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# INFLUENCE OF FINANCIAL MANAGEMENT PRACTICES ON PROFITABILITY OF MICRO FINANCE INSTITUTIONS IN HOMABAY COUNTY, KENYA

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**ABSTRACT**

*The aim of this study was to investigate the influence of financial management practices on profitability of MFIs in Homabay County. The target population was 113 senior and middle level management staff of 8 registered MFIs in Homabay County; from where Yamame's sampling formula was applied to get a sample size of 88 respondents who were selected using simple random sampling. Data was collected using structured questionnaires and computed using SPSS 23; where descriptive and inferential statistics were generated. Pilot study was done in an established MFI in Kisumu County where content validity was applied to check instrument validity while cronbachs alpha that test internal consistency was used to check reliability of research instruments. A total of 81 out of 88 sampled respondents returned dully filled questionnaires indicating a response rate of 92.04% which was excellent for generalizability of research findings to a wider population. Results from descriptive and inferential analysis revealed that all predictor variables (credit risk management, credit standards, loan portfolio diversification, technical efficiency) significantly influenced profitability of MFIs in Homabay County. The study concluded that one; credit risk management is a significant predictor of MFI profitability, two; credit standards significantly influence MFIs profitability such that MFIs with feasible credit standards can realize an increase in profitability; and three; loan portfolio diversification is a viable measure by MFIs to help increase total loan ratio which can eventually boost MFIs profitability. The study recommended that one, MFIs should engage in credible credit risk management practices to minimize loan delinquency and improve MFIs profitability, two, MFIs should formulate feasible credit standards that attract more customers while at the same time minimizing loopholes arising from credit risks.*

***Key Words:*** *Credit Risk Management, Credit Standards, Loan Portfolio, Technical Efficiency, Profitability*

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## INTRODUCTION

MFIs Financial performance as measured by profitability has attracted many investors and borrowers alike. Therefore, efforts by the MFIs management to improve financial performance must be matched with adoption of financial management practices that provide MFIs with competitive advantage over their rivals. One cannot claim autonomy over the list of financial management practices since they are diverse (Rahaman, 2010).

Robust financial management practices are associated with better financial performance of MFIs. Efforts by the MFIs management to improve financial performance must be matched with adoption of financial management practices that provide MFIs with sustained competitive advantage over their rivals. One cannot claim autonomy over the list of financial management practices since they are diverse (Rahaman, 2010).

For instance, Chijoriga (2007) asserts that credit risk is the most expensive risk in financial institutions and its effect is more significant as compared to other risk as it directly threatens the solvency of financial institutions. The magnitude and level of loss caused by the credit risk as compared to other kind of risks is severe to cause high level of loan losses and even institutional failure. Risk management is a process of thinking systematically about all possible risks, problems or disasters before they happen and setting up procedures that will avoid the risk, or minimize its impact, or cope with its impact. It is basically setting up a process where you can identify the risk and set up a strategy to control or deal with it (Chijoriga, 2007).

Loan portfolio is the total of all loans held by a bank or finance company on any given day. Therefore, individual loans form a loan portfolio in MFI. Loans generate huge interest for banks which contribute immensely to the financial performance of banks. However, when loans go bad they have some adverse effects on the financial health of banks. This is because in line with banking regulations, banks make adequate provisions and charges for bad debts which impact negatively on their performance (Ray, 2012). Bank of Ghana regulations on loan provisioning indicate that loans in the non-performing categories that is loans that are at least ninety days overdue in default of repayment will attract minimum provisions of 25%, 50% and 100% for substandard, doubtful and loss, respectively (Bank of Ghana Act, 2004).

Regionally in East Africa, Microfinance institutions in Uganda are always often faced with high operating costs to provide financial services to the people. As more microfinance institutions grow, they tend to become formal financial institutions. Each microfinance institution has a unique profile and operational structure that determines which types of controls are appropriate to increase financial sustainability (Mazlan, 2014). Further, Microfinance sector in Tanzania has recently experienced tremendous growth. This is due to the increased number of firms engaging in microfinance services including commercial banks and other profit oriented firms (Tehulu, 2013). Recent statistics shows that financial sustainability of microfinance institutions in Tanzania has improved. More than half of them are self-financed and highly efficient and effective in terms of costs and operations but their sustainability in terms of profits need to be examined (Triodos, 2011).

Given that the vision of micro finance is to promote the growth of micro enterprises in Kenya, MFIs and other financial intermediaries have experienced rapid growth to support the youth financial requirements. A number of MFIs and financial intermediaries including Kenya Women Finance Trust (KWFT) and Faulu have come up to provide micro finance services to the low income groups for purposes of starting or developing income generating activities. These groups include youth and women. Related to this is the indication that MSEs access to credit has increased greatly from 7.5% in 2006 to 17.9% in 2009 (Simeyo et al., 2009).

Therefore, having identified the scarcity of credit as a major obstacle to economic growth, the government of Kenya, brought in the Microfinance

Act that came into force on 2nd May, 2008 following the Microfinance (Deposit Taking Microfinance Institutions) regulations by the Central Bank. The Act covers Deposit Taking Microfinance Institutions as well as non-deposit taking MFIs in addition to providing for banks to establish fully owned subsidiaries to undertake MFIs business (Nderi, 2012)). The Act has paved way for a much more comprehensive and consistent regulatory environment for MFIs having been designed to promote the performance and sustainability of deposit taking MFIs in addition to protecting depositors' interests better. The Act also enables MFIs to provide more wholesome financial services to the small micro enterprises Sector (Nderi, 2012).

Further, research findings in Mugo (2012) highlighted that financial innovation contributed to the expansion of the MFIs market share, increase in the number of clients and earnings in Kenya in addition to the study by Nderi (2012) that established that the three determinants; self-sustainability commercialization, and automation of customer products and services have a weighty effect on the revolution of MFIs in Kenya but financial issues such as credit standards, loan portfolio diversification, credit risk management, technical efficiency have not been addressed by researchers yet could significantly impact on MFIs' profitability.

**Statement of the problem**

MFIs play a significant role in socio economic transformation of the society because their advantages range from provision of easily accessible credit, poverty alienation up to issue of employment creation (Arsyad, 2015) and the general delivery of financial services to the poor households with limited access to some financial institutions like commercial banks (Obamuyi, 2007). However, the profitability of microfinance institutions has received a general global displeasure despite the fact that international and national development programs have been giving high priority on sustainable microfinance for many years. Consequently, some have resorted to downsizing while others have closed business because of insolvency risks. This is caused by high running costs which affect their profitability and long term survival (Wafula, 2011). As a result of the underperformance of some MFIs, especially in the rural areas, the poor and vulnerable are not able to access credit from commercial banks and are thus left with no hope of breaking the poverty bondage (Arsyad, 2015).

Several studies conducted on financial management practices on profitability of MFIs have been found to have scanty information which cannot be relied on for better improvement on MFIs financial performance and the little available empirical studies have contradictory results. Thus, the limited information on prudent financial management has subjected most MFIs to total closure and downsizing of staff (Simeyo et al., 2009); Tehulu, (2013).

Further, most studies on financial management practices and MFI profitability have not been done in Homa Bay County where MFIs have many financial management problems making them face threats of eminent closure and downsizing of staff. Therefore, to fill this gap, this study investigated the influence of financial management practices on the profitability of microfinance institutions in Homabay County, Kenya.

**Objectives of the study**

The general objective of the study was to investigate influence of financial management practices on profitability of MFIs in Homabay County, Kenya. The specific objectives were;

- To determine the influence of credit risk management on profitability of MFIs in Homabay County, Kenya.
- To determine the influence of credit standards on profitability of MFIs in Homabay County, Kenya.
- To determine the influence of loan portfolio diversification on profitability of MFIs in Homabay County, Kenya.

- To determine the influence of technical efficiency on profitability of MFIs in Homabay County, Kenya.

The research hypotheses were;

- **$H_{01}$**: Credit risk management does not significantly influence profitability of MFIs in Homabay County, Kenya.
- **$H_{02}$**: Credit standards does not significantly influence profitability of MFIs in Homabay County, Kenya.
- **$H_{03}$**: Loan portfolio diversification does not significantly influence profitability of MFIs in Homabay County, Kenya.
- **$H_{04}$**: Technical efficiency does not significantly influence profitability of MFIs in Homabay County, Kenya.

## LITERATURE REVIEW

### Risk Aversion theory

Risk aversion is an investor's general desire to avoid participation in "risky" behavior or, in this case, risky investments (Fischer, 1972). This theory thus postulates that investors typically wish to maximize their return with the least amount of risk possible (Campbell & Vicera, 2002).

When faced with two investment opportunities with similar returns, good investor will always choose the investment with the least risk as there is no benefit to choosing a higher level of risk unless there is also an increased level of return. Insurance is a great example of investors' risk aversion (Berger & Lamont, 2011).

### Modern portfolio theory

This is a finance theory that endeavors to maximize portfolio expected return for a given amount of portfolio risk, or equivalently minimize risk for a given level of expected return, by carefully choosing the proportions of various assets. Thus, it is a mathematical formulation of the concept of diversification in investing, with the aim of selecting a collection of investment assets that has collectively lower risk than any individual asset. That this is possible can be seen intuitively because different types of assets often change in value in opposite ways (Merton, 1973).

For example, to the extent prices in the stock market move differently from prices in the bond market, a collection of both types of assets can in theory face lower overall risk than either individually. But diversification lowers risk even if assets' returns are not negatively correlated—indeed, even if they are positively correlated (Campbell & Vicera, 2002).

More technically, Modern Portfolio Theory models an asset's return as a normally distributed function (or more generally as an elliptically distributed random variable), defines risk as the standard deviation of return, and models a portfolio as a weighted combination of assets, so that the return of a portfolio is the weighted combination of the assets' returns (Merton, 1973).

### Efficiency theory

This theory asserts that financial institutions' performance is not determined by the market concentration but by its efficiency. This theory is made up of two distinct hypotheses, namely X-efficiency and Scale–efficiency (Olweny & Shipho, 2011).

According to the X-efficiency hypothesis, a bank which operates more efficiently than its competitors can be more profitable due to lower operational costs. Such firms tend to gain larger market shares and thus higher market concentration, however it is argued that concentration alone should not lead to increased profitability (Olweny & Shipho, 2011).

Athanasoglou et al. (2008) argue that with other factors held constant, the impact of concentration on profitability should be negligible; and further discusses that banks with better management and practices will be better at controlling costs and earning profits, thus "moving the bank closer to the best-practice, lower bound cost curve."

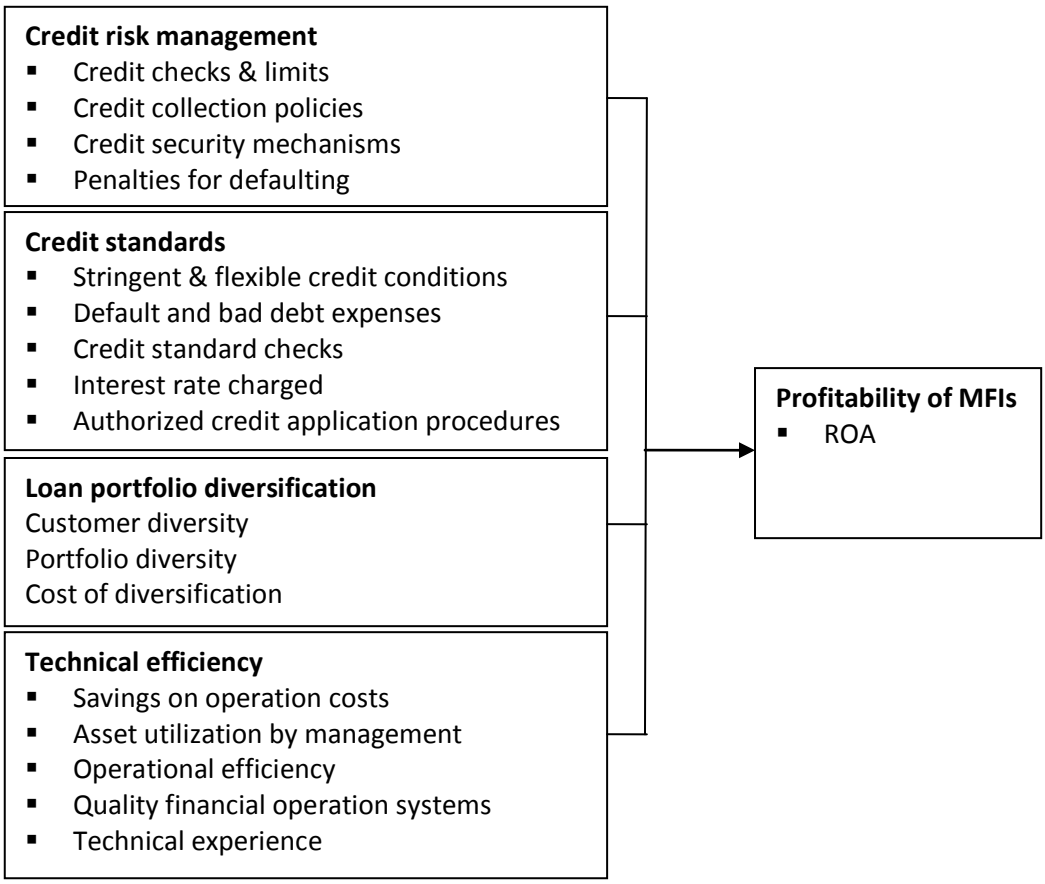


**Figure 1: Conceptual Framework**

**Empirical Review**

Gathoni (2013) conducted a study focused on the factors affecting sustainability of micro-credit groups in Kalama Ward- Machakos County in Kenya. Data was collected mainly by use of questionnaires had both closed and open ended questions. Out of the 2287clients in Machakos region which is comprised of 183 active groups and 40 inactive groups, 330 clients from Kalama Ward and 12 Staff were considered and applied Stratified Random sampling applied leading to a sample of 52 respondents. This study concluded and recommended that Policy, credit risk management and internal control are the foundations of strong groups and forms the basis of partnership with service providers; and well-articulated constitution and credit policy facilitate client appraisal and set the basis of vetting criteria when evaluating prospecting loan applicants.

Moti et al. (2012) also examined the effectiveness of credit risk management system on loan performance of microfinance institutions. Specifically, it sought to examine the effect of credit terms, client appraisal, credit risk control measures and credit collection policies on loan performance. The researchers adopted a descriptive research design. The respondents were the credit officers of the MFIs in Meru town. The results showed that the credit management system variables had significant impact on loan performance of microfinance institutions. It also reported that collection policy has a higher effect on loan repayment at 5% significance level. The study recommended that microfinance institutions should consider loan portfolio diversification, credit risk issues and MFIs capital strength in granting loans so as to mitigate on loan delinquency which subsequently affects financial performance of MFIs. Findings from Frederick's (2014) study also show that credit risk


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has a significant negative impact on the profitability of financial lending institutions for the relevant period; thus, concluded that poor quality of loans can result in higher loan loss provisions, thus reducing bank profits.

Ongore and Kusa (2013) found that quality of the loan portfolio as determined by credit standards has a direct impact on profitability; and non-performing loans should be monitored and kept as low as possible using appropriate strategy and policies. Therefore, the lower the percentage of NPL to total loans, the better the financial lending institution's financial performance.

In this regard, the first step in limiting credit risk involves creating stringent credit standards which involve among others, screening clients to ensure that they have the willingness and ability to repay a loan (Cadot, 2011). Tight credit standards make a firm lose a big number of customers and when credit are loose the firm gets an increased number of clients but at a risk of loss through bad debts. A loose credit policy may not necessarily mean an increase in profitability because the increased number of customers may lead to increased costs in terms of loan administration and bad debts recovery. Microfinance Institutions use the 5Cs model of credit to evaluate a customer as a potential borrower (Abedi, 2000). The 5Cs help MFIs to increase loan performance, as they get to know their customers better. These 5Cs are: character, capacity, collateral, capital and condition.

Portfolio Management is a process encompassing many activities of investment in assets and securities. It is a dynamics and flexible concept and involves regular and systematic analysis, judgment and actions. For instance Portfolio Management deals with selection of securities from the number of opportunities available with different expected returns and carrying different levels of risk and the selection of securities is made with a view to provide the investors the maximum yield for a given level of risk or ensure minimum risk for a level of return (Campbell, 2002).

Hamisu (2011) found that credit creation involves huge risks to both the lender and the borrower. The risk of a trading partner not fulfilling his or her obligation as per the contract on due date or anytime thereafter can greatly jeopardize the smooth functioning of bank's business. On the other hand, a bank or MFI with high credit risk has high bankruptcy risk that puts the depositors in jeopardy. In a bid to survive and maintain adequate profit level in this highly competitive environment, banks and MFIs have tended to take excessive risks. But then the increasing tendency for greater risk taking has resulted in insolvency and failure of a large number of the banks and MFIs. However, the higher the volume of loans extended the higher the interest income and hence the profit potentials for commercial banks and MFIs.

Technical efficiency, although it is often expressed qualitatively, can be measured using financial ratios as proxy for factors such as efficient use of resources, income maximization, reduced operating costs (Sangmi & Nazir, 2010). Operating profit to total income (revenue) ratio is a popular ratio, which shows income generation as well as the ratio of operating expenses to total asset which is expected have a negative impact on bank profitability. Sufian and Kamarudin (2012) explain that the ratio can provide details about the non-interest expenses of a financial lending institution such as the amount of wages and salaries, cost of running branch and office facilities. Reduced expenses show an efficient technical operations and tend to improve the profitability of financial lending institutions.

Seelanatha (2010) further summarizes that in the case of the Efficient Structure approach, the aggressive behavior of efficient firms in the market may lead to the creation of larger firms and a greater market share. Firms can maximize profits by maintaining their prices and firm sizes unchanged or by reducing prices and expanding the firm size- all this done by technical efficiency. Previous analysis of the Market Power theories did not consider the effects of the Efficient Structure

and which motivated him to conduct a study whose results showed evidence supporting only the Relative Market Power and X-efficiency as perfected by technical efficiency (Seelanatha, 2010).

## METHODOLOGY

This study adopted descriptive survey design. The target population in this study was 113 senior and middle level management staff of 8 registered MFIs in Homabay County. Sampling was carried out from the target population and a sampling frame constructed. The sample size in this study was 88 which were determined using Taro Yamane's proportional sampling formula. The researcher used close ended questions (structured questionnaires) to collect data from the field plus use of secondary data collection sheet to collect secondary data. Data collected was edited, cleaned, and coded; and then SPPS version 23 used to analyze the data. Descriptive statistical analysis was used to summarize data using frequencies and percentages while inferential statistics was computed; that is, Pearson correlation coefficient was computed to find out if there existed a correlation, linear and multiple relationship between the independent and dependent variables were also computed to find out the strength of the relationship.

## FINDINGS

Descriptive statistics are the summarized responses in terms of frequencies and percentages as per each statement measuring the study's independent variables (credit risk management, credit standards, loan portfolio diversification, technical efficiency). That is, the descriptive statistics tables indicated the outcomes of responses to each of the statements on study variables using Likert scale with values ranging from 5 to 1; that is; 5=Strongly Agree, 4=Agree, 3= Uncertain, 2=Disagree and 1= Strongly Disagree. The results were presented in the table form showing frequencies of responses as per each statement and its corresponding percentage score in brackets.

**Table 1: Descriptive statistics; Credit Risk Management**

| | Frequency and percentages (%) | | | | | | |
|---|---|---|---|---|---|---|---|
| **Statement** | **5** | **4** | **3** | **2** | **1** | **mean** | **Std.dev** |
| 1.Imposing loan size limits is a viable strategy in credit risk management | 5(6.2) | 41(50.6) | 7(8.6) | 20(24.7) | 8(9.9) | 3.19 | 0.874 |
| 2.Formulation and enforcement of credit collection/recovery policies influences MFI profitability | 7(8.6) | 49(60.5) | 5(6.2) | 12(14.8) | 8(9.9) | 3.43 | 0.850 |
| 3.Enforcement of guarantee policies provides chances for loan recovery in case of loan defaults | 9(11.1) | 48(59.3) | 4(4.9) | 13(16.1) | 7(8.6) | 3.48 | 0.852 |
| 4.The use of credit checks on regular basis enhances credit risk management. | 8(9.9) | 47(58.0) | 6(7.4) | 11(13.6) | 9(11.1) | 3.42 | 0.882 |
| 5.Penalty for late payment enhances customers commitment to loan repayment | 11(13.6) | 50(61.8) | 3(3.7) | 10(12.3) | 7(8.6) | 3.59 | 0.838 |
| 6.Generally credit risk management practices influence MFI profits | 12(14.8) | 51(63.0) | 3(3.7) | 9(11.1) | 6(7.4) | 3.67 | .995 |
| **Valid listwise 81** | | | | | | | |
| **Grand mean = 3.463** | | | | | | | |

From table 1, most respondents agreed (50.6%) and strongly agreed (6.2%) that imposing loan size limits is a viable strategy in credit risk management, implying that loan security limits ensured that some customers did not take loans beyond their repayment capability, thus, can also reduce loan

delinquency. Secondly, 60.5% and 8.6% of respondents agreed and strongly agreed respectively that formulation and enforcement of credit collection/recovery policies influences MFI profitability. This implied that viable credit collection efforts were put in place by MFIs in Homabay County to recover outstanding loans.

More so, most respondents agreed (59.3%) and strongly agreed (11.1%) that enforcement of guarantee policies provided chances for loan recovery in case of loan defaults; while 58.0% and 9.9% of respondents agreed and strongly agreed respectively that the use of credit checks on regular basis enhances credit risk management. This generally implies that use of guarantee policies and effective credit checks really boosts loan recovery, thus improving loan repayment which definitely has a positive bearing on MFIs profitability. Further, most respondents agreed (61.8%) and strongly agreed (13.6%) that penalty for late payment enhances customers commitment to loan repayment. This means that penalty for late repayments threaten customers not to relax in clearing outstanding loans.

Lastly, most respondents agreed (63.0%) and strongly agreed (14.8%) that generally credit risk management practices influenced MFI profits. This is supported by Bashabe et al. (2017) who evaluated whether a relationship exist between credit risk management techniques and financial performance of microfinance institutions in Kampala, Uganda. Primary data was collected using structured questionnaires, while secondary data was collected from the microfinance institutions annual reports (2011 - 2015). Frequencies and descriptive statistics were used to analyze the population. The findings indicated that credit risk identification and credit risk appraisal had a strong positive relationship on financial performance of MFIs, while credit risk monitoring and credit risk mitigation had moderate significant positive relationship on financial performance of MFIs. The study recommended, among others, that the credit risk appraisal process should identify and analyse all loss exposures, and measure such loss exposures (Bashabe et al., 2017).

**Table 2: Descriptive statistics; Credit standards**

| | Frequency and percentages (%) | | | | | | |
|---|---|---|---|---|---|---|---|
| **Statement** | **5** | **4** | **3** | **2** | **1** | **mean** | **Std.dev** |
| 1.The use of customer credit application forms improves monitoring and credit management | 5(6.2) | 41(50.6) | 6(7.4) | 20(24.7) | 9(11.1) | 3.36 | 0.899 |
| 2.The use of credible credit standards checks on regular basis enhances profitability of MFI | 7(8.6) | 43(53.1) | 5(6.2) | 21(25.9) | 5(6.2) | 3.41 | 0.838 |
| 3.Interest rates charged affect profitability of the MFI | 6(7.4) | 40(49.4) | 7(8.6) | 19(23.5) | 9(11.1) | 3.29 | 0.905 |
| 4.Penalty for late payment enhances customers commitment to loan repayment | 11(13.6) | 50(61.7) | 4(4.9) | 11(13.6) | 5(6.2) | 3.63 | 0.878 |
| 5.Flexible repayment periods improve loan repayment and MFI profitability | 9(11.1) | 47(58.0) | 3(3.7) | 16(19.8) | 6(7.4) | 3.47 | 0.852 |
| 6.Generally credit standards influence MFI profits | 10(12.3) | 49(60.6) | 5(6.2) | 10(12.3) | 7(8.6) | 3.56 | 0.829 |
| **Valid listwise 81** | | | | | | | |
| **Grand mean = 3.453** | | | | | | | |


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From table 2, most respondents agreed (50.6%) and strongly agreed (6.2%) that use of customer credit application forms improved monitoring and credit management, while 53.1% and 8.6% agreed and strongly agreed respectively that use of credible credit standards checks on regular basis enhances profitability of MFI, implying that use of accredited forms and consistent credit standard checks ha a positive bearing on MFIs profitability.

In regard to interest rates as parameter also used in determining credit standards, 49.4% and 7.4% of respondents agreed and strongly agreed respectively, that interest rates charged affected profitability of the MFI while 61.7% and 13.6% agreed and strongly agreed respectively that penalty for late payment enhances customers commitment to loan repayment. This implied feasible interest rates and penalty for late payment encourages customers to oblige in loan repayments which then boost MFIs profitability. More so, most respondents agreed (58.0%) and strongly agreed (11.1%) that flexible repayment periods improve loan repayment and MFI profitability. This means stringent loan repayment periods may discourage would be customers, thus, flexible repayment periods encourage more customers, improve MFI total loan ratio, which can then positively influence MFIs profitability.

On overall, most respondents agreed (60.6%) and strongly agreed (12.3%) that generally credit standards influence MFI profitability. This is supported by Binks et al. (2002) who found that asymmetric information led to adverse selection of borrowers, poor credit control, lack of technology which resulted in riskier loan recovery, consequently affecting profitability of MFIs. Mix Market (2015) in their assessment of MFIs also found out that 50% of rural MFIs were making losses because they lacked effective credit standard techniques, thus the need for MFIs to adopt effective credit standards.

**Table 3: Descriptive statistics; Loan Portfolio Diversification**

| | Frequency and percentages (%) | | | | | | |
|---|---|---|---|---|---|---|---|
| **Statement** | **5** | **4** | **3** | **2** | **1** | **mean** | **Std.dev** |
| 1.Loan portfolio diversity influences loan repayment rates and MFI profitability | 7(8.6) | 41(50.6) | 8(9.9) | 19(23.5) | 6(7.4) | 3.31 | 0.845 |
| 2.Use of customer clarification mechanisms is a viable credit Control measure that influence MFI profitability | 10(12.3) | 47(58.1) | 6(7.4) | 10(12.3) | 8(9.9) | 3.51 | 0.863 |
| 3.Type of businesses our customers are engaged in influence loan repayment and MFI profitability | 9(11.1) | 48(59.3) | 5(6.2) | 12(14.8) | 7(8.6) | 3.49 | 0.742 |
| 4.Regulatory mechanisms that guide portfolio diversification influences loan repayment and MFI profitability | 8(9.9) | 45(55.5) | 7(8.6) | 16(19.8) | 5(6.2) | 3.47 | 0.906 |
| 5.The cost of portfolio diversification & Choices to diversify into new sectors affects loan repayment and MFI profitability | 6(7.4) | 47(58.0) | 4(4.9) | 16(19.8) | 8(9.9) | 3.35 | 0.873 |
| 6.Generally loan portfolio diversification influence MFI profits | 11(13.6) | 48(59.2) | 5(6.2) | 9(11.1) | 8(9.9) | 3.56 | 0.962 |
| **Valid listwise 81** | | | | | | | |
| **Grand mean = 3.448** | | | | | | | |


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From table 3, most respondents agreed (50.6%) and strongly agreed (8.6%) that loan portfolio diversity influences loan repayment rates and MFI profitability, implying MFI should have diverse loan products. Further, 58.1% and 12.3% of respondents agreed and strongly agreed respectively that use of customer clarification mechanisms is a viable credit control measure that influence MFI profitability, implying that customer clarification assists in identifying credible customers that have highest possibility of loan repayments.

Further, 59.3% and 11.1% of respondents agreed and strongly agreed respectively that type of businesses our customers were engaged in influence loan repayment and MFI profitability, implying that MFIs also assess business risk of customers before advancing loans so as to ensure that riskier business types do not negatively affect loan repayments which definitely can have a negative bearing on MFI profitability.

More so, 55.5% and 9.9% of respondents agreed and strongly agreed respectively that regulatory mechanisms that guide portfolio diversification influences loan repayment and MFI profitability, implying that feasible regulatory mechanisms that encourage portfolio diversification influences loan repayment and MFI profitability. In regard to costs, 58.0% and 7.4% of respondents agreed and strongly agreed respectively that the cost of portfolio diversification and choices to diversify into new sectors affects loan repayment and MFI profitability.

On overall, most respondents agreed (59.2%) and strongly agreed (13.6%) that generally loan portfolio diversification influence MFI profits. The grand mean was 3.448 rounded off to 4 which is agree on the Likert scale of measurement, meaning that most respondents were of the view that loan portfolio diversification really influences MFI profitability. This was supported by Winton (1999) who theoretically investigated conditions under which loan diversification is beneficial to financial lending institutions and found that financial lending institutions benefits most from diversifying across economic sectors when it has moderate default risk. Thus, loan diversification could decrease a financial lending institution's probability of failure if it has a low degree of credit risk and a downturn in one sector can lead to bankruptcy due to loan delinquency rates.

**Table 4: Descriptive statistics; Technical efficiency**

| | Frequency and percentages (%) | | | | | | |
|---|---|---|---|---|---|---|---|
| **Statement** | **5** | **4** | **3** | **2** | **1** | **mean** | **Std.dev** |
| 1.Hiring of top technical operations experts influence MFI profitability | 7(8.6) | 44(54.4) | 4(4.9) | 18(22.2) | 8(9.9) | 3.39 | 0.898 |
| 2.Regular implementation of new quality &effective technical operations systems influences MFI profitability | 6(7.4) | 43(53.1) | 5(6.2) | 20(24.7) | 7(8.6) | 3.26 | 0.870 |
| 3.Continuous improvement in quality technical controls influences MFI profitability | 5(6.2) | 47(58.0) | 4(4.9) | 16(19.8) | 9(11.1) | 3.48 | 0.886 |
| 4.Technical operational efficiency affects MFI profits | 8(9.9) | 48(59.2) | 6(7.4) | 11(13.6) | 8(9.9) | 3.46 | 0.752 |
| 5.Cost effective technical operations influence MFI profitability | 7(8.6) | 45(55.6) | 5(6.2) | 18(22.2) | 6(7.4) | 3.44 | 0.844 |
| 6.Generally technical efficiency influence MFI profits | 10(12.3) | 49(60.6) | 4(4.9) | 11(13.6) | 7(8.6) | 3.74 | 0.941 |
| **Valid listwise 81** | | | | | | | |
| **Grand mean = 3.462** | | | | | | | |


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From table 4, most respondents agreed (54.4%) and strongly agreed (8.6%) that hiring of top technical operations experts influence MFI profitability, implying that MFI that recruit employees with niche financial skills will ensure efficient financial management of MFIs. Secondly, 53.1% and 7.4% of respondents agreed and strongly agreed respectively that Regular implementation of new quality and effective technical operations systems influences MFI profitability, meaning effective technical financial operations can boost MFI financial performance. In this connection, 58.0% and 6.2% of respondents also agreed and strongly agreed respectively that continuous improvement in quality technical controls influences MFI profitability, that is, continuous upgrades in quality technical financial controls can boost financial performance of MFIs.

Further, 59.2% and 9.9% of respondents agreed and strongly agreed respectively that technical operational efficiency affects MFI profits while 55.6% and 8.6% of respondents also agreed and strongly agreed respectively that cost effective technical operations influence MFI profitability. This therefore means that MFIs that ensure efficient and cost effective technical operations can realize a positive improvement in their financial performance as measured by profitability.

In summary, most respondents agreed (60.6%) and strongly agreed (12.3%) that generally, technical efficiency influence MFI profits. The grand mean is 3.462 rounded off to 4 which is agree on the Likert scale of measurement, meaning that most respondents were of the view that technical efficiency really influences MFI profitability. This is supported by Caves & Barton, (1991) assertion that when checking the firm's performance on theoretical and empirical grounds it is necessary to measure efficiency score at firm level, thus, a researcher has to work on firm level analysis to examine the best ways to increase the efficiency of any firm because economic growth depends on firm's financial performance. In literature, the financial operational function has been used for measuring financial efficiency of firms. Technical efficiency is thus to achieve best possible financial output from any combination of inputs that have been chosen.

**Inferential statistics**

**Correlation analysis**

In this study (table 5 on correlation analysis), the highest correlation coefficient between all pairs of independent variables (credit risk management, credit standards, loan portfolio management, and technical efficiency) was 0.806, which was below the threshold of 0.9, thus multicollinearity assumption was checked and met.

**Table 5: Correlation analysis**

| | | Credit Risk Management | Credit Standards | Loan Portfolio | Technical Efficiency | ROA |
|---|---|---|---|---|---|---|
| Credit Risk Management | Pearson Correlation | 1 | | | | |
| | Sig. (2-tailed) | | | | | |
| | N | 81 | | | | |
| Credit Standards | Pearson Correlation | .636** | 1 | | | |
| | Sig. (2-tailed) | .000 | | | | |
| | N | 81 | 81 | | | |
| Loan Portfolio | Pearson Correlation | .622** | .605** | 1 | | |
| | Sig. (2-tailed) | .000 | .000 | | | |
| | N | 81 | 81 | 81 | | |
| Technical Efficiency | Pearson Correlation | .617** | .610** | .634** | 1 | |


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| | | | | | |
|---|---|---|---|---|---|
| | Sig. (2-tailed) | .000 | .000 | .000 | |
| | N | 81 | 81 | 81 | 81 |
| ROA | Pearson Correlation | .777** | .794** | .806** | .738** |
| | Sig. (2-tailed) | .000 | .000 | .000 | .000 |
| | N | 81 | 81 | 81 | 81 |

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

**Multiple regression analysis**

Multiple regression analysis was computed to assess the combined effects of the conceptualized independent variables (credit risk management, credit standards, loan portfolio diversification, technical efficiency) on the dependent variable (profitability of MFIs in Homabay County). This was after the mandatory assumptions of multiple regression analyses were checked and met. The results were displayed in table 6.

Table 6 showed the multiple regression results of the combined effects of the independent variables (credit risk management, credit standards, loan portfolio diversification, technical efficiency), and the F statistics was significant (F = 72.522; significant at *p<.001*), thus confirming the fitness of the model. For an $R^2$ of 0.792 showed that the study explained 79.2% of variation in the profitability of MFIs in Homabay County, while other factors not in the study model accounted for 20.8%, hence, it was a good study model.

**Table 6 : Multiple regression analysis**

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | R Square Change | F Change | df1 | df2 | Sig. F Change |
| 1 | .890[a] | .792 | .781 | .51679 | .792 | 72.522 | 4 | 76 | .000 |

**ANOVA[b]**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 77.473 | 4 | 19.368 | 72.522 | .000[a] |
| | Residual | 20.297 | 76 | .267 | | |
| | Total | 97.770 | 80 | | | |

a. Predictors: (Constant), Technical Efficiency, Loan Portfolio Diversification, Credit Risk Management, Credit Standards

b. Dependent Variable: ROA

Further, from the values of unstandardized regression coefficients with standard errors in parenthesis, all the independent variables (credit risk management; β = 0.291 (0.080) at *p<0.01*; credit standards; β = 0.356 (0.142) at *p<0.05;* loan portfolio diversification; β = 0.362 (0.073) at *p<0.05,* technical efficiency; β = 0.420 (0.072) at *p<0.01)* significantly influenced profitability of MFIs in Homabay County (dependent variable). Thus the multiple regression equation was;

***(v) $y= 0.305 +0.291X_1+0.356X_2+ 0.362X_3 + 0.420X_4$***

Where;

y= profitability of MFIs in Homabay County

$X_1$= credit risk management

$X_2$= credit standards

$X_3$= loan portfolio diversification

$X_4$= technical efficiency



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**Table 7: Coefficients[a]**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | | |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | t | Sig. |
| 1 | (Constant) | .305 | .082 | | 3.693 | .000 |
| | Credit Risk Management | .291 | .080 | .297 | 3.642 | .000 |
| | Credit Standards | .356 | .142 | .341 | 2.515 | .014 |
| | Loan Portfolio Diversification | .362 | .073 | .388 | 4.971 | .000 |
| | Technical Efficiency | .420 | .072 | .450 | 5.879 | .000 |

a. Dependent Variable: ROA

**Hypothesis testing**

Hypothesis one stated that credit risk management does not significantly influence profitability of MFIs in Homabay County, Kenya. The multiple regression analysis showed that credit risk management significantly influences the profitability of MFIs in Homabay County (β = 0.291 (0.080); at *p<.01*). Hypothesis one was thus rejected.

Hypothesis two stated that credit standards does not significantly influence profitability of MFIs in Homabay County, Kenya. The multiple regression analysis showed that credit standards significantly influences the profitability of MFIs in Homabay County (β = 0.356 (0.142); at *p<.05*). Hypothesis two was thus rejected.

Hypothesis three stated that loan portfolio diversification does not significantly influence profitability of MFIs in Homabay County, Kenya. The multiple regression analysis showed that loan portfolio diversification significantly influences the profitability of MFIs in Homabay County (β = 0.362 (0.073); at *p<.01*). Hypothesis three was thus rejected.

Hypothesis four stated that technical efficiency does not significantly influence profitability of MFIs in Homabay County, Kenya. The multiple regression analysis showed that technical efficiency significantly influences the profitability of MFIs in Homabay County (β = 0.420 (0.072); at *p<.01*). Hypothesis four was thus rejected.

**CONCLUSIONS AND RECOMMENDATIONS**

The study concluded that credit risk management is a significant predictor of MFI profitability, credit standards significantly influence MFIs profitability such that MFIs with feasible credit standards can realize an increase in profitability. Loan portfolio diversification is a viable measure by MFIs to help increase total loan ratio which can eventually boost MFIs profitability. MFIs with improved technical efficiency in its financial operations can minimize operational costs and consequently boost financial performance of the MFI.

The study recommended that; First MFIs should engage in credible credit risk management practices to minimize loan delinquency and improve MFIs profitability. Secondly, MFIs should formulate feasible credit standards that attract more customers while at the same time minimizing loopholes arising from credit risks. Thirdly, MFIs should carefully articulate the use of loan portfolio diversification so as to check its inverse effects on profitability so that they only roll out viable diverse loan products. Fourthly, MFIs must engage in technical efficiency so as to reduce operational costs which then can have a positive bearing on its return on assets.

**Areas for further research**

First, another study can be done on general financial growth of city-based MFIs so as to compare results. Secondly another study can be done on all registered MFIs in Kenya so as to capture a wider scope of financial performance of MFIs.

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