

**EFFECT OF LOAN PORTFOLIO MANAGEMENT ON THE
PROFITABILITY OF DEPOSIT TAKING MICROFINANCE INSTITUTIONS
IN NAIROBI COUNTY, KENYA.**

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**A Research Project Presented to Graduate School in Partial Fulfilment for the
Requirements of Master of Business Administration Degree of Egerton University**

EGERTON UNIVERSITY

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DECLARATION AND APPROVAL

Declaration

This research project is my original work and has never been presented in any other

University or college

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Approval

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DEDICATION

I dedicate this project to my lovely mother, sisters, brother, my wife and brother's wife for their moral and financial support throughout my studies.

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ABSTRACT

Loan portfolios are the major assets of the lending institutions, therefore they should be managed well to yield the desired profitability. Loan portfolio management is one of the most important activities in financial institutions and cannot be overlooked. Sound loan portfolio management is a prerequisite for microfinance institutions' stability and continuing profitability. As with any financial institution, the biggest risk in microfinance is lending money and not getting it back. The study sought to assess the effect of loan portfolio management on the profitability of Deposit Taking Microfinance Institutions in Nairobi, Kenya. Many studies have been done on loan portfolio management and the performance of microfinance institutions but none of them focused on the aforementioned study, instead they recommended more studies to be done on the microfinance institutions' profitability. The main objective of this study was to assess the effect of loan portfolio management on the profitability of Deposit Taking MFIs. The independent variables examined in order to determine MFIs' profitability are loan portfolio planning, client screening and loan portfolio monitoring. The study used a descriptive survey design. The population of the study was made up of all the Deposit Taking Microfinance Institutions operating in Nairobi County. A census was used to carry out the study. The study used primary data which was collected using questionnaires. The data collected was then tabulated and analysed using the Statistical Package for the Social Sciences. Multi regression was used to determine the effect of the independent variables on dependent variable. The results were presented in tables and graphs. The study found out that loan portfolio planning, client screening and loan portfolio control had significant influence on the profitability of Deposit Taking Microfinance Institutions. Planning is a significant factor, predicting up to 69.2% of the profitability, Client screening predicted up to 25% decrease in profitability, however, it is effectively carried out in most of the Deposit Taking Microfinance Institutions. The findings also showed that loan portfolio control was established as significant predictor of up to 51% of the profitability. The study concluded that loan portfolio management has a significant effect on the profitability of the Deposit Taking Microfinance Institutions in Nairobi County at 55.2%. The study recommended that Deposit Taking Microfinance Institutions should improve their loan portfolio control and client screening as this will help them reduce their portfolio risk, hence increase profitability.

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LIST OF ABBREVIATIONS AND ACRONYMS

ACCA	Association of Chattered Certified Accountants – Uganda
AMFI	Association for Microfinance Institutions
APM	Active Portfolio Management
AROA	Adjusted Returns on Assets
CBK	Central Bank of Kenya
CGAP	Consultative Group to Assist the Poor
DTMs	Deposit Taking Microfinance institutions. They provide financial services to low income group.
FSS	Financial Self-sufficiency
GDP	Gross Domestic Product
GoK	Government of Kenya
K-REP	Kenya Rural Enterprise Programme
KWFT	Kenya Women Finance Trust
LPM	Loan Portfolio Management
MFI s	Microfinance Institutions
MFPED	Ministry of Finance, Planning and Economic Development – Uganda
NGOs	Non-governmental Organizations
ROA	Returns on Assets
ROE	Returns on Equity
SDI	Subsidy Dependence Index
SMEP	Small and Medium Enterprise Programme
SPSS	Statistical Package for the Social Sciences
UNCDF	United Nations Capital Development Fund
USAID	United States Agency for International Development
USD	United States Dollars

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CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Loan portfolio constitutes loans that have been made or bought and are being held for repayment. Loan portfolios are the major assets of the lending institutions. The value of the loan portfolio depends not only on the interest rates earned on loans but also on the likelihood that interest and principal will be paid. Lending is the principal business activity for most commercial banks. The loan portfolio is typically the largest asset and the predominant source of revenue. As such, it is one of the greatest sources of risk to a bank's safety and soundness. Whether due to lax credit standards, poor portfolio risk management, or weakness in the economy, loan portfolio problems have historically been the major cause of bank losses and failures. Effective management of the loan portfolio is fundamental to a microfinance institution safety and soundness (Janson, 2002)

According to Koch and Wall (2000), loan portfolio management (LPM) is the process by which risks that are inherent in the credit process are managed and controlled. Because review of the LPM process is so important, it is a primary supervisory activity. Effective loan portfolio management begins with oversight of the risk in individual loans. Prudent risk selection is vital to maintaining favourable loan quality. Therefore, the historical emphasis on controlling the quality of individual loan approvals and managing the performance of loans continues to be essential. But, better technology and information systems have opened the door to better management methods. A portfolio manager can now obtain early indications of increasing risk by taking a more comprehensive view of the loan portfolio. Assessing LPM involves evaluating the steps the management takes to identify and control risk throughout the credit process. The assessment focuses on what management does to identify issues before they become problems. The identification and management of risk among groups of loans may be at least as important as the risk inherent in individual loans.

According to Robinson (2003), a microfinance institution (MFI) is a firm that provides financial services to low-income households in developing countries around the world. In the minds of many, microfinance and micro-credit are synonymous. Microfinance refers to all types of financial intermediation services provided to low-income households and enterprises in both urban and rural areas, including employees in the public and private sectors and the self-employed. According to Ejigu (2009), only a small fraction of the world population has

access to financial instruments, essentially because commercial banks consider the poor people as un-bankable due to their lack of collateral and information asymmetries.

Kenyan microfinance institutions have for a long time served the unbanked segments of the population despite several obstacles in their quest to access this niche. It is estimated that micro-enterprises contribute about 18 per cent of Kenya's gross domestic product and 25 per cent of non-agricultural GDP (Mwanza, 2010). As an industry, microfinance is a relatively new phenomenon in Kenya, with a few agencies starting over 20 years ago but the sector has been gaining the status of an industry only in the last 10 years. The Government of Kenya (GoK) has indirectly provided a boost to the microfinance sector. During 1992 to 1994, the GoK implemented a Structural Adjustment Program which has resulted in the liberalization of the economy. The Government of Kenya identified areas and projects needing external donor support, including small scale and microenterprise. Kenya Rural Enterprise Programme (K-REP, now the Sidian bank) can be considered the pioneer of NGO microfinance in Kenya. The experimental and financing activities of K-REP have had far reaching consequences, influencing the outreach of other NGO-MFIs (Ong'ayo, Otto and Musinga, 2002).

Microfinance institutions in Kenya are regulated under The Microfinance Act, 2006 and the microfinance regulations issued set out the legal, regulatory and supervisory framework. The Microfinance Act became operational with effect from 2nd May 2008. The principal objective of the Microfinance Act is to regulate the establishment, business and operations of microfinance institutions in Kenya through licensing and supervision. The Act enables Deposit Taking Microfinance Institutions licensed by the Central Bank of Kenya to mobilize savings from the general public, thus promoting competition, efficiency and access. It is therefore, expected that the microfinance industry will play a pivotal role in deepening financial markets and enhancing access to financial services and products by majority of the Kenyans (Central Bank of Kenya, 2013). Before the enactment of this bill, the over 200 MFIs operating in Kenya were unregulated unless they optionally entered the Association for Microfinance Institutions (AMFI), based in Nairobi and funded by a USAID grant. According to Mutua (2007) under the new bill, MFIs operating in Kenya are vulnerable to the fines imposed by the CBK that can reach up to Ksh 1 million (equivalent to USD 14,376) for every guideline to which they do not comply. The new regulations were to protect the 60 percent of the Kenyan population who are out of the scope of the formal banking services from bogus MFIs.

Loan portfolio management involves loan portfolio planning, client screening and portfolio control. In Deposit Taking Microfinance institutions (DTMs), loan portfolio planning deals with coming up with policies by which loans are segmented, priced, and their sizes and associated risks determined. This is carried out in such a way that loans are profitably extended to group- guaranteed, low-income individuals to help them realize their anticipated business or development goals. Client screening focuses on analysing and appraising the creditworthiness of applicants for loans in terms of their ability to service and repay the loans applied for. Loan portfolio control deals with loan disbursement, enforcing loan servicing, monitoring, repayment, and follow up actions (Aleema and Kasekende, 2001). Loan portfolio planning, client screening and portfolio control are all conducted with the sole objective of achieving desired loan portfolio profitability, which, itself is reflected in loan interest payment and loan repayment. Thus, when DTMs' profitability is not realized, questioning loan portfolio management becomes inevitable (Martin, 1996). In this study, the independent variables are portfolio planning, client screening and portfolio control and the dependent variable is profitability.

Profitability has been defined as the measure of whether the company is performing satisfactorily (Frank, 1996). Also, according to Pandey (1996) profitability is the measure of overall performance effectiveness of the firm. It is used to measure the performance of management, identifying whether a company may be worthwhile investment and determine the institutions performance relatives to its competitors. On the other hand, the indicators of profitability in the banking service include the profits earned by the bank, the growth and expansion prospects of the bank, the cost of operation that are incurred and the demand of loans. An institution should earn profits to survive and grow over a long period of time. Profits are essential nuts, it would be wrong to assume that every action initiated by management of the company should be maximizing profits irrespective of social consequences. It is a fact that sufficient profits must be earned to sustain the operations of the business to be able to obtain funds from investors for expansion and growth. According to Van Horne (2002) in general terms, profit is defined as the difference between revenue and expenses over a period of time. In economic sense, profits would mean net increase in the wealth; cash flows plus change in the value of the firm's assets. This definition incorporates the time dimension and therefore implies the discounted value (present value) or the stream of benefits. The accounting definition of profits is based on actual principle and includes non-cash items. It is assumed that items of revenue and expenses are on cash basis still there would be difference between

accounting profit and cash profit; the accountant charges depreciation which is a non cash item to computing accounting profits. Profit is the end result of operation of an organization. Profit maximization is taken by the traditional economic as the objective of a firm.

1.2 Statement of the Problem

The major goal of Deposit Taking Microfinance Institutions is the provision of loans to low-income and the poor households and taking deposits from them. The chance that the money (principal and interest) will be received back from the borrowers is the most common and the most serious vulnerability faced by deposit taking microfinance institutions. For the deposit taking microfinance institutions, loan portfolios are the largest and the most obvious source of credit risk. Since most of these microloans are unsecured, loans recovery rates diminish and the credit risk spreads quickly from a handful of loans to a significant portion of a portfolio (Bystrom, 2007). Due to this credit risk poised by loan portfolios, most deposit taking microfinance institutions have invested in effective loan portfolio management since it is fundamental to their safety and soundness. Effective management of the loan portfolio's credit risk requires that the management understand and control the deposit taking microfinance institution's profile and its credit culture. To handle this, the management must have a thorough knowledge of the portfolio's composition and its inherent risk (OCC 1997). Several studies have been done both locally and internationally on microfinance institutions' loan portfolio management on performance and profitability. Some of these studies revealed similar results whereas some contradict the findings. Rodgers (2013) carried out study on loan performance and the profitability of MFIs in Uganda. The results revealed that the risks of loans default were high, resulting to losses.

Sindani (2012) in her study on effectiveness of credit management system on loan performance: empirical evidence from micro finance sector in Kenya found out that the interest rates deemed to be low by the MFIs, were high to their clients, thus high rates of default resulting to negative effects on the performance of the loans. The higher the interest rates the lower the loan performance. Kalio and Kirui (2012) carried out a study on the influence of credit risk management practices on loan performance of microfinance institutions in Baringo County. The results revealed that credit risk management affects loan performance positively. Karekaho (2009) did a study on loan portfolio management and the performance of the microfinance institutions in Uganda. The study found out that, loan portfolio management enhances the performance of microfinance institutions. He recommended that a similar study

can be done in a different location or country. Furthermore, he recommended that a study relative to MFIs' profitability or investment needs to be done so as to come up with more empirical evidences regarding MFIs. The variability of findings in the aforementioned studies shows that there is a gap to be filled. Also none of the studies above focused on the effect of loan portfolio management on the profitability of Deposit Taking Microfinance Institutions in Kenya (Nairobi County). Therefore, this study is needed to bridge the gap.

1.3 Objectives

1.3.1 General Objective

To assess the effect of loan portfolio management on the profitability of deposit taking microfinance institutions

1.3.2 Specific Objectives

- i. To determine the effect of loan portfolio planning on the profitability of DTMs.
- ii. To assess the effect of client screening on the profitability of DTMs.
- iii. To determine the effect of loan portfolio control on the profitability of DTMs.
- iv. To ascertain the joint effect of loan portfolio planning, client screening and loan portfolio control on the profitability of DTMs.

1.4 Hypothesis

H0₁. Loan portfolio planning has no significant effect on the profitability of DTMs.

H0₂. Client screening has no significant effect on the profitability of DTMs.

H0₃. Loan portfolio control has no significant effect on the profitability of DTMs.

H0₄. The joint effect of loan portfolio planning, client screening and loan portfolio control has no significant effect on the profitability of DTMs.

1.5 Justification of the Study

The desire of financial inclusion of the poor population is the phenomenon being tackled by microfinance institutions. They are doing everything possible to avail the financial services to the most marginalised all over the world. They offer the loans to their clients at a relatively low cost which makes almost everyone to afford and utilise what is at their disposal. These low costs make the sustainability and the attainment of desired profitability very difficult since the recovery rate is always very low. This places most of MFIs into the danger of collapsing. Due to this difficulty in recovering the loans, microfinance institutions' management have invested in loan portfolio management since it is fundamental to their safety and soundness. It enables

them to plan, screen clients and control their loans as a portfolio, thus this could reduce the loans default therefore the desired financial performance might be attained. Since the LPM is vital as such to the MFIs, it should be assessed to ascertain how effective it is on their profitability. On the other hand, the study is significant to the policy makers in that it will enable them to put in place policies for compensation in case of any loans default. Also, the study will contribute significantly to the already existing literature, thus creating a pool of literature which could be useful to the scholars who are trying to bridge gaps in loan portfolio management.

1.6 Scope of the Study

The study was carried out in Nairobi County. The county was selected because all the DTMs are based or have branches there; thus made it an appropriate place to do this research. The study sought to find out the effect of loan portfolio management on the profitability of deposit taking microfinance institutions. The study consisted of loan portfolio planning, client screening and loan portfolio control as specific objectives. The study covered all the DTMs operating in Nairobi licensed by the Central Bank of Kenya. The study considered a period of two years (2016 – 2018). This period was appropriate in that, it enabled the researcher conceive the research idea, write up the proposal, defend the proposal and finally write up the final report. Also, the period was appropriate because it enabled the researcher to prepare the required research instruments and to contact the respondents to prepare in advance for the study.

1.7 Limitations and Delimitations of the Study

Microfinance institutions' management were reluctant in giving information. This is so because they wanted to prevent leakage to their competitors. To curb this, the respondents were assured of utmost confidentiality. Also they were informed that the study is for academic purposes only. Non-response by the management due to busy schedules did limit the study. To curb this, the respondents were encouraged to fill the questionnaires at their own convenient time. Brief and clear questions that were not of great task to the respondents were constructed.

1.8 Assumptions of the Study

The study assumed that, the respond rate was going to be excellent, therefore a formidable analysis would be made and a well-informed conclusion would be driven. Also, the study assumed that, the research design chosen would probably bring forth the desired inferences; hence a formidable conclusion would be made. Furthermore, the study assumed that the

independent variables would definitely affect the dependent variable either positively or negatively.

1.9 Operational Definition of Terms

Effect – A change that might result on DTMs' profitability based on loan portfolio management

Client screening – Determining the credit worthiness of clients

Deposits Taking Microfinance Institutions – microfinance finance institutions that take deposits from the public.

Loan - Money borrowed that is expected to be paid with interest

Loan portfolio - Total of all loans held by a DTM

Loan portfolio control – Monitoring and follow up actions on loans by DTMs

Loan portfolio management - Process by which loan portfolios are planned, controlled and clients screened to manage risks that are inherent in the credit process by DTMs

Loan portfolio planning – Segmenting, determining sizes and prices and ascertaining risks associated with the loans

Microfinance - Variety of financial services that target low income clients

Microfinance institutions – Organizations that give financial services to low income population

Profitability – Measure of financial performance of an organization

Portfolio - Collection of investments owned by an organization

CHAPTER TWO

LITERATURE REVIEW

2.1 Theoretical Review

Theoretical review presents theories that explain and enable the study in question to be understood. The theories to be discussed here are Asymmetric Information Theory and Credit Risk Modelling Theory.

2.1.1 Asymmetric Information Theory

Information asymmetry refers to a situation where business owners or managers know more about the prospects for, and risks facing their business, than do lenders. Generally, it describes a condition in which all parties involved in an undertaking do not know relevant information. In a debt market, information asymmetry arises when a borrower who takes a loan usually has better information about the potential risks and returns associated with investment projects for which the funds are earmarked. The lender on the other hand does not have sufficient information concerning the borrower. Asymmetric information is a problem in financial markets especially in borrowing and lending. Given the fact that the borrower always has better information than the lender, it makes it difficult for the lender to know whether the borrower will default or not since the banks do not have the data needed to screen credit applications and monitor borrowers. To some extent, the lender will try to overcome this by looking at past credit history and evidence of salary. However, this only gives limited information. The consequence is that lenders will charge higher rates to compensate for the risk. If there was perfect information, banks wouldn't need to charge this risk premium (Pettinger, 2012).

2.1.2 Credit Risk Modelling Theory

Credit risk modelling also known as structural approach entails a theoretical framework that describes the causality between the attributes of the borrowing entity and its potential bankruptcy. It was proposed largely as a logical extension of the Black-Scholes (1973) option pricing framework. It is conceived as a model for assessing the credit risk of a firm by characterizing the firm's equity as a call option on its assets. Alternatively, the debt holders of the firm could be viewed as holding a short put position on the firm's assets. The approach is referred to as the 'structural approach' because it relies entirely upon the capital structure of the firm (debt and equity) for modelling credit risk. It builds a setup within which credit events are triggered by movements of the firm's value relative to some pre-defined threshold or barrier (Merton, 1974).

Up to now, there are three quantitative approaches of analysing credit risk: structural approach, reduced form appraisal and incomplete information approach. The structural approach (structural credit risk model) also known as Asset Value Model is a model for assessing credit risk, typically of a corporations debt. The model assumes that, the modeller like company's managers have complete knowledge of its assets and liabilities, leading to a predictable default time. The reduced - form models, on the other hand is for pricing credit risk. It utilises multi-factor and dynamic analysis of interest rates to calculate the probability of default. The reduced – form models assume that, the modeller like the market has incomplete knowledge about the company's condition, leading to an inaccessible default time. The incomplete information approach combines the two (structural and reduced-form approaches). It is concluded that for pricing and hedging, reduced – form models are the preferred methodology (Crosbie and Bohn, 2003).

2.1.3 Active Portfolio Management (APM) Theory

For banks, credit risk has traditionally been viewed as something to be avoided. Loan losses were generally put down to poor decision making during the lending process, rather than being perceived as a predictable and integral part of the process of taking on the risk of uncertain future event in exchange for an increased return on investment. This mindset had huge ramifications –the direct effects of which we can see in many of today's banking institutions. Crucially, it meant that systems were designed with the explicit aim of preventing these lapses in judgement from occurring. At the same time, the focus on loss avoidance led lending institutions to set up elaborate credit infrastructures to support this.

Active credit portfolio management is defined as the technique that allows risk managers to measure returns against credit risk taken, enabling to fine tune portfolios to match credit risk appetites as well as optimising risk/return ratios. APM aims to reduce the likelihood of very high loan losses in any year due to concentration of risks. The implication is that banks looking to achieve this could choose to complement a strong origination force and a high-calibre credit risk department with an active portfolio management unit. Active portfolio management can result in a portfolio with the same level of income at less risk, a portfolio with more income for the same level of risk, or a portfolio with an optimised risk/return profile (Sarraf, 2006).

2.2 Loan Portfolio Management Process

2.2.1 Loan Portfolio Planning

According to Loans Analytics (2004), loan portfolio planning deals with portfolio policies such as loan segmentation, risk identification cost allocation, and profit maximization. Loan portfolio segmentation focuses on segmenting the loan portfolio into homogeneous sub-portfolios, with each sub portfolio having customers and loans with similar risk characteristics. The aim is to create a risk efficient portfolio and to maximize the portfolio return at a given level of risk. The MFIs are vulnerable to risk of default, failing to recover loaned money from those they lend and to realize expected returns, this casts doubts on how their portfolio segmentation is conducted. Secondly portfolio planning focuses on identification of sub-portfolio risk. The idea behind is that the foundation of effective loan portfolio performance is rooted in the probability of default and loss as estimated in accordance with the type and capacity of the businesses of customers in a given sub portfolio. According to Kagwa (2000), many sub portfolio risk estimation methods exist such as migration and sub portfolio stress testing, but for MFIs, the method usually employed to identify sub-portfolio volatility considers group guarantees determined according to the level of trustworthiness and cooperation that the MFI has with the customers in a particular sub portfolio. The use of this method is based on the rationale that most clients targeted by MFIs are poor people expected not to have the collateral required to secure loans under conditions of minimized risks. The method facilitates a decrease in portfolio risk through better risk identification and risk diversification, and increases portfolio profitability through the reduction of portfolio volatility and the increase in customer profitability.

The third policy in portfolio planning deals with the identification and allocation of loan origination costs, fixed overhead and servicing costs, and variable servicing and marketing costs over the total loan portfolio. These costs are allocated by loan type, loan size, and probability of default and loss given default. In other words, this step involves loan pricing, which itself focuses on setting or fixing the interest rate or the price a customer has to pay for using the loan extended by any lending institution and a MFI in particular. The fourth policy involves the maximization of stockholder value by creating a risk-efficient portfolio that maximizes the expected return for a given level of risk. From the above policies, it can be concluded that loan portfolio planning is a very critical process in the business life of a lending institution and MFIs in particular. It sets all the loan terms and conditions upon which the

success or failure of a MFI depends. It is therefore the basis of loan screening, control and performance.

2.2.2 Client Screening

Van Horne (2002) noted that client screening involves obtaining information on loan applicants, and then using the information to analyse and determine the creditworthiness of the applicants so as to make credit decisions. The information is obtained from the applicants' financial statements, credit ratings and reports, trade checking, and experience in business. This information helps in the analysis of not only the creditworthiness and ability of the applicant to meet the minimum standards for qualifying for the loan being applied for, but also the probability of bad debts. All this is done so as to take an informed decision as to the extension of any loan. He was, however, generally dealing with the management of financial policy but not with particular reference to microfinance institutions. Nonetheless, his observations can guide a study into how these institutions go about their client screening and how this affects their portfolio performance.

Hartmut (1997) looked at client screening from the perspective of loan demand and potential to repay. He noted that client screening deals with assessing the credit demand based on the repayment potential of loan applicants. For MFIs, it basically focuses on the repayment capacity of the applicants based on the analysed degree of credit worthiness, trustworthiness, type of business engaged in, and the level of faith that the MFI derives from the information given by the applicants. According to ACCA (2005) historical financial indicators can be used to screen clients. These indicators can be calculated from previous financial statements and used to assess past trends in liquidity, solvency, profitability, efficiency, and debt repayment capacity. This information is important to lenders as they evaluate the borrower's current financial position and how well the borrower has performed in recent years. These indicators should then be compared to the lender's underwriting standards to assess the individual borrower's creditworthiness. If an applicant's balance sheet shows that the applicant has more loans than assets, that is, if the applicant's equity to assets ratio is low, lending the applicant is at a greater risk of not recovering the loan extended. This is because low equity to assets ratio indicates that the applicant is at a greater risk of collapsing any time. On the other hand, a high equity to assets ratio indicates that the applicant is in a sound position and can service and repay the loan, regardless of whether the applicant has made profits or not.

Martin et al (2006) observed that many potential or targeted clients of MFIs do not always have the financial statements necessary to assess their credit worthiness and potential to repay. These authors therefore suggested that other parameters have to be considered. They pointed out in order to remain competitive in the market; MFIs have to continually consider the changing business characteristics and needs of loan applicants. The foundation for their success is built on sound customer screening systems that clearly recognize and understand the changing nature of the businesses of applicants. They have to look at issues like: Is the applicant a full-time business operator; is he in a sustainable business; and if the applicant wants start-up capital, is the business likely to succeed and continue in operational existence until the loan is paid? A clear understanding of these issues can help a great deal in identifying successful and less risky applicants. They concluded by noting that based on the answers to these questions, successful MFIs tend to group loan applicants according to their business characteristics, and to extend loans to only those whose likelihood of default is very low. In view of these observations, it is important to establish how MFIs in Kenya go about their client screening.

Meeker (1998), the problem with most of the MFIs, especially those dealing in lending to farmers, is that their client evaluation process is still rigid, despite all the more realistic considerations available to these institutions from the market conditions of agricultural outputs. All commercial lenders, including MFIs institutions, establish and maintain a basic process for making credit decisions. In particular, their evaluation of agricultural loans has traditionally been based on analysis of the five primary credit factors, often called the “five Cs of credit” for capacity, capital, collateral, character, and condition. For analytical purposes, these institutions typically assign a relative weight to each of these factors based on the specific circumstances for each individual borrower. He further added that while the foregoing five-factor-analysis model is a useful tool, credit analysis should increasingly emphasize the evaluation of the applicant’s future debt repayment capacity. This analysis should be based on various sources of information about the borrower that become more reliable and sophisticated as the complexity and size of business operation increase. This information can be accessed from historical financial indicators, credit bureau reports, an assessment of the borrower’s managerial abilities, and a demonstrated willingness to repay the loan. In general, client screening ensures that only those applicants with the least likelihood of defaulting are considered for loans.

2.2.3 Loan Portfolio Control

According to Kagwa (2000), loan portfolio control involves: loan monitoring, loan review and supervision to enforce loan servicing and repayment, and other follow up actions. Also according to Oketch (1998), loan control in MFIs also involves ensuring that loans are not disbursed anyhow but in accordance with the agreed terms for each prescribed sub portfolio. Berger and Gregory (2004), loan portfolio control focuses on keeping a close and sometimes supervisory eye on the way the disbursed loans are utilized. This is intended to minimize the risk of default resulting from misuse of the disbursed loans. It is also intended to advise and give clients information regarding how best they can put loaned money to business use. This means that portfolio control is necessary not only to benefit the lending institution but also to ensure that clients succeed in the business pursuits for which they seek loans. Control should therefore ideally ensure that loans are serviced, recovered and repaid in a manner that also helps the clients not to run out of business. The follow up actions For MFIs, include enforcing ways and means of loan recovery in case a client begins to show signs of defaulting or late repayment. Since MFI have no collateral to seize, they usually recover their loaned money by sharing out the defaulted amount of loan to all the members in the group that guaranteed the defaulter, and it is by effectively doing this that they can recover the money.

Mullineux & Murrinde (2002), optimal portfolio control strives to avoid unacceptable loans while making the right ones. More specifically, good portfolio control seeks to reduce risk while increasing growth and profits through high-quality loan volume. Reducing risk may be accomplished by evaluating credit applications against underwriting standards. Maintaining a consistent control mechanism is most often achieved through effective communication of board direction through plans, policies, procedures, and underwriting standards, including appropriate checks and balances over the lending operations. There must also be an internal control policy that provides adequate direction for establishing effective controls and accountability for the institution's operations, programs, and resources. This policy should be comprehensive and provide guidance for all operations.

Mullineux (1996) observed earlier that because of the inherent risk in lending operations, the regulation specifically calls for an internal control program to routinely review and assess the institution's assets. If properly designed and implemented, the board's policy and its system of internal controls provide an effective framework to accomplish management objectives, safeguard assets, maintain accurate financial reporting, and ensure compliance with laws and regulations. Effective internal controls prevent or guard against undesired actions and provide

continuing reasonable assurance that the institution is operating in a safe and sound manner. If an internal control policy or system is weak or lacking, risk exposure increases substantially, and the chances for effective performance and desired results are significantly reduced. He further asserted that an institution's lending operations should be controlled by a number of internal control components, which generally include a combination of both "preventive" and "detective" controls. In portfolio management, preventive controls ensure that transactions and activities are performed in compliance with set objectives. They can be implemented in a variety of ways, including: working within the established policies and procedures; risk parameters; loan underwriting standards; risk identification and classification systems; performance standards and appraisals; management information and reporting systems.

Duku (2004), detective controls focus on completed transactions. The purpose is to identify actions or activities that fall outside policy, procedure, or risk parameters and, therefore, are not in compliance with the set objectives or direction for portfolio management. Conditions identified through detective controls generally warrant management attention through remedial corrective actions or through plans that correct weaknesses. Detective controls generally include several processes such as: supervision, reviews of operations; internal loan review and classification systems; independent internal audit, appraisal, and credit reviews; external audits or examinations; management's corrective action. From the above-cited observations, it is clear that the planned loan portfolio performance is realized in accordance with the level of enforcing loan servicing and repayment. When there is failure to realize this performance, it is therefore not wrong to investigate the enforcement of loan servicing and repayment.

According to MFPED (2005), loan repayment and grace periods, especially for micro finance institutions that lend to agricultural clients, should be set and enforced in accordance with the period taken to get the first harvest of the crops invested in. It is unfair to expect a farmer of a crop that takes a year to be harvested to start servicing and repaying the loan before a year ends. Any lending institution that does not take this into consideration simply exists to exploit but not to help farmers and itself to survive in profitable business. These observations imply that prescriptive, concurrent and post facto forms of control have to be embraced and repayment periods set in accordance with the gestation periods.

2.3 Deposit Taking MFIs Profitability

According to Pandey (1996,) profitability is the measure of overall performance effectiveness of the firm. Also, profitability has been defined as the measure of whether the company is

performing satisfactorily (Frank, 1996). It is used to measure the performance of management, identifying whether a company may be worthwhile investment and determine the institutions performance relatives to its competitors. On the other hand, the indicators of profitability in the banking service include the profits earned by the bank, the growth and expansion prospects of the bank, the cost of operation that are incurred and the demand of loans. According to Lascelles (2008), it is widely known today that providing loans to micro-entrepreneurs has a relatively attractive potential to generate profits and growth. In some areas, like Asia, Africa and Latin America the profitability of MFIs is already squeezed by greater competition in the industry. Baxley (1996) and Van Horne (2002) agreed that the level of profitability achieved by a business enterprise is a good indicator of its success. The successful organizations are those that are able to win and retain customers. They see and seize business opportunity in the environment and turn this opportunity in terms of money. They also continuously create and keep customers by giving them products and services. Such organizations are characterized by high efficient, productivity, profitability, innovativeness and empowered people plus good customer base. According to CGAP (2003) financial ratios are available for assessing the performance of MFIs. They provide perspectives in assessing the performance of MFIs for each of the domains namely, profitability, efficiency, leverage and risk. In essence, interpreting the determinants of MFIs' financial performance, due cognizance should be taken as precise focus of each ratio. The financial profitability is measured by return on assets, return on equity, net interest margin and the loan to assets ratio. Net interest margin is used especially for evaluating bank's net profit on interest-earning assets and investment securities. Furthermore, the loan-to-assets ratio is another profitability measure that's used by investors to obtain a complete analysis of a bank's operations. Return on Equity (ROE) measures the returns produced for the owners. On the contrary, return on assets measures the per-dollar profit a bank earns on its assets. Since banks' assets largely consist of the bank loans, the return on asset is an important measure of bank's profitability. Return on Assets (ROA) measures and tracks MFIs' ability to generate income based on its assets. The ratio excludes non-operating income and donations. ROA provides a broader perspective compared to other measures as it transcends the core activity of MFIs namely, providing loans, and tracks income from operating activities including investment, and also assesses profitability regardless of the MFIs funding structure. ROA is expected to be positive as a reflection of the profit margin of the MFI, otherwise it reflects non-profit or loss. The kind of costs, revenues and interest rates that affect MFIs' profitability are explained below

2.3.1 Costs

MFIs that provide multiple microfinance services face various costs. In general it can be distinguished between costs related to financial services and functionally separate costs (direct and indirect costs). Sometimes it is not possible to separate or segment costs of MFIs easily because non-financial services, such as consultancy, training and technical assistance, are necessary to ensure good credit behaviour and risk minimizing. Costs that occur due to non-financial services are often cross-subsidized by financial service earnings. Costs directly attributable to the micro-financial services include for instance personnel expenses (e.g. salary for loan officers), refunding of staff transportation and training for loan officers, loan loss provision, and interest expense on borrowings that refinance the loan portfolio (Helms, 1998). Further the costs of MFIs can be generally categorized in fixed (e.g. office rent) and variable costs (e.g. travel expenses to meet clients). Rosenberg et al (2009), in general MFIs gain relatively little from economies of scale because microcredit is rather labour intensive: salaries make up the majority of most MFIs' operating expenses and fixed costs are relatively low compared with variable costs. Operating expenses of MFIs include most often personnel and administrative costs and represent a major part of charges to borrowers.

According to CGAP (2001), since the loan portfolio represents the biggest asset of a MFI, the non-payment of a loan is not only the biggest risk a MFI might face, but also a cost centre that is often underestimated. Also here the accounting for loan delinquency varies enormously among MFIs, but practically there are only two alternatives. Some of the institutions reschedule unpaid or non-performing loans with the borrower immediately while others write them off after it is sure that the loan cannot be paid back after a certain time period of default. The liquidation of collaterals like in a commercial bank is not an option since the business-model as such does not require them as a prerequisite of lending to a client. However it needs to be considered that MFIs will monitor closely and report on their borrower's loan servicing behaviour which means a timely controlling of collection or repayment rates as indicators of the relevant portfolio quality. These repayment rates are based on cash flows for a given period and as such, they do not report cumulative arrears in the portfolio. In most cases, a consistent repayment rate of 98 percent is not equivalent to a 2 percent loan loss rate. Repayment rates only measure the cash flow of the period and do not account for accumulated loss or increased future risk tied to those delinquent loans (UNCDF, 2009). So it is in any case important to undertake precautionary measures and provide sufficient loan loss provision in advance in order to measure the costs of loans correctly.

2.3.2 Revenues

Financial revenue from the loan portfolio is by nature of this business the main source of revenue for MFIs and has two components: interest charges and fees and commissions. Besides that, MFIs also obtain revenues from other sources beyond lending. The average MFI allocates only three-quarters of its assets as loan portfolio which creates the need to maximize the return of almost one-quarter of its assets in alternative activities beyond lending (Microfinance Bulletin, 2008b, 22-29). These returns in general represent interest on investments, net gains on financial assets and income from non-lending related services e.g. in rural areas: from trading seeds with the cooperative clients financed by their loans. Other operating revenue stems from the provision of services, including revenue from insurance or transfer services or non-financial revenue from the provision of financial services, such as the sale of passbooks or smartcards; including net exchange gains (Microfinance Bulletin, 2008b, 43). Another important cash inflow for the MFI is the often mandatory savings account of a client. These saving accounts are frequently a requirement for getting a loan.

The overall financial revenue can be summarized in the following formula:

$$\text{Financial Revenue} = \text{Revenue from Loan Portfolio} + \text{Revenue from Other Financial Assets} + \text{Revenue from Other Financial Services} \text{ (Microfinance Bulletin, 2008b, 32)}$$

For the revenue from loan portfolio the formula is:

$$\text{Revenue from Loan Portfolio} = \text{Interest on Loan Portfolio} + \text{Fees and Commissions on Loan Portfolio} \text{ (Microfinance Bulletin, 2008b, 32)}$$

In these formulas the interest on loan portfolio is the interest earned on outstanding loans. Fees and commissions represent penalties for delayed payments, commissions for loan officers and other fees like handling of credit application. Donations are typically shown separately in order to present pure and real income from microfinance operations. Larger loans as well as higher interest rates would result in more income for MFIs and make them more profitable due to cost and some scale effects. On the other side this might create large disadvantages for the poor target clients who are dependent on the loan and might have difficulties in paying back larger amounts.

2.3.3 Interest charges/rates

It is argued that high interest rates make it possible to grow the industry of microfinance and expand the outreach in breadth and depth because many MFIs are able to cover their costs and

use profits to give out more loans to an even larger number of people in areas otherwise unattractive. As a consequence, interest rates ceilings, imposed by governments, would inversely affect the outreach of MFIs because they are not able to meet their cost and cannot operate efficiently. This results in a restriction to further expand the lending operations to a larger number of poor people. Often MFIs get donations or subsidies that are passed on to its clients at a lower rate and so practically subsidized rate of interest. This adjustment may result in an operating loss for the institutions because with the remaining spread on top of interest rate subsidies, they might not be able to cover their costs efficiently and are dependent on the support and availability of such funds from then on (Microfinance Bulletin, 2008a, 70)

The interest rate ceilings imposed by governments create an artificial and not compliant barrier to the business in terms of free market mechanism and so, hurt poor people even more since it restricts MFIs to fully cover their costs by the income from interest rates. At the end, and in consequence this might force them to give loans to better-off and richer people only, who tend to ask for larger loans. In the Philippines for example credit subsidies by low interest rates had worsen income distribution because only a few, typically well-off farmers, receive the bulk of the cheap credit. When interest rates are not allowed to reflect costs of financial intermediation, wealth and political power replace profitability as the basis of allocating credit (Armendáriz and Morduch, 2005).

To sum it up, the financial profitability of a DTM is measured by return on assets, return on equity, net interest margin and the loan to assets ratio. Return on Assets (ROA) measures and tracks MFIs' ability to generate income based on its assets. The ratio excludes non-operating income and donations.

$$\text{ROA} = \frac{\text{After-tax profits}}{\text{Starting (or period-average) assets}}$$

Starting (or period-average) assets

This is an appropriate indicator for unsubsidized institutions. But donor interventions more typically deal with institutions that receive substantial subsidies, most often in the form of grants or loans at below-market interest rates. In such cases, the critical question is whether the institution will be able to maintain itself and grow when continuing subsidies are no longer available. To determine this, normal financial information must be "adjusted" to reflect the impact of the present subsidies. Three subsidy-adjusted indicators are in common use:

Financial Self-sufficiency (FSS), Adjusted Return on Assets (AROA), and the Subsidy Dependence Index (SDI).

$$\text{FSS} = \frac{\text{Adjusted operating income}}{\text{Adjusted operating expenses}}$$

FSS measures the extent to which operating profits cover an MFI's costs. It however measures how much coverage exists on an adjusted basis.

$$\text{AROA} = \frac{\text{Adjusted operating profits}}{\text{Average total assets}}$$

AROA is a ratio that measures financial return over a given period on a set of assets whose value varies from the beginning to the end of the period; average total assets for the period are used in the denominator.

$$\text{SDI} = (1/\text{FSS} - 1) + \frac{\text{Donations}}{\text{Revenues}}$$

SDI allows an MFI to measure its subsidy dependence as the percentage increase in its current average interest rate charged on loan products in order to eliminate all current subsidies. (CGAP, 1999)

2.4 Effect of Loan Portfolio Management on Profitability of DTMs

2.4.1 Effect of Loan Portfolio Planning on DTMs' Profitability

King and Levine (1994), loan portfolio planning affects profitability through the outcomes of the planning policies employed to plan for loan portfolio. Indeed, the portfolio segmentation planning policy aims at creating a risk efficient portfolio and to maximize the portfolio return at a given level of risk. The goal is to reduce portfolio risk and volatility while maintaining and/or increasing portfolio risk-adjusted returns. In so doing, it examines risks involved in extending particular loans, thereby predicting the extent of the likely default and loan repayment both of which are clear components of profitability. According to Getubig (1987) regarded risk identification, which is also a loan planning policy, as the foundation of effective loan portfolio management towards the profitability. He noted that this policy centres on minimization of risk through accurate estimation of probability of default and loss in view of the type and capacity of the businesses of customers in a given sub portfolio. Antonio (2000)

added that the method facilitates a decrease in portfolio risk through better risk identification and risk diversification; that it also increases portfolio profitability through the reduction of portfolio volatility and the increase in customer profitability. Harmut (1997) the planning policy involving identification and allocation of costs is essentially about loan pricing. It focuses on setting or fixing the interest rate or the price a customer has to pay for using the loan extended by the MFI. The loan portfolio planning process affects profitability positively if the planning process is done well and vice versa if wrongly done.

2.4.2 Effect of Client Screening on DTMs Profitability

Berger and Gregory (2004) observed that client screening is carried out for purposes of ensuring that the loaned money will be recovered with minimum default. They added that the proper accomplishment of client screening requires management to have adequate knowledge about loan applicants. This helps to establish whether applicants will afford to service and repay the loans. In essence, effective client screening is the only way client ability to service and repay the loan is established and likely default is minimized. When it is well carried out, the MFI is bound to achieve its planned loan portfolio performance which translates to its profitability. Proper client screening establishes which client is worthy lending, since it is based on financial statements that show not only the financial position of a client but also his/her state of income, inflows and outflows. ACCA (2005) noted that when a client's financial position indicates that his business is more financed by loans, extending more loans to such a client is tantamount to making him more indebted, thereby increasing his likelihood of failure to service and repay the loans. The success of any MFI depends on how best it carries out client screening regarding the market potential and characteristics of the business for which the loan is sought. Poor client screening leads to poor loans repayment, thus low profitability and vice-versa.

2.4.3 Effect of Loan Portfolio Control on DTMs profitability

According to Antonio (2000), portfolio control is intended to minimize the risk of default resulting from misuse of the disbursed loans. It is intended to advise clients and give them information regarding how best they can put loaned money to business use required to service, recover and repay the loan without having to run out of capital. This way, control helps to ensure that loan servicing and repayment are achieved in a manner that does not overwhelm clients (Martin, 1996). It also involves enforcing ways and means of loan recovery in case a client begins to show signs of defaulting or late repayment. Since MFIs have no collateral to seize, they usually adopt control measures that recover loaned money by sharing out the defaulted amount of loan to all the members in the group that guaranteed the defaulter, and it

is by effectively doing this that they can recover the money (Garber, 1997). Therefore, if loan portfolio control is well carried out, the desired portfolio performance is met, hence profitability to the MFIs and vice versa if wrongly done.

2.5 Empirical Studies

Wakaria (2016) carried out a study on the effect of credit management on the financial performance of microfinance institutions in Kenya. The researcher used descriptive research design as it draws in a comprehensive analysis of credit risk management and its correlation with financial performance in microfinance institutions. The researcher used secondary data (2011 – 2015) gathered from the study population of 13 deposit taking microfinance institutions licensed by Central Bank of Kenya and 22 non deposit taking microfinance institutions. The study's specific objectives were credit risk, liquidity risk and interest rate risk. The study found out most microfinance institutions in Kenya are faced with credit risk as depicted by the significant negative relationship between the financial performances (measured by return on equity) and credit risk. A unit increase in credit risk holding other factors constant resulted in a 2.165 decrease in the return on equity which is the highest negative association when compared to other forms of risks. The study recommended that the microfinance institutions in Kenya must pay constant attention to credit risk being a major risk to non-performing loans.

Nkuah (2015) carried out a study on the effect of loan portfolio quality on the performance of banks in Ghana. The study employed panel regression techniques. Among various data techniques, fixed effect model was identified as the best technique based on Hausman test between fixed and random effect. The study population was made up of 10 Ghanaian universal banks. The data for the study was obtained from secondary source (2007 - 2013). The return on equity and net interest margin were used to proxy financial performance while loan portfolio profitability and loan loss provision/gross loan advances were used as proxies for loan portfolio quality. The findings of the study established that loan portfolio quality has significant effect on the financial performance of the selected Ghanaian universal banks. The study recommended that universal banks in Ghana should develop effective and efficient strategies and policies to improve the quality of their loans in order to improve their profitability. It further recommended that, efficient cost management must be adopted by Ghanaian universal banks to improve performance.

Adamu, et al (2014) carried out a study on credit portfolio management in microfinance banks using the lending methodologies in Nigeria. They found out that the success of microfinance banks is dependent on the effective and efficient management of its credit portfolio. The risk portfolios proved to be the source of recurring problems and the cause of failure for many microfinance banks. Credit policies, procedures, systems and controls do not always assure asset quality and earnings. They asserted that practical approach is therefore necessary for effective loan portfolio management. They recommended that the practical approach is needed by microfinance banks and the need to have operations research experts among the bank's employees. Operation Research experts could use their wealth of experience in both objective and quantitative problem solving skills to continually carry out research on causes of loan defaults in Microfinance Banks and recommend optimum solutions.

George et al (2013) carried out a study on the analysis of the loan portfolio management on organization profitability: a case of commercial banks in Kenya using a descriptive survey. Their analysis was based on variables such as the profitability measures, interest expense, administrative cost, and asset value at the organizational level. They picked a sample at the management level. Using regression analysis, they found out that, the loan portfolio has a direct influence on the profitability of the banks whereas non-performing loans and the new loans have different impact on the profitability of the bank. They further asserted that, the interest expense was rated highly as a factor that works to reduce the profits. They also pointed out that, the administration costs especially salary and overheads were utterly blamed on reducing profitability. Their findings further revealed that, the depreciation of assets and the provisions was seen as a dent to profitability of any bank. However, it was also noted that the size of bank by asset value does not per se translate to higher profitability but it is a key fact for profitability efficiency.

Rodgers (2013) in his study on loan performance and profitability of microfinance institutions in Uganda used both quantitative and qualitative information (data) from questionnaires and interviews. The study design was mainly descriptive, analytical and explanatory. The research findings revealed that most of loan clients are affected by the loan period so as to meet their payment obligations. Most of the loan clients borrow for business purposes, the loan advanced was not adequate, the interest rates were very high and borrowers were not allowed participation in loan negotiation as terms and conditions are predetermined by the bank. The findings further revealed that expenses incurred by the borrowers from the time of application up to the time of repayment of the loans were too high, default rate was high, and not all the

staff agreed that they monitor projects which are advanced and the bank does not motivate its clients to repay the loans.

Sindani (2012) in her study on effectiveness of credit management system on loan performance: empirical evidence from micro finance sector in Kenya. The study found out that credit terms formulated by the microfinance institutions do affect loan performance; the involvement of credit officers and customers in formulating credit terms affects loan performance. Interest rates charged had a negative effect on the performance of the loans, the higher the interest rates the lower the loan performance. Credit risk controls adopted by microfinance institutions have an effect on loan performance, credit insurance, signing of covenants with customers, diversification of loans, credit rating of customers, reports on financial conditions, refrain from further borrowing had an effect on loan performance. Collection policies adopted by microfinance institution had an effect on loan performance, stringent policy had a great impact on loan performance, and the lenient policy had an effect but was not as great as that of stringent policy.

Kalio and Kirui (2012) carried out a study on the influence of credit risk management practices on loan performance of microfinance institutions in Baringo County. The study employed a descriptive design. They considered the technique appropriate because it enabled them to obtain factual information from the respondents. The target population in their study was 7 managers and 88 credit officers in MFIs in Baringo County. Census technique was used because all branch managers and credit officers were directly targeted in their study. They found out that, there is a strong positive relationship between client appraisal and loan performance of MFIs.

Musyoki et al (2012) carried out a study on the impact of credit risk management on the financial performance of banks in Kenya. The research design used for the study was descriptive. The population of interest was the 48 banks that operate in Kenya. The variables studied were default rate, bad debt cost and cost per loan asset on bank financial performance. The results of the study showed that credit risk management is an important predictor of bank financial performance thus success of bank performance depends on risk management to the extent of around 36%. The study results also showed that default rate as one of the risk management indicator is a major predictor of the bank financial performance to the extent of 54% and followed by bad debt cost at 9.3% and lastly slightly influenced by cost per loan asset up to 3.7%. Credit risk management is crucial on the banks performance since it has a

significant relationship with bank performance and contributes up to 35.6 % of the bank performance. They further asserted that, among the risk management indicators, default rate management is the single most important predictor of the bank performance since it influences 54% of the total credit risk influence on bank performance. Risk management indicators such as bad debt cost and cost per loan asset are not significant predictors of bank performance.

Gatuhu (2011) in her study on the effect of credit management on the financial performance of microfinance institutions in Kenya using a descriptive survey design on all the MFIs registered under AMFI found out that the variables; client appraisal, credit risk control and collection policy have effect on financial performance of MFIs. She asserted that there is a strong relationship between financial performance of MFIs and client appraisal, credit risk control and collection policy. She further asserted that a unit increase in client appraisal would lead to increase in financial performance of MFIs in Kenya; this is an indication that there is positive association between client appraisal and financial performance of MFIs, an increase in credit risk control would lead to increase in financial performance of MFIs in Kenya, which shows that there is positive relationship between financial performance of MFIs and credit risk control and a unit increase in collection policy would lead to increase in performance; this is an indication that there is a positive relationship between financial performance of MFIs and collection policy. Client appraisal, credit risk control and collection policy significantly influence financial performance of MFIs in Kenya.

Karekaho (2009) in his study on loan portfolio management and the performance of microfinance institutions in Uganda, Wakiso District, using an analytical and cross sectional survey focusing on both qualitative and quantitative data found out that the portfolio planning, client screening and portfolio control are related significantly with the portfolio performance of MFIs, but the strongest relationship was between portfolio control and the performance of MFIs. In addition, they asserted that, although all the independent variables predicted a significant proportion of this performance, the most significant individual predictor was again portfolio control dominated by loan monitoring. The results, therefore, indicated that if MFIs are to achieve the desired portfolio performance, they have to consider all these independent variables but putting more emphasis on their loan portfolio control generally and loan monitoring in particular.

2.6 Research Gap

MFIs play a critical role in economic development and their financial performance is a key indicator of their growth. They avail financial services to a large number of people who are deemed to be poor because they rarely afford the services of commercial banks. This therefore puts their operations in jeopardy since these poor individuals who are their clients might default on the loans. Given this predicament, they have invested in loan portfolio management to at least cover their operations costs and attain a desired profitability. This profitability is therefore essential to enhance their growth and expansion to reach even more clients at the periphery, thus contributing tremendously to the economic development. The MFIs' operations have attracted various researchers to study widely on issues relating to credit management, portfolio management, performance and profitability. Therefore, some of the prior empirical studies reviewed above focused on credit risk management and the performance of MFIs, and loan portfolio management and the performance of microfinance institutions. Some of the studies gave contradicting results in their findings.

Kalio and Kirui (2012) carried out a study on the influence of credit risk management practices on loan performance of microfinance institutions in Baringo County. The results revealed that credit risk management affects loan performance positively. Sindani (2012) in her study on effectiveness of credit management system on loan performance: empirical evidence from the micro finance sector in Kenya found out that the interest rates deemed to be low by the MFIs, are high to their clients, thus high rates of default resulting to negative effects on the performance of the loans. The higher the interest rates the lower the loan performance. Karekaho (2009) did a study on loan portfolio management and the performance of the microfinance institutions in Uganda. The study found out that, loan portfolio management enhances the performance of microfinance institutions. He however, recommended that a similar study can be done in a different location or country. Furthermore, he recommended that a study relative to MFIs' profitability or investment needs to be done so as to come up with more empirical evidences regarding MFIs. Though some of the researches have been done to bridge the gap, none of them explained the effect loan portfolio management may have on the profitability of DTMs in Kenya.

Rodgers (2013) examined the loan performance and the profitability of microfinance institutions in Uganda using a descriptive survey. The study found out that the rate of default is high since the clients are affected by interest rates and loan periods to meet their obligation, thus losses to the MFIs. George, et al (2013) did an analysis of loan portfolio management on

the profitability of commercial banks in Kenya using descriptive survey. The study found out that loan portfolio management has a direct influence on the profitability. Therefore, the research done in Kenya focused on commercial banks rather than microfinance institutions, this shows that, there is still a gap needed to be bridged on the profitability of microfinance institutions in Kenya. Therefore the study sought to assess the effect of loan portfolio management on the profitability of deposit taking microfinance institutions (DTMs) in Kenya, Nairobi County.

2.7 Conceptual Framework

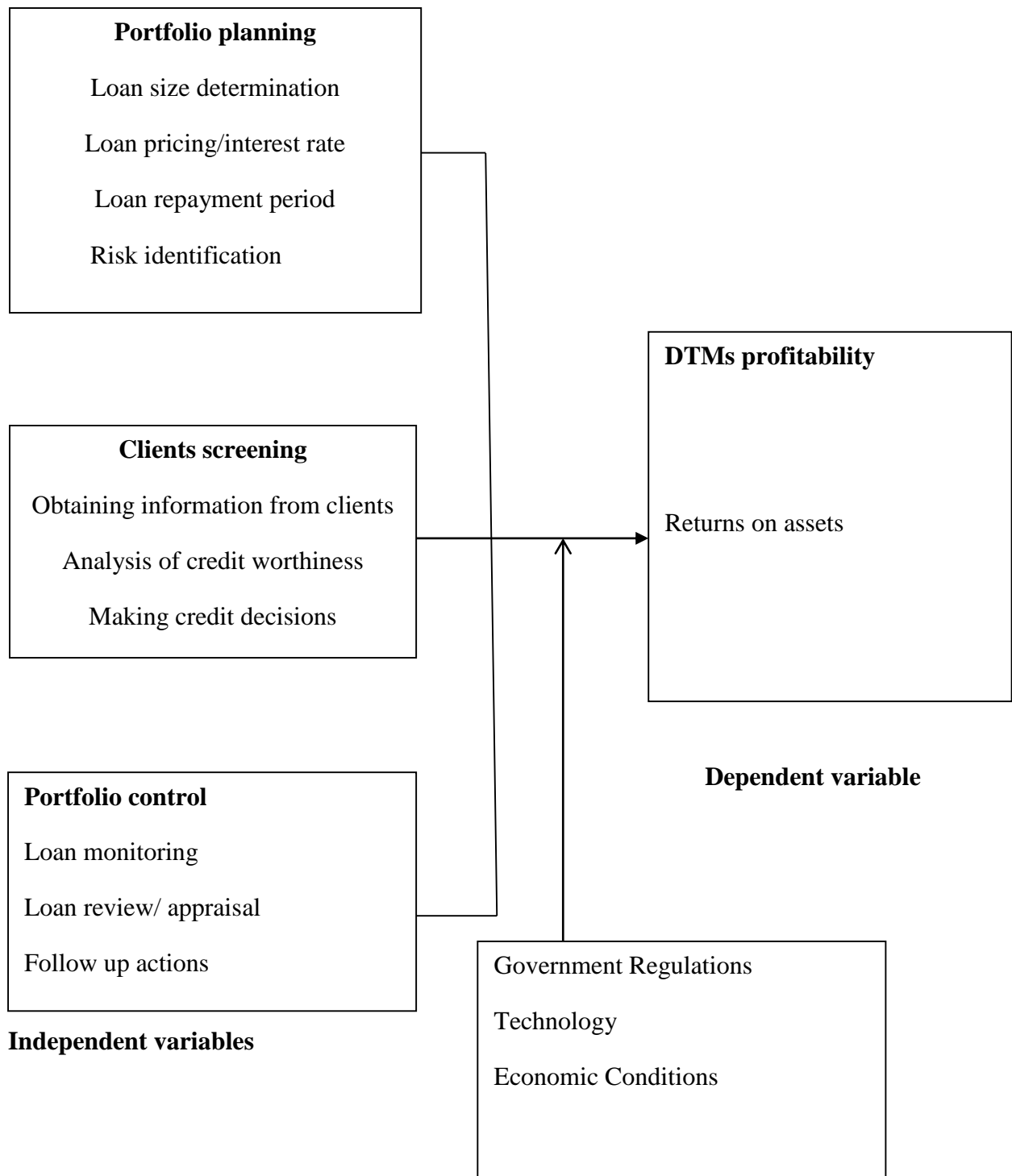


Figure 2.1: Conceptual Framework

Intervening variables

Source: Adopted and modified from Loans Analytics (2004)

The conceptual framework above shows that, the independent variables may have an effect on the dependent variable. The profitability of the microfinance institutions is the dependent

variable, it depends on portfolio planning, client screening and portfolio control, which are the independent variables. The loan portfolio planning deals with the loan size determination, loan pricing/interest rate, and the repayment period setting. These components act as the measures on how the DTMs can come up with proper loan sizes and prices so that the desired profitability is achieved. The client screening enables the loan portfolio managers determine the worthy clients who will not fail to repay the loan. To ascertain the credit worthiness, measures such as financial statements, the kind of business the client is operating and how that business is financed are analysed. After the analysis, the loans are disbursed to those with favourable financial statements, positive business inflows and whose businesses are not financed using loans. This reduces the default rate, thus the profitability is enhanced. The final independent variable is the portfolio control. It enables the DTMs keep an eye on the loans extended to their clients. To control loan portfolios, measures such as loan monitoring, loan review and follow up actions are employed. Loan monitoring deals with supervising and advising the clients on how best they should use the loans to avoid default. Loan review deals with reviewing the loan portfolios to ascertain those who haven't cleared their obligations. Finally the follow up actions commence to recover the unpaid loans. If the control is done well, the profitability is enhanced and vice versa.

The profitability of the DTMs on the other hand, as the dependent variable is measured by the returns on assets. The profitability is enhanced if the loans revenues (interests and principals) are fully recovered as well as fees received as penalties on late repayments, credit application fees and the commissions. The return on assets as a measure of profitability is preferred over the return on earnings in this study since it focuses on profit accumulated by all the assets of the institutions, unlike return on earnings that focuses on the management of shareholders' money and the gains on it. Finally there are several intervening variables that are used to explain the relationship between the independent and dependent variables. These include government regulations, economic conditions and technology.

2.8 Justification on using Return on Assets as the measure of profitability

There are other measures of profitability such as return on equity, net interest margin and the loan to assets ratio. Return on equity measures the profitability earned by the shareholders therefore it is not applicable in measuring the profitability of DTMs. Net interest margin is used especially for evaluating bank's net profit on interest-earning assets and investment securities. Furthermore, the loan-to-assets ratio is another profitability measure that's used by investors to obtain a complete analysis of a bank's operations. On the contrary, return on assets measures the per-dollar profit a bank earns on its assets. Since banks' assets largely consist of the bank loans, the return on asset is an important measure of bank's profitability. Given all these, return on asset is therefore the only measure applicable in this study to measure the profitability of the DTMs based on loan portfolio management.

2.9 Summary of Literature Review

The chapter begun by providing a brief discussion on key theoretical approaches related to the assessment of the effect of loan portfolio management on the profitability of deposit taking microfinance institutions. Key theoretical approaches discussed are Asymmetric Information Theory and Credit Risk modelling theory. The chapter also concentrated on the loan portfolio management process (loan portfolio planning, clients screening, portfolio controls), profitability, effect of loan portfolio management on profitability, facets of empirical studies done on loan/credit portfolio management and financial performance/profitability, Research gap and the conceptual framework.

CHAPTER THREE

RESEARCH METHODOLOGY

This chapter captures the research design, target population and research instruments used in carrying out the study. Also, it captures how the reliability and validity test were done. Furthermore, it explains how the data obtained was analysed and presented.

3.1 Research Design

The research design refers to overall detailed plan or blueprint for obtaining answers to the questions being studied. The study adopted a descriptive research design. Descriptive research is used to obtain information concerning the current status of the phenomena to describe ‘what exists’ with respect to variables or conditions in a situation (Gardner et al 2004) . The technique was appropriate in providing an in-depth study and analysis on this research.

3.2 Target Population

Mugenda and Mugenda (2003) define a population as an entire group of individuals, events or objects having common observable characteristics. Target population in statistics is the specific population about which the information is desired. The target population for this study was made up of all the fourteen licensed DTMs operating in Nairobi County. These DTMs were licensed by the Central Bank of Kenya. They included Sidian bank, SMEP, Faulu, KWFT, Rafiki microfinance, Choice microfinance bank, Remu microfinance bank, Uwezo microfinance bank, Century Microfinance bank, Sumac Microfinance bank, U and I microfinance bank, Daraja microfinance bank, Caritas microfinance bank and Maisha microfinance Bank. A census study was used to carry out the research. The research instruments were addressed to three respondents in each of the DTMs making a total of 42 respondents.

3.3 Data Collection Methods and Procedure

The data for the study was obtained from primary sources. The primary data was collected by use of questionnaires, using drop and pick method. The questionnaires had only the close-ended questions. The close-ended questions were used to test the rating of various attributes; this helped in reducing the number of related responses in order to obtain more varied responses. The questionnaires were addressed to the credit managers, accountants and the finance managers of the microfinance institutions since they were the ones who could give the information required for the study.

3.4 Reliability of Research Instruments

According to Joppe (2000), reliability is the extent to which results are consistent over time. An accurate representation of the total population under study is referred to as reliability and if the results of a study can be reproduced under a similar methodology, then the research instrument is considered to be reliable.

3.5 Data Validity

Joppe (2000) also asserted that validity determines whether the research truly measures what it was intended to measure or how truthful the research results are. Researchers generally determined validity by asking a series of questions, and often look for the answers in the research of others. The validity check was done through discussion with the supervisor. The results were pretested with the help of Cronbach's Coefficient Alpha which was acceptable since the reliability coefficient is greater than 0.7. If the instruments yield a coefficient greater than 0.7, then it is adopted. However, if the results are less than 0.7, necessary adjustments must be done to the instrument to ensure it meets the standard before it is adopted (Wallen, & Fraenkell, 2000).

3.6 Data Presentation and Analysis

The data collected through questionnaires was tabulated and analysed using the Statistical Package for the Social Sciences (SPSS). Descriptive statistics such as frequencies and percentages were used to analyse data. Furthermore, descriptions were made based on the results of the tables. Before processing the responses, the completed questionnaires were edited for completeness and consistency. The data was coded to enable the responses to be grouped into various categories. The findings were then presented using tables, bar graphs, and pie charts. Correlation and regression analysis were used to test the effect of independent variables on the dependent variable. Correlation analysis was used to test the effect of each of the independent variables on the dependent variable. Regression analysis was used to test the effect of all the independent variables on the dependent variable. The regression model that was used in the study is shown below:

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

Where Y= Profitability of microfinance institutions measured by ROA

α = Constant Term

β = Beta Coefficient –This measures how many standard deviations a dependent variable will change, per standard deviation increase in the independent variable.

X_1 = Loan Portfolio Planning

X_2 = Clients Screening

X_3 = Loan Portfolio Control

ϵ = Error term

3.7 Objectives Analysis Table

Objective	Variables	Indicators	Analysis Tool
	Independent		
To determine the effect of loan portfolio planning on the profitability of DTMs	Loan Portfolio Planning	<ul style="list-style-type: none"> • Loan size determination • Loan pricing/interest rate • Loan repayment period • Risk identification 	Correlation Analysis
To assess the effect of client screening on the profitability of DTMs	Client Screening	<ul style="list-style-type: none"> • Obtaining information from clients • Analysis of credit worthiness • Making credit decisions 	Correlation Analysis
To determine the effect of portfolio control on the	Portfolio Control	<ul style="list-style-type: none"> • Loan monitoring 	Correlation Analysis

profitability of DTMS		<ul style="list-style-type: none"> • Loan review/appraisal • Follow up actions 	
To ascertain the joint effect of portfolio planning, client screening and portfolio control on the profitability of DTMs	Portfolio Planning, Client Screening and Portfolio Control		Regression Analysis

CHAPTER FOUR
DATA ANALYSIS, PRESENTATION AND INTERPRETATION AND
DISCUSSION ON THE RESULTS

4.1 Introduction

This chapter discusses the interpretation and presentation of the findings and presents analysis of the data on the effect of loan portfolio management on the profitability of Deposit Taking Microfinance Institutions in Nairobi, Kenya. The chapter also provides the major findings and results of the study.

4.1.1 Response Rate

The table below presents the findings on the response rate of the respondents. The results are presented as follows.

Table 4.1: Response Rate

	Frequency	Percentage
Responded	36	85.71%
Not Responded	6	14.29%
Total	42	100%

Source: Researcher (2017)

The study targeted 42 respondents in collecting data. Results in Table above shows that 36 out of 42 target respondents filled in and returned the questionnaire contributing to 85.71% response rate. Response rate was good and representative and conforms to Mugenda and Mugenda (2003) stipulation that a response rate of 50% is adequate for analysis and reporting; a rate of 60% is good and a response rate of 70% and over is excellent. This commendable response rate was made a reality after the researcher administered the questionnaires. This response rate is adequate for analysis and reporting.

4.2 Respondents' Demographic Characteristics.

4.2.1 Gender of the respondents

The table below presents the gender of the respondents. The results are presented below.

Table 4.2: Gender of the respondents

	Frequency	Percent
Male	17	47.2%
Female	18	50.0%
Not Responded	1	2.8%
Total	36	100.0%

Source: Researcher (2017)

The Table 4.2 above indicates that majority (50.0%) of the respondents were female while 47.2% were male, this shows that gender balance is almost maintained in the institutions.

4.2.2 Age

The figure below presents the findings on the age level of the respondents. Findings are presented as follows:

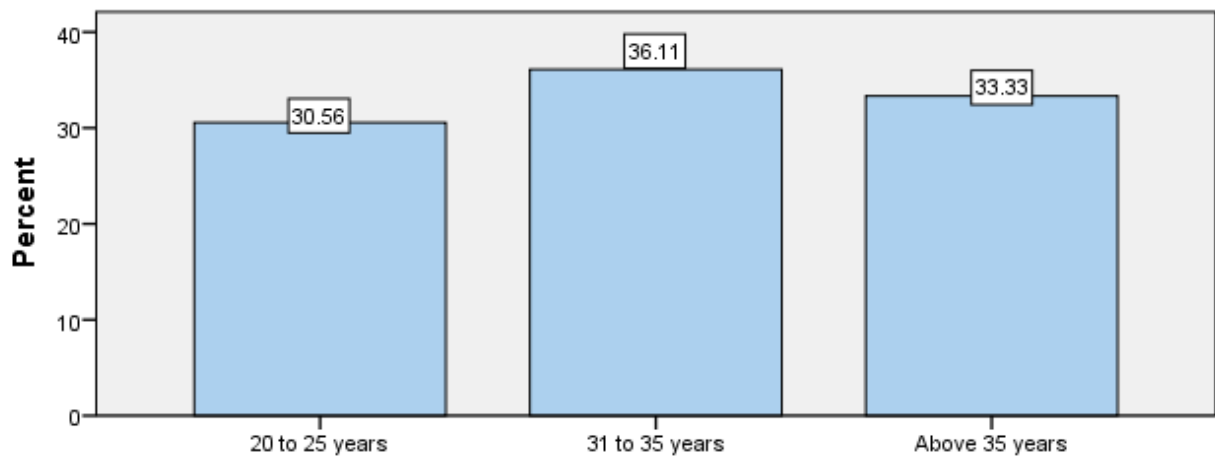


Figure 4.2: Age of the respondents

Source: Researcher (2017)

Majority (36.11%) of the respondents were aged between 31 to 35 years, 33.33% above 35 years, while 30.56% of the respondents were aged between 20 to 25 years as shown in the Figure above. This shows that majority of the employees are youths therefore are capable of working efficiently.

4.2.3 Marital status

The study sought to determine the marital status of the respondents as shown below;

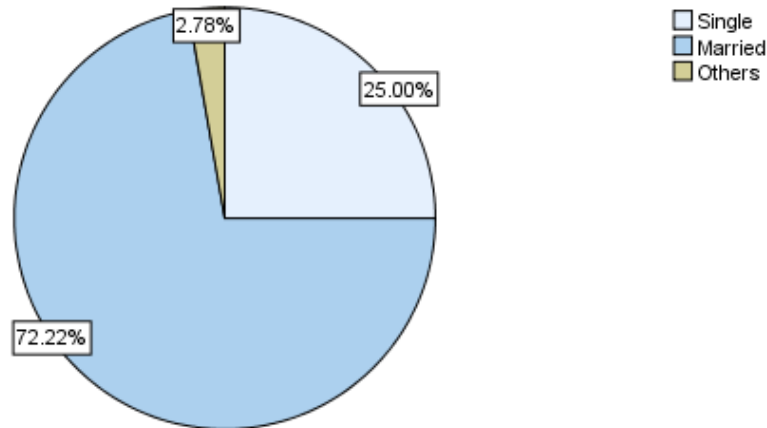


Figure 4.3: Marital status

Source: Researcher (2017)

The Figure 4.2 shows the distribution of respondent's marital status, majority (72.22%) of the total respondents sampled were married, 25% were single.

4.2.4 Designation

The researcher sought to find out the respondents designations. Their responses were recorded as shown in the table below:

Table 4.3: What is your Designation?

	Frequency	Percent
Credit Manager	13	36.1%
Finance Manager	2	5.6%
Accountant	6	16.7%
Others	14	38.9%
Not Responded	1	2.8%
Total	36	100.0%

Source: Researcher (2017)

38.9% of the respondents had other designation, 36.1% credit manager, 16.7% Accountant as indicated in the Table 4.3 above.

4.2.5 Work experience

The table below presents the work experience of the respondents. Their responses are shown below:

Table 4.4: Work experience

	Frequency	Percent
Below 5 years	12	33.3%
5 to 10 years	20	55.6%
Over 10 years	3	8.3%
Not Responded	1	2.8%
Total	36	100.0%

Source: Researcher (2017)

Majority (55.6%) of the respondents had 5 to 10 years of experience, 33.3% had an experience of less than a year while 8.3% had over 10 years' experience as indicated in Table 4.4. Since most employees have an experience of 5 to 10 years they have enough information about the institutions. They were therefore in a position to assess how the loans had affected the performance of their institutions. The results obtained from them can therefore be considered reliable as far as this effect is concerned.

4.2.6 The period of operation

The respondents were asked about the period their institutions have been in the operation. The findings are shown in the figure below.

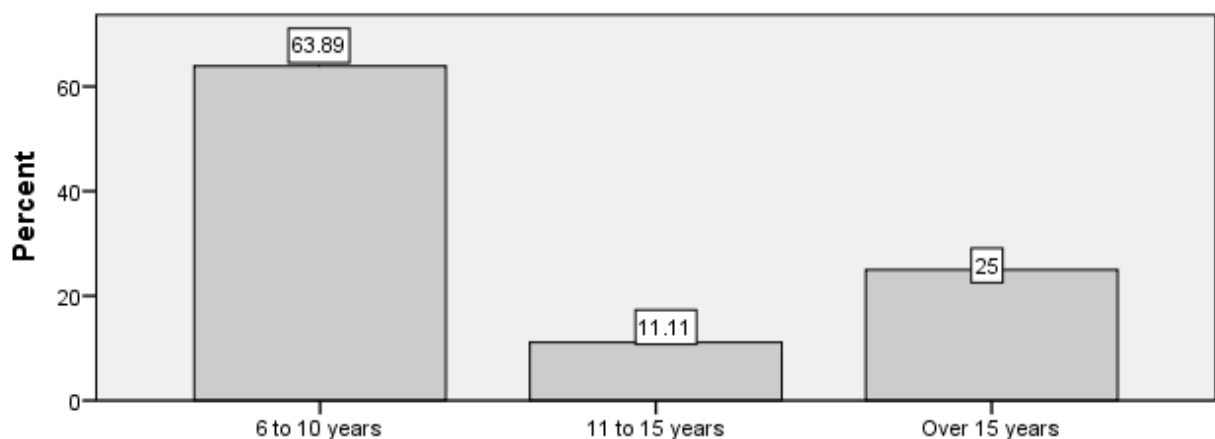


Figure 4.4: The period the institutions have been in operation

Source: Researcher (2017)

The Figure 4.3 above shows that majority (63.89%) of the total population sampled indicated that their institutions have been in operation for a period of 6 to 10 years, 25% over 15 years while 11.11% of the institutions have been in operation for a period of 11 to 15 years.

4.3 Loan Portfolio Planning

4.3.1 The extent to which portfolio planning contributed to the profitability

The study sought to determine the extent to which portfolio planning contributed to the profitability of the institutions, the results are shown below.

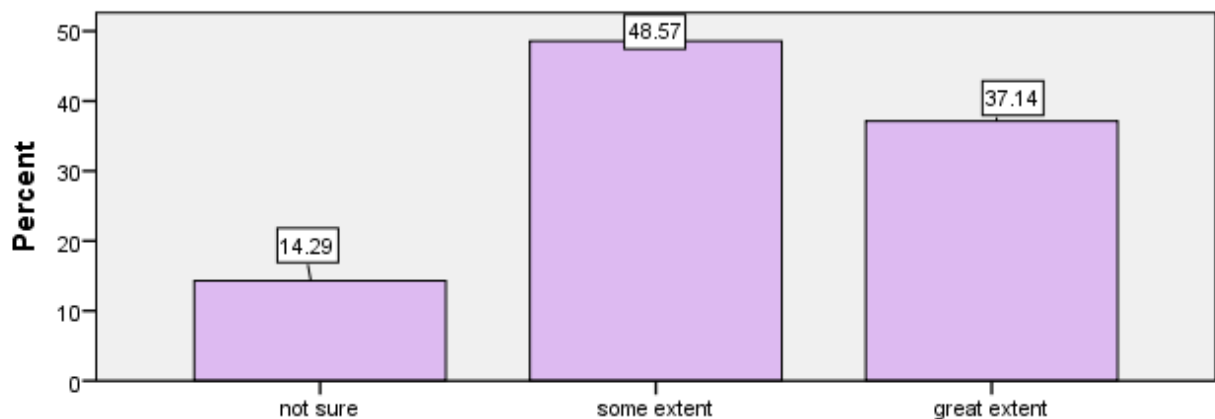


Figure 4.5: *Loan Portfolio planning contribution to profitability of the institutions*

Source: Researcher (2017)

The Figure 4.4 indicates that the majority (48.57%) of the respondents revealed that the portfolio planning has contributed to the profitability of the institutions to some extent, 37.14% it has contributed to a great extent while the minority (14.29%) were not sure about the extent of the contribution.

4.3.2 The influence of loan portfolio segmentation and size on the profitability of the institutions

The researcher sought to find out the influence of loan portfolio segmentation and size on the profitability of the institutions. The findings are presented below:

Table 4.5: *The influence of loan portfolio segmentation and size*

	YES	NO
Influence of loan portfolio segmentation	100%	0%
Influence of loan portfolio size	100%	0%

Source: Researcher (2017)

All (100%) the respondents reported that loan portfolio segmentation and size have an influence on the profitability of the institutions as revealed in the Table 4.5 above.

4.3.3 Interest rate charged and measures of controlling the risk

The researcher sought to determine the influence of interest rate charged on the profitability, if the interest rates vary from time to time, if the loan repayment period influences the profitability of the institutions and measures of controlling the risks associated with loans portfolios.

Table 4.6: *Interest rate charged and measures of controlling the risk*

	YES	NO
Influence Interest rate charged	100%	0%
Does interest rate vary from time to time?	100%	0%
Influence of loan repayment period	100%	0%
Measures of controlling the risk associated with loan portfolio offered to clients	94.4%	2.8%

Source: Researcher (2017)

The Table 4.6 shows that all (100%) of the respondents indicated that interest rate charged has an influence on the profitability of the institutions, 100% interest rate vary from time to time and loan repayment have an influence on the profitability of the institutions. Majority (94.4%) said that the institutions have measures of controlling the risks associated with loan portfolio they offered to the clients while 2.8% said No.

4.4 Clients screening

4.4.1 The extent of clients screening contribution

The researcher sought to determine the extent to which clients screening contributes to the profitability of the institutions. The findings were recorded as shown below.

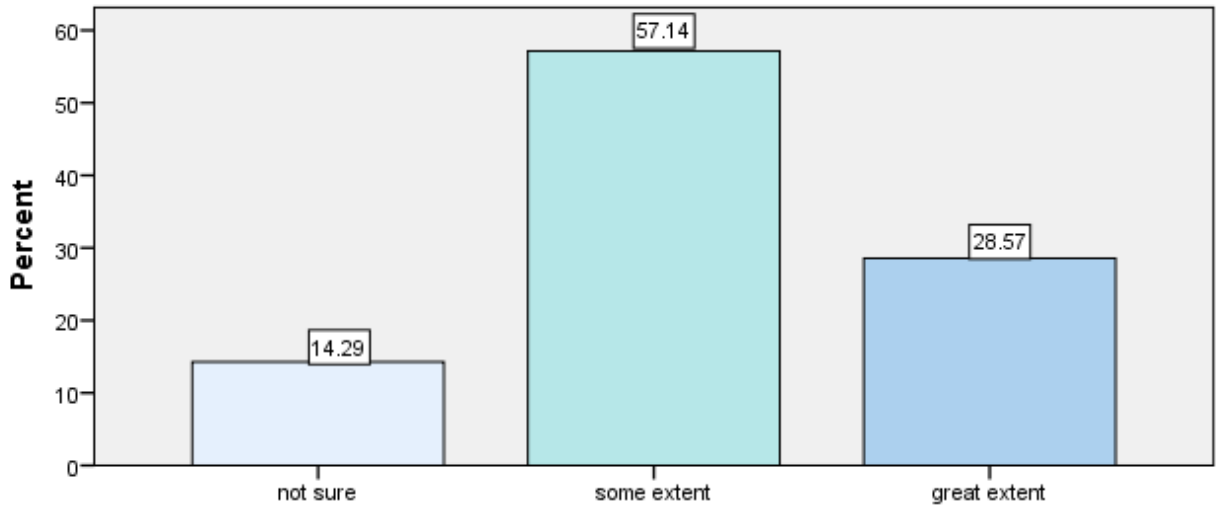


Figure 4.6: Influence of clients screening

Source: Researcher (2017)

57.14% of the respondents indicated that clients screening contributed to the profitability of the institutions to some extent, 28.57% great extent while 14.29% were not sure about the clients screening contribution as shown in Figure 4.5 above.

4.4.2 Information needed to screen clients

The researcher sought to know if the respondents had information needed to screen clients. The findings were presented as follows;

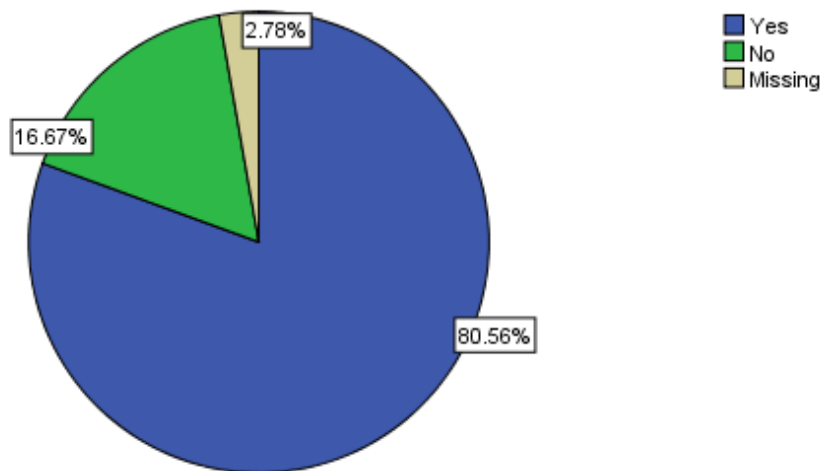


Figure 4.7: Information needed to screen clients

Source: Researcher (2017)

Majority (80.56%) of the respondents indicated that they had information needed to screen clients while 16.67% said they didn't have the information and 2.78% didn't respond. This therefore shows that, information on clients is very important in loans extension to clients.

4.4.3 Influence of group lending on the profitability

The table below presents the group lending influences on profitability of the institution. The findings are as shown below.

Table 4.7: Does the group lending influence the profitability

	Frequency	Percent
Yes	30	83.3%
No	5	13.9%
Not Responded	1	2.8%
Total	36	100.0%

Source: Researcher (2017)

83.3% of the total population sampled indicated that group lending influences the profitability of the institutions while 13.9% said no as shown in the Table 4.7.

4.4.4 Clients deemed credit worthy

The respondents were asked if they were able to get the clients deemed to be credit worthy to boost the profitability of the institutions.

Table 4.8: Clients deemed credit worthy to boost the profitability of the institutions

	Frequency	Percent
Yes	35	97.2%
Not Responded	1	2.8%
Total	36	100.0%

Source: Researcher (2017)

97.2% of the respondents reported that they are able to get the clients deemed to be credit worthy to boost the profitability of the institutions while 2.8% did not answer the question as presented in Table 4.8 above.

4.4.5 The credit decision influence on the profitability of the institutions

The figure below presents the extent to which the credit decision influences the profitability of the institutions. The responses were presented as shown below.

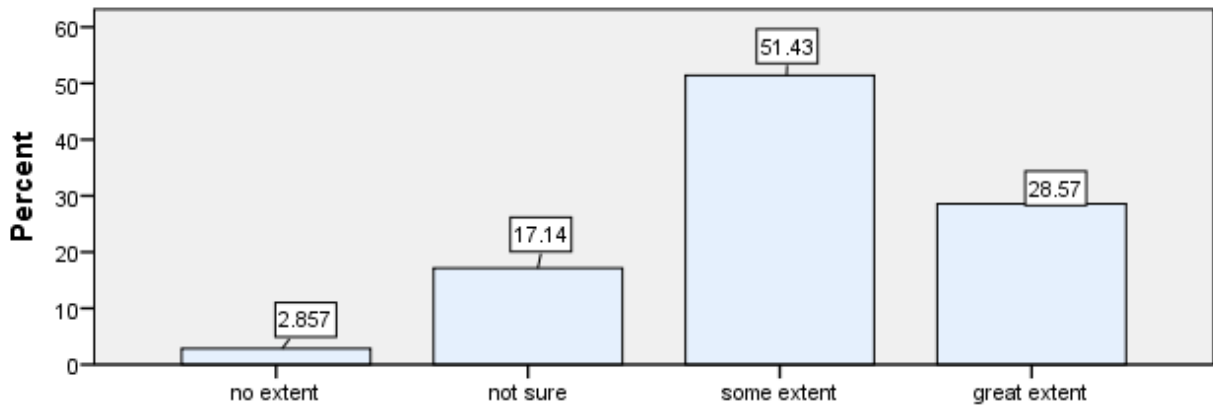


Figure 4.8: *Extent of the credit decision influence on the profitability of the institutions*

Source: Researcher (2017)

The Figure 4.7 reveals the 51.43% of the participants reported that credit decision influences profitability to some extent, 28.57% great extent while 17.14% were not sure.

4.5 Loan Portfolio Control

4.5.1 Extent which portfolio control has contributed to profitability

The table below presents the extent in which the institutions have attained profitability based on the loan portfolio control. The findings are as follows:

Table 4.9: *Extent which portfolio control contributes to profitability*

	Frequency	Percent
Not sure	2	5.6%
Some extent	23	63.9%
Great extent	10	27.8%
Total	35	97.2%
Not Responded	1	2.8%
Total	36	100.0%

Source: Researcher (2017)

The Table 4.9 reveals that 63.9% of the participants reported that loan portfolio controls have made the institutions to attain the profitability at some extent, 27.8% great extent while 5.6% were not sure.

4.5.2 Loan monitoring

The table below presents the influence of loan monitoring in the attainment of the desired profitability. The findings are as follows;

Table 4.10: Loan monitoring

	Frequency	Percent
Yes	35	97.2%
Not Responded	1	2.8%
Total	36	100.0%

Source: Researcher (2017)

97.2% of the participants who responded reported that loan monitoring is influential in the attainment of the desired profitability as presented in the Table above.

4.5.3 The period for reviewing the loan portfolios

The figure below presents the period it takes to review the loans portfolio. The findings are presented below.

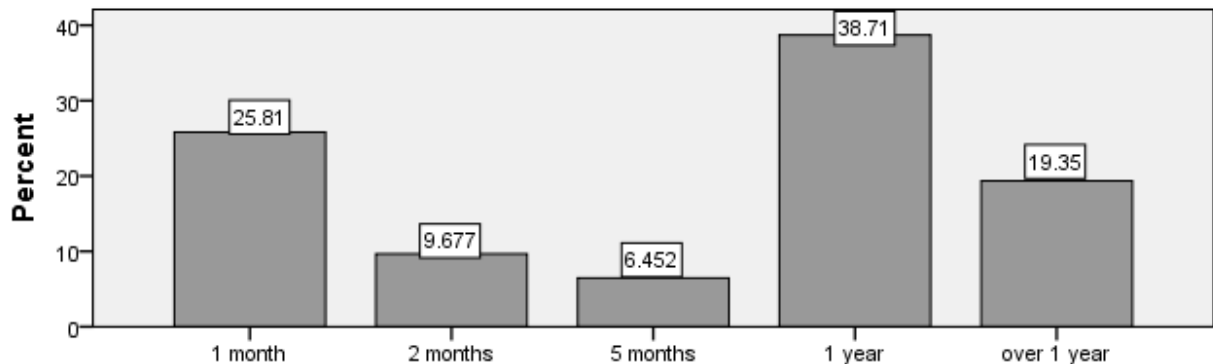


Figure 4.9: Period for reviewing the loan portfolios

Source: Researcher (2017)

The Figure 4.8 shows that 38.71% of the participants reported that they do review their loans portfolios after 1 year, 25.81%, 19.35% and 9.677% review their portfolios after 1 month, over a year and 2 months respectively.

4.5.4 Loan portfolio review influence on the profitability

The table below presents the influence of loan portfolio review on the profitability of the DTMS. The results are shown below

Table 4.11: *The influence of loan portfolio review on the profitability of the institutions*

	Frequency	Percent
Yes	35	97.2%
Not Responded	1	2.8%
Total	36	100.0%

Source: Researcher (2017)

The Table 4.11 presents the influence of loan portfolio review on the profitability of the institutions, 97.2% of the participants who responded to the question revealed that loan review influences the profitability of the institutions while 2.8% of the respondents did not respond to the question.

4.5.5 Follow ups

The table below presents the contribution of follow ups to the profitability of the institutions.

The findings are presented below:

Table 4.12: *Do the follow ups contribute to the profitability?*

	Frequency	Percent
Yes	35	97.2%
Not Responded	1	2.8%
Total	36	100.0%

Source: Researcher (2017)

The Table 4.12 presents the respondents view on the contribution of the follow ups to the profitability of the institutions, 97.2% of the employees who responded to the question said yes; while 2.8% never responded.

4.5.6 Measures to cover up the defaulted loans

The table below presents the measures to cover up defaulted loans. The findings are shown below:

Table 4.13: Measures to cover up the defaulted loans

	Frequency	Percent
Yes	31	86.1%
No	3	8.3%
Not Responded	2	5.6%
Total	36	100.0%

Source: Researcher (2017)

Table 4.13 presents the respondents views, majority (86.1%) of the respondents indicated yes while 8.3% No. This shows that, majority of the DTMs have measures to cover up defaulted loans.

4.6 Profitability

4.6.1 Recent after tax profit/Loss

The researcher sought to investigate the recent after tax profit/loss of the institutions. The findings are presented below.

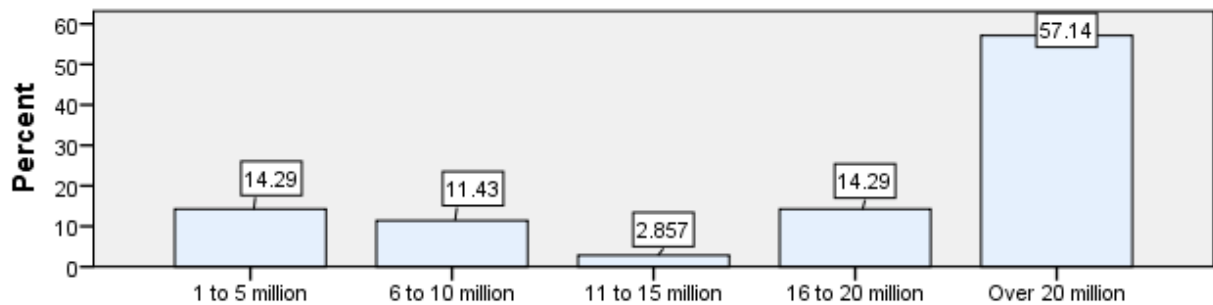


Figure 4.10: Recent after tax profit/Loss

Source: Researcher (2017)

The Figure 4.9 above shows that the majority (57.14%) of the respondents indicated that their recent after tax profit/loss was over 20 million, 14.29% 11 to 15 million while 14.29% 16 to 20 million.

4.6.2 Consistency of after tax profit

The figure below presents the consistency of after tax profit. The findings are presented below.

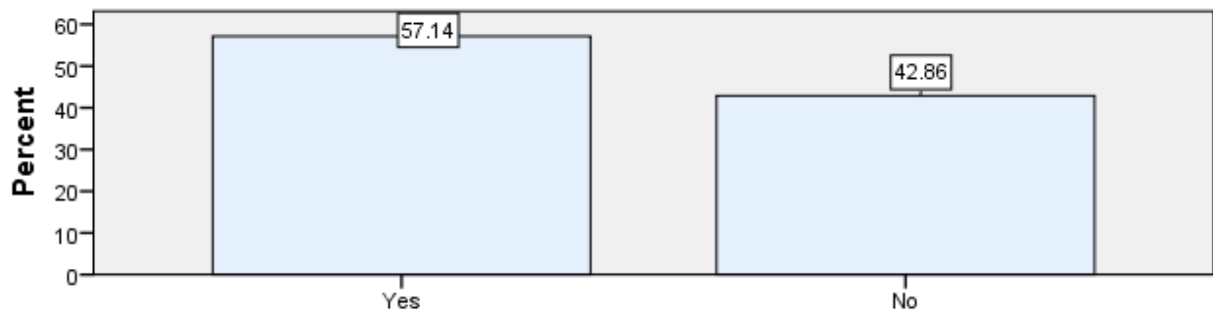


Figure 4.11: Consistency of after tax profit

Source: Researcher (2017)

The Figure 4.10 reveals that the majority (57.14%) reported that the after tax profit was consistent over the years while 42.86% the after tax profit was not consistent.

4.6.3 The value of institutions' outstanding loan portfolios

The table below presents the value of institutions' outstanding loan portfolios. The findings are presented below.

Table 4.14: What is the value of your institution's outstanding loans portfolio?

	Frequency	Percent
1 to 5 million	8	22.2%
6 to 10 million	5	13.9%
11 to 15 million	1	2.8%
16 to 20 million	4	11.1%
Over 20 million	16	44.4%
Not Responded	2	5.6%
Total	36	100.0%

Source: Researcher (2017)

The Table 4.14 reveals that 44.4% of the respondents reported that their institutions' loan portfolios are valued over 20 million, 22.2% of the respondents indicated that their institutions' loan portfolios are valued at 1 to 5 million and 13.9% of the respondents indicated that their institutions' loans portfolios are valued at 6 to 10 million.

4.6.4 The amount of written off debts

The figure below presents the amount of written-off debts. The findings are presented below.

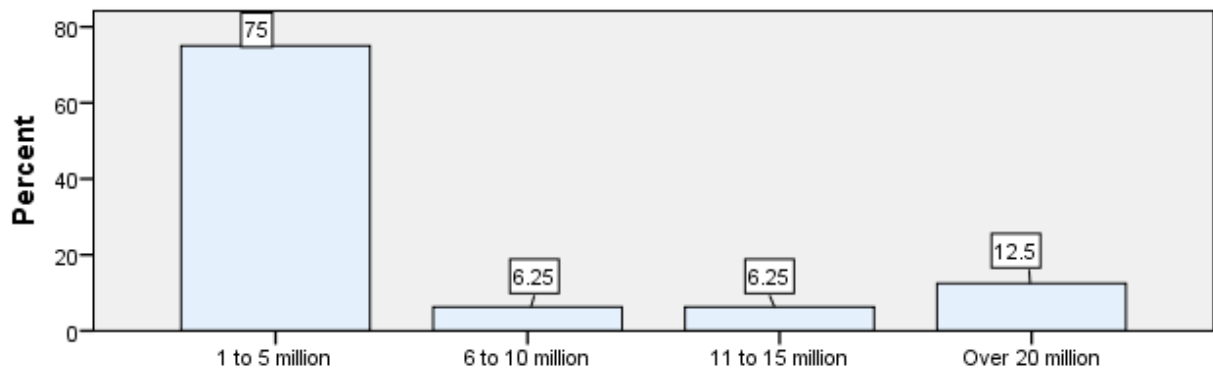


Figure 4.12: The amount of written off debts

Source: Researcher (2017)

The majority (75%) of the respondents indicated that 1 to 5 million was written off debts, 6.25% have written off debts of 6 to 10 million and 11 to 15 million while 12.5% have written off debts of over 20 million as presented in Figure 4.11.

4.6.5 The value of institutions' total assets

The table below presents the value of institutions' total assets. The findings are presented as follows:

Table 4.15: Value of institutions' total assets

	Frequency	Percent
6 to 10 million	4	11.1%
11 to 15 million	5	13.9%
Over 20 million	27	75.0%
Total	36	100.0%

Source: Researcher (2017)

The Table 4.15 shows that 75% of the respondents indicated that the value of their institutions' total assets was over 20 million, 13.9% and 11.1% indicated that the value of their institutions total assets were 11 to 15 million and 6 to 10 million respectively.

4.7 Inferential Analysis

The study sought to assess the effect of loan portfolio management on the profitability of Deposit Taking Microfinance Institutions. Bivariate correlation analysis was carried out to determine the effect of loan portfolio planning on the profitability of DTMs, effect of client screening on the profitability of DTMs and effect of portfolio control on the profitability of DTMs as shown in the Table 4.16. Multiple linear regression was used to assess the effect of the combined variables on the profitability of DTMs.

4.7.1 Correlation Analysis

The table below presents the correlation analysis between the independent variables and the dependent variable. The results are presented below:

Table 4.16: Effects of loan portfolio planning, client screening and portfolio control on profitability of DTMs

		Loan portfolio	Client screening	Loan portfolio Control
Profitability of DTMs	Pearson Correlation	.301	.105	.101
	Sig. (2-tailed)	0.008	.006	.005
	N	35	35	35

The Table above presents the effects of Loan portfolio planning, Client screening and Loan portfolio Control on the profitability of DTMs. The Pearson Correlation is (0.301, 0.105 and 0.101 respectively). The Sig. (2-tailed) was 0.008, 0.006 and 0.005 < p-value (0.05), the null hypothesis was not accepted and a conclusion is made that Loan portfolio planning, Client screening and Loan portfolio Control have a statistical significant effect on the profitability of DTMs.

4.7.2 Regression analysis

The study sought to determine the effect of combined variables on the profitability of DTMs. The model summary is presented below:

Table 4.17: Model Summary

Model	R	R Square	Adjusted Square	R Std. Error of the Estimate
1	.552 ^a	.084	.002	1.3214

a. Predictors: (Constant), portfolio control, loan portfolio planning, client screening

b. Dependent Variable: ROA

Source: Research Findings

The model has a regression value of 0.552, which depicts a significant effect of predicted and explanatory variables. The model was also moderately strong owing to R-square values of 0.84, which was adjusted for errors to 0.002. This depicts that the independent variables explain only 55.2% of the changes in Profitability of DTMs as measured by ROA.

The table below presents ANOVA showing the regression model, sum of squares, degrees of freedom, mean square and the F-test. The use of ANOVA here was to generate attributes for hypothesis testing such as f-test. The findings are presented below:

Table 4.18: ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.6754	3	2.225	0.953	.002 ^b
	Residual	72.345	31	2.334		
	Total	82.353	34			

a. Dependent Variable: ROA

b. Predictors: (Constant), loan portfolio control, loan portfolio and client screening

Source: Research Findings

Table 4.18 reveals that the model was significant owing to F-test value of 0.953 at significance value of 0.002 ($p < .05$) which attributed to the rejection of null hypothesis and a conclusion was made that there is a significant relationship between the combined variables and the profitability of DTMs.

Table 4.19 below presents the regression coefficients that show how the dependent variable would change given a unit increase in each of the independent variables. In the table below also, the model shows the significant values.

Table 4.19: Regression Coefficients

Model	Unstandardized		Standardized	t	Sig.	
	Coefficients					
	B	Std. Error	Beta			
(Constant)	2.743	2.53		.784	0.00	
1	loan portfolio planning	.692	.453	.342	1.732	0.0012
	client screening	-.25	.463	-.023	-.091	0.0084
	loan portfolio control	.51	.432	.008	.053	0.0094

a. Dependent Variable: ROA

Source: Research Findings

In the regression model, the significant values contributed to the rejection of the null hypothesis. Since the regression model contains independent variables that are statistically significant, it indicates that changes in these independent variables affect the dependent variable. The output in the table above indicates that the independent variables of loan portfolio planning, client screening and loan portfolio planning are significant because both of their p-values (0.0012, 0.0084 and 0.0094) are less than the significant level of 0.05. Therefore the null hypothesis was rejected.

Also, given the regression coefficients in the table above, the following regression equation was established:

$$ROA = 2.743 + 0.692 \text{ Loan portfolio planning} - 0.25 \text{ client screening} + 0.51 \text{ loan portfolio control}$$

When other factors (loan portfolio planning, client screening and loan portfolio control) are at zero, the Profitability of DTMs (ROA) will be 2.743. Holding loan portfolio control and client screening constant, a unit increase in loan portfolio planning would lead to 0.692 increase in DTMs Profitability. Holding other factors (loan portfolio planning and client screening) constant, a unit increase in loan portfolio control would lead to 0.51 increase in DTMs' ROA.

Furthermore, holding loan portfolio control and loan portfolio planning constant, a unit increase in client screening would lead to 0.25 decrease in DTMs' ROA.

The table below presents the multicollinearity test (a diagnostic test in regression analysis). Multicollinearity occurs when independent variables in a regression model are correlated. This correlation is a problem because the independent variables should be independent. If the degree of correlation between the variables is high enough, it can cause problems when you fit the model and interpret the results.

Table 4.20: Multicollinearity Test

Model	Unstandardized		Standardized			
	Coefficients		Beta	t	Sig	VIF
(Constant)	2.743	2.53		.784	0.00	
Loan portfolio planning	.692	.453	.342	1.732	0.0012	2.345
Client Screening	-.25	.463	-.023	-.091	0.0084	1.938
Loan portfolio control	.51	.432	.008	.053	0.0094	2.532

Source: Research Findings

The table above shows the multicollinearity results. The findings showed that there is no multicollinearity in the data since the variance inflation factors (VIF) are in the recommended range. It is recommended that the VIF values should be less than 5.

4.8 Discussion on the results

As shown above, the data analysis and interpretation were deliberately done. It's through this analysis and interpretation that the study results were driven. The analysis was done based on the responds gotten from the research instruments. Out of the 42 questionnaires issued to the respondents, 36 of them were filled and returned, translating to 85.71% which is an excellent response rate. Based on the results, the variables under loan portfolio planning such as loan portfolio segmentation, interest rate charged, measures of controlling risk and loan repayment period have effect on the profitability of DTMs.

The client screening components of information needed to screen clients, group lending, credit worthiness and credit decision were found to have effect on the profitability of DTMs. Furthermore, the loan portfolio control components of loan monitoring, period of reviewing the loan portfolios, follow-ups and measures to cover up the defaulted loans were found to have effect on the profitability of DTMS.

The results showed that loan portfolio planning, client screening and loan portfolio control have significant effect on the profitability of Deposit Taking Microfinance Institutions. Planning is a significant factor, predicting up to 69.2% of the profitability, Client screening predicted up to 25% decrease in profitability, however, it is effectively carried out in most of the Deposit Taking Microfinance Institutions. The findings also showed that loan portfolio control was established as a significant predictor of up to 51% of the profitability. The results concluded that loan portfolio management has a significant effect on the profitability of the Deposit Taking Microfinance Institutions at 55.2%.

CHAPTER FIVE

FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of the findings, conclusion and recommendations of the study. Suggestions for further research are also made at the end of the chapter.

5.2 Summary of the major findings

The following is the summary of findings by this study.

5.2.1 The effect of loan portfolio planning on the profitability of DTMs

The first objective of the study was to determine the effect of loan portfolio planning on profitability of DTMs in Nairobi County. Results indicated that the effect was significant. This implies that the manner in which the Deposit Taking Microfinance Institutions conduct their loan portfolio planning affects their profitability in a significant way. Actually, results show further that portfolio planning was a significant positive predictor of the DTMs profitability. The results are therefore supported by the observations made by Antonio (2000) who reported that the loan portfolio planning facilitates a decrease in portfolio risk through better risk identification and risk diversification; which in turn increases DTMs profitability through the reduction of portfolio volatility and the increase in customer profitability. Also, the results are supported by the findings brought forward by Harmut (1997) who concluded that the planning policy involving identification and allocation of costs is essentially about loan pricing. It focuses on setting or fixing the interest rate or the price a customer has to pay for using the loan extended by the MFI. The loan portfolio planning process affects profitability positively.

This study's finding is also supported by King and Levine (1994), who concluded that loan portfolio planning affects profitability through the outcomes of the planning policies employed to plan for loan portfolio. According to Getubig (1987) regarded risk identification, which is also a loan planning policy, as the foundation of effective loan portfolio management towards the profitability. He noted that this policy centres on minimization of risk through accurate estimation of probability of default and loss in view of the type and capacity of the businesses of customers in a given sub portfolio.

5.2.2 The effect of client screening on the profitability of DTMs

The researcher also found out that client screening has a significant effect on the profitability of DTMs this goes hand in hand with the study carried out by ACCA (2005) who noted that when a client's financial position indicates that, his business is more financed by loans,

extending more loans to such a client is tantamount to making him more indebted, thereby increasing his likelihood of failure to service and repay the loans. The success of any MFI depends on how best it carries out client screening regarding the market potential and characteristics of the business for which the loan is sought. Poor client screening leads to poor loans repayment, thus low profitability and vice-versa.

The conclusion is supported by Berger and Gregory (2004) who observed that client screening is carried out for purposes of ensuring that the loaned money will be recovered with minimum default and concluded that effective client screening is the only way client ability to service and repay the loan is established and likely default is minimized. When it is well carried out, the MFI is bound to achieve its planned loan portfolio performance which translates to its profitability.

5.2.3 The effect of loan portfolio control on the profitability of DTMs

The loan portfolio control has a significant effect on the profitability of DTMs. This is supported by Garber, (1997) who reported that loan portfolio control involves enforcing ways and means of loan recovery in case a client begins to show signs of defaulting or late repayment. Since MFIs have no collateral to seize, they usually adopt control measures that recover loaned money by sharing out the defaulted amount of loan to all the members in the group that guaranteed the defaulter, and it is by effectively doing this that they can recover the money. Therefore, loan portfolio control leads to the desired portfolio performance, hence profitability to the MFIs.

5.2.4 The effect of Loan Portfolio Management on the profitability of Deposit Taking Microfinance Institutions

The study revealed that loan portfolio management has a significant effect on the profitability of the DTMs. This is supported by the study conducted by Gatuhu (2011) in her study on the effect of credit management on the financial performance of microfinance institutions in Kenya. She used a descriptive survey design on all the MFIs registered under AMFI and concluded that there is a strong relationship between financial performance of MFIs and loan portfolio management. This finding is also supported by Kalio and Kirui (2012) who carried out a study on the influence of credit risk management practices on loan performance of microfinance institutions in Baringo County. They concluded that, there is a strong positive relationship between client appraisal and loan performance of MFIs.

Similar conclusion was made by Karekaho (2009) in his study on loan portfolio management and the performance of microfinance institutions in Uganda, Wakiso District, using an analytical and cross sectional survey focusing on both qualitative and quantitative data found out that the portfolio planning, client screening and portfolio control are related significantly with the portfolio performance of MFIs, but the strongest relationship was between portfolio control and the performance of MFIs. In addition, he asserted that, although all the independent variables predicted a significant proportion of this performance, the most significant individual predictor was portfolio control dominated by loan monitoring. In this study all the independent variables predicted a significant proportion of the profitability, but the most dominant one is portfolio planning. For DTMs to achieve the desired profitability, they have to consider all these independent variables but put more emphasis on their loan portfolio control and client screening.

5.3 Conclusions

Given the aforementioned summary of findings, the study makes the following conclusions: Results indicated that loan portfolio planning has a significant effect on the profitability of Deposit Taking Microfinance Institutions in Nairobi County. Planning is a significant factor, predicting up to 69.2% of the profitability of DTMs. Results showed that most of the DTMs conduct their portfolio planning by putting more emphasis on loan pricing and loan size determination.

Findings also indicated that client screening has a significant effect on the profitability of DTMs in Nairobi. It predicted up to 25% decrease in profitability, however, it is effectively carried out in most of the DTMs. The findings also showed that loan portfolio control has a significant effect on the DTMs' profitability in Nairobi County. It was established as significant predictor of up to 51% of the profitability. In conclusion, the study found out that loan portfolio planning, client screening and portfolio control predict up to 55.2% of the DTMs profitability in Nairobi County.

5.4 Policy Recommendations on the Research Objectives

The following recommendations on the research objectives are drawn directly from the findings and in accordance with the conclusions reached in the previous section.

- (i) Deposit Taking Microfinance Institutions should improve their loan portfolio control generally; this will help them reduce their heavy loan portfolio risk.

- (ii) The Deposit Taking Microfinance Institutions should conduct client screening with the aim of improving profitability. They should set guarantees as they extend to their clients.
- (iii) The Deposit Taking Microfinance Institutions should also improve their emphasis on the loan portfolio control to increase profitability.
- (iv) Deposit Taking Microfinance Institutions should emphasize on the importance of client objectives in attainment of their success because when clients fail to achieve the goals for which they apply for loans, the DTMs risk increases, thereby putting the profitability of the DTMs in jeopardy.

5.5 Recommendations for further Research

The study has found out that loan portfolio planning, client screening and portfolio control predict up to 55.2% of the DTMs profitability in Nairobi County. This shows that, these are not the only variables affecting the profitability. Therefore, the following recommendations are made for further research.

- (i) The study recommends further research on other factors affecting the DTMs profitability.
- (ii) The study covered only DTMs in Nairobi County. A study covering other DTMs in other counties is needed so as to come up with a more empirical literature regarding DTMs in Kenya.
- (iii) A study should be done on the methods of client screening that can be adapted by DTMs.

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APPENDICES

Appendix 1: Questionnaires

Section A: Personal Data/Bio data

1. Name of the institution.....(optional)
2. What is your gender?
M [] F []
3. Which age bracket do you belong to? (tick the appropriate bracket)
20-25 []
26-30 []
31-35 []
Above 35 []
4. What is your marital status?
Single [] Married []

Other []
5. What is your designation?
Credit manager [] Financial Manager []

Accountant [] Others []
6. For how long have you been working here?
Below 5 years [] 5-10 years []

Over 10 years []
7. How long has this institution been operating?

Length of period	Below five years	6 – 10 years	11 – 15 years	Over 15 years
Response [tick]				

Section B: Loan Portfolio Planning

8. To what extent has loan portfolio planning contributed to the profitability of this institution?

Extent	1	2	3	4	5
Response (tick only one)					

Where; 5 = great extent, 4 = some extent, 3 = not sure, 2 = little extent, 1 = no extent

9. Does loan portfolio segmentation influence the profitability of your institution?

Yes No

10. Does loan portfolio size have an influence in determining the profitability of your institution?

Yes No

11. Do the interest rates charged influence the profitability of the institution?

Yes No

12. Do your interest rates vary from time to time?

Yes No

13. Does the loan repayment period have an influence on the profitability of your institution?

Yes No

14. Do you have any measures of controlling the risks associated with the loans portfolios you offer to your clients in place?

Yes No

Section C: Clients Screening

15. To what extent have the clients screening contributed to the profitability of this institution?

Extent	1	2	3	4	5
Response (tick only one)					

Where; 5 = great extent, 4 = some extent, 3 = not sure, 2 = little extent, 1 = no extent

16. Do you always have the information needed to screen clients?

Yes No

17. Does the group lending influence the profitability of your institution?

Yes No

18. When screening clients, are you able to get the clients deemed to be credit worthy to boost the profitability of your institution?

Yes No

19. To what extent does credit decisions made influence the profitability of your institution?

Extent	1	2	3	4	5
Response (tick only one)					

Where; 5 = great extent, 4 = some extent, 3 = not sure, 2 = little extent, 1 = no extent

Section D: Loan Portfolio Control

20. Based on the loan portfolio controls you have put in place, to what extent do you think the institution has attained profitability?

Extent	1	2	3	4	5
Response (tick only one)					

Where; 5 = great extent, 4 = some extent, 3 = not sure, 2 = little extent, 1 = no extent

21. Is the loan monitoring influential in the attainment of the desired profitability?

Yes [] No []

22. After how long do you review your loans portfolios?

(a) 1 month []

(b) 2 months []

(c) 5 months []

(d) 1 year []

(e) Over 1 year []

23. Does the loan portfolio review influence the profitability of your institution?

Yes [] No []

24. Do the follow up actions contribute to the profitability of your institution?

Yes [] No []

25. Do you have any measures to cover up the defaulted loans in place?

Yes [] No []

Section E: Profitability

26. How much was your institution's recent after tax profit/Loss?

Below 1 million []

1 to 5 million []

6 to 10 million []

11 to 15 million []

16 to 20 million []

Over 20 million

27. Has this after tax profit been consistent over the years?

Yes No

28. What is the value of your institution's outstanding loans portfolio?

Below 1 million

1 to 5 million

6 to 10 million

11 to 15 million

16 to 20 million

Over 20 million

29. What is the amount of recently written off debts?

Below 1 million

1 to 5 million

6 to 10 million

11 to 15 million

16 to 20 million

Over 20 million

30. What is the value of your institution's total assets?

Below 1 million

1 to 5 million

6 to 10 million

11 to 15 million

16 to 20 million

Over 20 million []

Appendix 2: Work Plan (2016 - 2017)

	August	September	October	November	December	January	February
Proposal writing							
Proposal presentation							
Data collection							
Data analysis							
Report writing							
Report submission							

Table 1: Work Plan

Appendix 3: Budget

Number	Item	Cost (ksh)
1	Stationery and printing services	4000/=
2	Library services and Bundle purchases	5000/=
3	Travelling expenses	2500/=
4	Telephone bills	2000/=
5	Miscellaneous expenses	2000/=
6	Data collection fees and Report preparation	12500/=
7	Publishing	20000/=
	TOTAL	48000/=

Table 2: Budget.

Appendix 4: List of all DTMs

Name of DTM	Location
1. Caritas Microfinance Bank	Cardinal Maurice Otunga plaza, Kauda street. Nairobi
2. Century Microfinance Bank	KK plaza 1 st floor, New Pumwani Road, Gikomba, Nairobi.
3. Choice Microfinance Bank	Siron Place, Magadi Road, Ogata Rongai.
4. Daraja Microfinance Bank	Karandini Road, off Naivasha Road
5. Faulu Microfinance Bank	Faulu Kenya House, Ngong Lane- off Ngong Road
6. Kenya Women Microfinance Bank	Akira House, Kiambere Road, Upper Hill, Nairobi.
7. Maisha Microfinance Bank	2 nd Floor, Chester House-Commercial Wing, Koinange Street, Nairobi.
8. Rafiki Microfinance Bank	Rafiki House, Biashara street, Nairobi
9. Remu Microfinance Bank	Finance House, 14 th floor, Loita Street, Nairobi.
10. Sidian Bank	Kilimani, Nairobi
11. SMEP microfinance Bank	SMEP Building, Kirichwa Road, off Argwings Kodhek Road
12. Sumac Microfinace Bank	Consolidated Bank House, 2 nd Floor, Koinange Street, Nairobi.
13. U & I Microfinance Bank	Asili Complex Building, 1 st Floor, River Road.
14. Uwezo Microfinance Bank	Rehani House, 11 th Floor, Koinange Street.

Table: 3 List of DTMs