

private banks into the market. These elements of the financial sector reform were embodied in the Banking and Financial Institutions Act of 1991. (Bikki, 2003)

Bikki (2003) also states that the microfinance institutions in Tanzania face the major risk of loan delinquency and as precaution banks face a major disincentive to comply with Bank of Tanzania prudential standards and internationally accepted sound banking practice by setting aside adequate reserves to protect against anticipated loan delinquencies. Reserves for delinquent loans are usually included as an item to be expensed in a bank's income statement, which would reduce its net operating profits and taxable income.

In Kenya Wangai (2014) carried out a study in Nakuru (Kenya) to find out the Impact of Non-Performing Loans on Financial Performance of Microfinance Banks in Kenya: A Survey of Microfinance Banks in Nakuru Town, the results established that credit risk negates the profitability of MFBs due to increment in NPLs and as such reduces the MFBs' financial performance. Failing banks have huge amount of non-performing loans prior to failure and that asset quality is a significant predictor of insolvency. (Allen, 1997)

# 3 Research Methodology

## 3.1 Introduction

This chapter presents the data and the methodology that will be used to conduct the research. The Study adopts Panel Data Analysis techniques to answer the research questions.

## 3.2 Population and Sampling

The study uses panel data from Microfinance banks in a target population (the population the study findings will be generalized to) specified to East Africa Region. The sample includes microfinance banks from the following East African countries: Kenya, Uganda and Tanzania. The criteria used to choose sample data include ease of obtaining data and a sufficient number of Microfinance banks that exist in the mentioned countries. Panel Dataset of Individual Bank Data will be used in the analysis.

## 3.3 Data and data sources

The sample data constitutes major microfinance banks from the three countries (Kenya, Uganda and Tanzania) over the 2003–2009 period that have information available for all of the variables analyzed. All data is sourced from the world MIX-database[1]

## 3.4 Data Analysis Method

The empirical work on determinants of bank's profitability can potentially suffer from three sources of inconsistency: highly persistent profit, omitted variables, and endogeneity bias. (Poghosyan, 2009). This study adopts panel data analysis techniques in the empirical analysis to correct these potential problems. The linear panel data equation is specified as follows:

$ROA_{it,k} = \beta_1 + \beta_2 X_{2,it} + \beta_3 X_{3,it} + \beta_4 X_{4,it} + \varepsilon_{it}$

Where:

$ROA_{it,k}$ Represents the dependent variable, Return on Assets, of a microfinance bank k in country i during the period t.

$X_{2,it}$ Represents Nonperforming loans, measured using nonperforming loan ratio, of a microfinance bank k in country i during the period t.

[1] Data can be accessed from the MIX Market website on the following link with requisite payment and subscription: https://www.themix.org/mixmarket/data-and-analysis#datasets

$X_{3,it}$ Represents Operational efficiency, measured as a fraction of operating expense to total Loan portfolio, of a microfinance bank k in country i during the period t.

$X_{4,it}$ Represents Capital adequacy, measured in terms of Equity (capital) to Asset ratio, of a microfinance bank k in country i during the period t.

ε Represents the error term.

There are two estimation methods that can be used in the panel data set: Fixed effects (FE) or Random Effects (RE). The FE estimations allow for the unobservable bank heterogeneity and different constants for each bank. However, the use of a fixed-effects model will eliminate the time-invariant hidden bank features that affect profitability, and will make FE estimations less efficient than the RE estimation counterpart. Like the FE model, RE estimations take into consideration the unobservable bank heterogeneity effects but incorporate these effects into the error term. In the RE also, constants for each bank are taken as random parameters and again incorporated in the error term. The choice of the appropriate panel data model, fixed effects or Random effects, is guided by the Hausman (1978) specification test.

### 3.4.1 Measuring Non-Performing Loans

According to Maudos (2004), the bank loans over total assets ratio is mainly used as a measure of bank liquidity or as a proxy for credit risk. Miller (1997) suggests a negative relationship between credit risk and profitability because a higher loan to asset ratio increases the exposure of banks to bad loans and hence lowers profit margins. On the other hand, standard asset pricing arguments imply a positive relationship between risk and earnings.

Empirical studies find that a higher loan ratio is associated with higher interest margins, which suggest that risk averse shareholders seek larger earnings to compensate higher credit risk (Naceur, 2008), the following reviews gives rise to the research hypotheses in this study. In the methodology adapted for calculation of the loan loss provision in the study by Naceur (2010), credit risk is measured by loans over total assets similarly in this study non-performing loans (independent variable) will be measured using the non-performing loan ratio given by non-performing loans over the total loans.

### 3.4.2 Financial Performance measures justifications

A study by Flamini (2009) on the Determinants of Commercial Bank Profitability in Sub-Saharan Africa uses Return on Assets as a measure of profitability defined as the banks' after tax profit over total assets. The study uses ROA as an alternative profit measure to ROE and justifies this by stating that ROE disregards financial leverage and the risks associated with it. Similarly, a study by (Saira, 2011) also uses ROA as a measure of profitability calculated by dividing net income to total assets, this study therefore adopts the same methodology and uses ROA, as a measure of profitability.

There are several studies that have been conducted to explain whether the capital structure and capital adequacy determine the performance of microfinance institutions. In his 2007 study, Kyereboah states that highly leveraged microfinance institutions have higher ability to deal with moral hazards and adverse selection than their counterparts with lower leverage ratios. Wambugu and Ngugi (2012) in the study on factors influencing financial sustainability of MFIs in Kenya found a positive correlation between capital structure and financial sustainability of MFIs. According to Upchurch (2005), capital adequacy is an important factor in the sustainability if any given organization. With the support of the aforementioned research, this paper employs capital adequacy as a control variable that affects performance of microfinance banks.

In this research operational efficiency is also used as a control variable, as it is believed to also affect the performance of microfinance banks. Generally management competency can be expressed through their ability to operate management expenses. Efficiency in expense management should ensure a more effective use of MFIs loan able resources, which may enhance MFIs profitability. (Catherine, 2015). According to Basu, Blavy & Yulek (2006),Microfinance institutions require ensuring high customer satisfaction, customers make their choice depending on the perception quality, service and value they are receiving.

## 4 Data Analysis, Results and Discussions

This chapter presents data analysis, results and discussion made from the study on the effects of nonperforming loans on performance of microfinance banks in East Africa.

### 4.1 Descriptive Statistics

Regression analysis was done using the following variables: Return on Assets as the dependent variable, non-performing loans as the independent variable and operational efficiency and capital adequacy as control variables. The population consisted of Microfinance banks in East Africa during the period 2003-2009, data is from the MIX database, data obtained was transferred to Eviews 8 as variables for regression analysis and results were obtained. The sample consisted of 35.71% of the total population, the researcher is of the opinion that the data well represents the population.

### 4.2 Inferential Statistics

#### 4.2.1 Correlation Analysis

Before carrying out regression analysis the researcher sought to establish the correlation between the variables. The results are shown below and as expected the correlation(r) between return on assets and non-performing loans is negative.

**Table 1: Correlation Matrix of Variables**

| | *Capital Adequacy* | *Return on Assets* | *Operational Efficiency* | *Non-performing loans* |
|---|---|---|---|---|
| Capital Adequacy | 1.0000 | | | |
| Return on Assets | 0.4576 | 1.0000 | | |
| Operational Efficiency | -0.3665 | 0.2278 | 1.0000 | |
| Non-performing loans | 0.1256 | -0.0114 | 0.2851 | 1.0000 |

[2]

[2] The matrix gives the correlation(r) between the pairs of all the data set. Negative correlation indicates that variables move in the opposite direction and positive correlation signifies that both variables move in the same direction. When r is +1, it signifies a perfect positive relationship.

**Regression Analysis**

Regression analysis was used to determine the effects of nonperforming loans on the performance of microfinance banks. To conduct the regression analysis, the following model was used:

$ROA_{it,k} = \beta_1 + \beta_2 X_{it,k} + \beta_3 X_{it,k} + \beta_4 X_{it,k} + \varepsilon_{it}$

Where:

$ROA_{it,k}$ Represents the dependent variable, Return on Assets, of a microfinance bank k in country i during the period t.

$X_{2,it}$ Represents Nonperforming loans, measured using nonperforming loan ratio, of a microfinance bank k in country i during the period t.

$X_{3,it}$ Represents Operational efficiency, measured as a fraction of operating expense to total Loan portfolio, of a microfinance bank k in country i during the period t.

$X_{4,it}$ Represents Capital adequacy, measured in terms of Equity (capital) to Asset ratio, of a microfinance bank k in country i during the period t.

ε Represents the error term.

**Table 2: Regression Analysis**

| Dependent Variable: Return On Assets<br>Sample: 2003 2009<br>Periods included: 7 | | | | |
|---|---|---|---|---|
| **Variable** | **Coefficient** | **Std. Error** | **t-Statistic** | **Prob.** |
| Intercept | -0.0526 | 0.0280 | -1.8780 | 0.0708 |
| Non-Performing Loans | -0.5226 | 0.2572 | -2.0322 | 0.0517 |
| Operational Efficiency | 0.2023 | 0.0684 | 2.9588 | 0.0062 |
| Capital Adequacy | 0.2462 | 0.0851 | 2.8919 | 0.0073 |

[3]

[3] Table 2 shows results from Regression Analysis when Return on assets is regressed on Non-performing loans and the two control variables, operational efficiency and capital adequacy.

**Interpretation of results**

The coefficient of Non-performing loans is -0.52 with a p-value 5%, which means that an increase in non-performing loans decreases the return on assets, as expected NPL has a negative impact on revenue growth. The coefficient of capital adequacy is 0.25 with a p-value of 0.73%, significant at a level of 5% significance. An increase in the capital adequacy therefore increases the return on assets. The coefficient of operating efficiency 0.20 with a p-value of 0.62%, significant at a level of 5% significance, therefore an increase in operating efficiency increases return on assets.

# 5 Summary, Conclusions and Recommendations.

## 5.1 Introduction

The research set out to establish the impact of non-performing loans on the performance of microfinance banks in East Africa. The following chapter presents discussions of the key findings, conclusion and recommendations from the findings.

## 5.2 Summary

The study is on the impact of delinquent loans on the performance of microfinance banks. The key concepts include non-performing loans, which was measured using the non-performing loans ratio and performance, measured in terms of Return on assets, in context of microfinance banks in East Africa. The control variables considered are capital adequacy and operational efficiency. The study used a descriptive design where the population comprised of major microfinance banks in East Africa and the analysis covered the period 2003-2009.

A regression model was used to analyze the data. The findings concluded that delinquent loans negatively affects the performance of microfinance banks and that nonperforming loans ratio measured by nonperforming loans over total loans, is a good measure of nonperforming loans as the findings indicate that it is appropriate and statistically significant in explaining variance with return on assets. The study also indicates that capital adequacy and operational efficiency affects performance of microfinance institutions in East Africa.

## 5.3 Conclusion

The study as supported by Berger et al (1997), confirms that that nonperforming loans negatively affects performance of microfinance institutions. The results from the regression analysis confirm that nonperforming loans negatively affects the performance of microfinance banks in East Africa and that nonperforming loans ratio measured by nonperforming loans over total loans is appropriate and significant in explaining effect of nonperforming loans on performance of microfinance banks. The findings also indicated that multi linear regression model is appropriate for testing the effects of nonperforming loans on performance using nonperforming loans ratio as independent variable and change in revenue as a dependent variable respectively. It was concluded that profitability of MFBs is negated due to increment in NPLs and as such reduces the MFBs' financial performance.

## 5.4 Recommendations.

Through the use of effective internal control systems, diversification, good credit appraisal procedures along with efforts to improve asset quality in the balance sheets microfinance banks can mitigate moral hazard and adverse selection risks when advancing loans to minimize non-performing loans. It is also recommended that, potential borrowers should be critically analyzed to assess their credit worthiness before they are awarded loans or alternatively offer the loans depending on borrower's ability to service these loans. Moreover, MFBs should fully abide with the stipulated credit regulations as well as work closely with other loaning institutions to allow sharing of credit information in order to identify serial defaulters and desist from awarding such borrowers loans.

## 5.5 Limitations of the Study.

The study gives past trends and does not give indicators on what to improve on. Descriptive research is essentially static whereas the data maybe dynamic and this cannot be captured in the study. Most data used in the study was annual data and it would have been more preferable to obtain quarterly or semi-annual data to better prove the accuracy of the data. This would mean that the data points were not as sufficient as it might have been desired. For some of the MFBs data from particular years was missing and some data from existing years was not complete for all variables, these affected the accuracy of the results from the analysis.

## 5.6 Suggestions for Further Research

Future research should include other factors as controlling variables and include other parameters that can be used to measure performance and non-performing loans of microfinance institution. It would also be important to conduct a comparative study with other MFIs apart from microfinance banks, as well as expand scope to other countries in order to establish any similarities and differences. In the case where data is available it would be more prudent to extend the time period to establish whether the same conclusions will be reached.

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