RELATIONSHIP BETWEEN EXPANSIONARY STRATEGIES AND OPERATIONAL EFFICIENCY OF DEPOSIT TAKING MICRO FINANCIAL INSTITUTIONS IN KENYA

BY

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UNITED STATES INTERNATIONAL UNIVERSITY - AFRICA

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AND OPERATIONAL EFFICIENCY OF DEPOSIT TAKING
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Business in Partial Fulfillment of the Requirement for the Degree
of Masters in Business Administration (MBA)

UNITED STATES INTERNATIONAL UNIVERSITY

SPRING 2017
STUDENT’S DECLARATION

I, the undersigned, declare that this is my original work and has not been submitted to any other college, institution or university other than the United States International University in Nairobi for academic credit.

Signed: ________________________ Date: ________________________

Martin Musau (ID 644807)

This project has been presented for examination with my approval as the appointed supervisor.

Signed: ________________________ Date: ________________________

Dr. Amos Njuguna

Signed: ________________________ Date: ________________________

Dean, Chandaria School of Business
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ABSTRACT
This study sought to investigate the operational efficiency of Micro Finance Institutions (MFIs) in Kenya. The study specifically sought to determine the efficiencies from the perspectives of deposits, branch network and outreach and how they interact with operational efficiency of the MFIs. To achieve these objectives, the study used explanatory research design. The population of the study included all the registered Micro Financial Institutions (MFIs) in Kenya. The sample size was the 9 Deposit Taking Micro Finance Institutions (DTMFIs) registered and regulated by Central Bank of Kenya (CBK). The study used secondary data which was collected from the financial information of the MFIs for the period 2010 to 2015. Efficiency scores were calculated by use of Data Environment Analysis (DEA). Pearson Correlation, T-test and Regression tests were then conducted to test the degree of association between the variables of the study.

The findings indicate that the average efficiency of the DTMFIs in the six year period was 91.5%. Most of the MFIs operated inefficiently in terms of administration, employee and their allocation of their assets. Also some of the MFIs disbursed more loans than they could manage with the available funds exposing the depositor’s monies into risks of default and loss. The study found positive correlation between deposit expansion and efficiency levels. Also the correlation between number of branches and the efficiency of the MFIs was positive. The relationship between outreach and efficiency was negative. The study concluded that deposit levels and number of branches positively influenced the operational efficiency of MFIs which was a source of competitive advantage. The influence of outreach to the poor was found to be counterproductive and it was costly and inefficient.

The study recommended that MFIS engage in careful deposit mobilization and branching strategies while developing products for the entire segments in the market to accommodate both low income and large income customers so as not compromise on efficiency of their operations while pursuing outreach to the poor.
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DEDICATION

I dedicate this project to my family and friends.
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### ABBREVIATIONS AND ACRONYMS

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<tr>
<td>AMFI</td>
<td>Association of Microfinance Institutions</td>
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<td>CBK</td>
<td>Central Bank of Kenya</td>
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<td>CGAP</td>
<td>Consultative Group to Assist the Poor</td>
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<td>DEA</td>
<td>Development Envelop Analysis</td>
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<td>Development Financial Institutions</td>
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<td>DMUs</td>
<td>Decision making Units</td>
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<td>Deposit Taking Microfinance</td>
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<td>GDP</td>
<td>Growth Domestic Product</td>
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<td>LAC</td>
<td>Latin America and the Caribbean</td>
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<td>MIX</td>
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<td>ROA</td>
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<td>SMEs</td>
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<td>SSA</td>
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<td>THP</td>
<td>The Hunger Project</td>
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<td>UNCDF</td>
<td>United Nations Capital Development Fund</td>
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CHAPTER ONE

1.0 INTRODUCTION

1.1 Background of the Study

Access to financial services is pivotal to sustain survival of businesses and economic activities. The term access to financial services refers to the share of adults with access to the formal financial sector (Hannig & Jansen 2010, Demirgüç-Kunt & Klapper, 2013). Financial services have meaningful linkages with the economy such as providing valuable inputs for activities in the primary, industrial and tertiary sectors, and for individuals as well. Through a variety of financial services facilitate domestic and international transactions, mobilize and channel domestic savings and broaden the availability of credit for small and medium-sized enterprises (SMEs) and households. Trade is also facilitated, not only by a medium of exchange but also by a more friendly business environment and specific products (United Nations Conference on Trade and Development [UNCTAD], 2014).

At individual level, people who participate in the financial system are better and able to start and expand businesses, invest in education, manage risk, and absorb financial shocks (Jayachandran, 2006). According to World Bank (2014) the number of people accessing financial services has been growing globally. The report shows between 2011 and 2014, 700 million adults worldwide became account holders and the proportion of the unbanked dropped by 20%. The report further shows that 62% of the adults had bank accounts by the year 2014 which was an increase from 51% in 2011. However, despite the positive indicators of the proportion of the population accessing formal financial services, approximately 2 billion people globally remain without these very important services (World Bank, 2014). Most of the populations without access to financial services are the vulnerable group which largely includes women and the poor. Approximately, 54% of the poor among the developing countries remain unbanked and thus lack access to formal financial services. Formal commercial banks, exacerbates the situation by denying the financial services to the poor due to the high cost of small transactions, lack of traditional collateral, lack of basic requirements for financing and geographic isolation (Rabobank-Nederland (2005). Due to this
unwillingness by the commercial banks to bank the poor, they remain excluded from the formal financial system and this weakens their economic power and ability to invest.

To ensure that all people are banked and access formal financial services, the micro financial institutions serve this segment of population. These institutions retail financial services such as supplying loans, savings, and other basic financial services such as insurance, to the underserved segment in the population. This sub-financial industry is called Micro-finance and refers to the provision of financial services to those excluded from the formal financial system (United Nations Capital Development Fund [UNCDF], 2002).

For the micro-financial institutions to sustainably provide financial services to the unbanked in the economy: they should operate efficiently to remain profitable in the long run, overcome any negative shocks and contribute meaningfully to the stability of the overall financial system (Muriu, 2011). Thus the MFIs should allocate the available resources in the best optimal mix to yield the maximum output possible. Efficiency is used to refer to how well resources maximize are used to maximize the production of goods and services (Kipesha, 2013). In microfinance institutions, operational efficiency would be viewed as how well MFIs allocate input resources (asset, subsidies and personnel) to produce output measured in terms of the loan portfolio (Bassem, 2008). It is commonly defined as the cost per unit of output.

Globally, operational efficiency of MFIs has received prominence and attention as a crucial consideration among financial sector players. In India, a DEA analysis found that a high level of inefficiencies among the MFIs with an average efficiency score of 63.5% (Singh, 2014). This showed an inefficiency score of 36.5%. This means that one of the input costs were unnecessarily high or the mix of the input costs was not efficient enough leading to losses and wastages.

In Europe, Microfinance Institutions (MFIs) mainly focus on the financing of very small and small businesses (business microcredit) and low income or poor individuals (personal microcredit). The driving force of the microcredit market is financial and social inclusion. Targeted micro-borrowers belong to segments of the population such as (long-term) unemployed, women, migrants, young, rural and/or disabled people. Business loans generally
target very small (new) businesses that lack any form of collateral or credit history. However, no single definition of microfinance exists in Europe (European Banking Federation, 2010). The relative number of European MFIs is relatively low, estimated to range between 500 and 700 institutions (Bendig, Unteberg and Sarpong, 2014). Regarding profitability, microfinance providers managed to achieve positive return on assets of 6.7% in 2012 and 5.6% in 2013. With respect to cost structure, the surveyed institutions decreased their expenses compared to 2011 with an operating expense ratio of approximately 18% in 2013.

An efficiency study in five ASEAN countries found that MFIs in Vietnam were relatively more efficient than their counterparts in the rest of the countries with efficiency level of 91.3% in 2011 while MFIs in Laos were least efficient at 62.5% in 2011 (Tahir & Tahrim, 2013). Further the results showed that pure technical efficiency was lower than the degree of scale efficiency for Indonesia, Cambodia, Philippines and Vietnam, implying that the microfinance institutions had been inefficient in controlling their costs rather than operating at the wrong scale. In Europe, large banking groups were on average found to be more efficient than smaller ones such as MFIs (Dell'Atti, Pacelli, & Mazzarelli, 2015).

In Africa, MFIs in countries such as Uganda, Benin, Ghana, Ethiopia, Malawi, Burkina Faso, Mozambique and Senegal had accumulated 2.9 million U.S dollars loan portfolio, 1.6 million U.S dollars savings and advanced 28 rural financial institutions to their independence by 2011 (The Hunger Project (THP), 2013). The formal MFIs have higher efficiency compared to semi-formal and cooperative MFIs. The region has more cost per borrower and cost per saver than other regions. African MFIs face challenges of inefficiencies in their operations just like in other regions. The MFIs operating in African are technically inefficient with an average efficiency of 48.9 per cent of the maximum achievable output (Gebremichael & Gessesse, 2016).

In Middle East and North Africa (MENA), MFIs waste resources in terms of inputs such as staff resources, equipment and facilities and administration costs and do not produce enough outputs such as making loan, raising funds, and obtaining more borrowers per staff (Hassan, Sanchez and Ngene, 2012). In Ghana, the overall economic efficiency of MFIs was 56.9% which implies a high inefficiency (Abayie, Amanor, & Frimpong, 2011). MFIs operate in an
environment with high competition from the commercial banks and their inability to operate efficiently cannot sustain their operations for a long period of time. In Sub Saharan Africa (SSA), MFIs suffer mostly due to managerial inefficiency and small bit of scale inefficiency (Darko, 2013). In Ghana, MFIs are producing at constant cost to size with an overall average economic efficiency for the group of MFIs to be 56.29%; giving an indication of a possible substantial reduction in cost. Hence, there is a possibility of enjoying economies of scale in lending, so long as the microfinance units institute and or heighten savings mobilization strategies in their operations.

In East Africa, the region has become a hotbed of innovation in financial services. Microfinance as financial-sector development pursues the objective of a sound financial sector, consisting of a multitude of formal providers competing for clients from all segments of society (Responsability, 2013). The evolution towards financial inclusion is driven by MFIs who combine the credit cooperatives’ willingness to serve poor people with the commercial banks’ capacity and professionalism. East Africa is one of the world regions where MFIs have proven that they can handle deposits and grow into full-fledged financial providers. In Kenya, the successful transformation of eight credit-only MFIs into deposit-taking MFIs is a strong signal by the sector. This new regulatory category, supervised by the Central Bank of Kenya, has separate licensing and transparency requirements, deposit protection, dissolution mechanisms, corporate governance, and accounting standards (Africa Research, 2015). The Central Bank is currently processing nine additional applications. The central banks of Uganda and Tanzania also offer deposit-taking licenses to MFIs, but have registered only four and two successful applications respectively so far. MFIs describe the process as challenging, for example, in terms of provisioning requirements, capital requirements, and shareholder-structure prerequisites (Responsability, 2013).

Micro Financial Institutions are facing competition from commercial banks as well as challenge of pure technical inefficiencies from their internal operations and misallocation of inputs to produce outputs (Kipesha, 2012). In Tanzania, the operations of the MFIs are low and are caused by misallocation of inputs and also operating in decreasing returns to scale (Kipesha, 2013). In Ethiopia, the efficiency of MFIs is affected by the size, sustainability and age or experience of an institution (Zerai & Rani (2012). In Uganda, MFIs lent to both
individuals and groups. Approximately 79% are not regulated by the Central Bank, 86% had their funding sources as loans, grants, excluding deposits/savings and 73% attained operational self-sufficiency (Sekabira, 2013). This shows that MFIs in East Africa are operating inefficiently and face the challenge of sustainability in the long run. It is thus crucial for such MFIs to develop measures to manage allocation of operating cost and increase revenues (Kipesha, 2013).

In Kenya, the growth of MFIs has been steadily rising over the years and the microfinance industry in Kenya is highly diversified. As at December 2013, the whole sector had expanded to 670,557 microfinance active borrowers (Association of Microfinance Institutions [AMFI], 2014). This represented a low marginal growth of 1.7%. The report further showed that microfinance industry had a total of 419 branches across the country. In terms of staff numbers, the microfinance industry in Kenya had 5,833 staff members with a staff allocation ratio of 49.9% (AMFI, 2014). However, the Microfinance environment window of opportunity is slowly closing and the MFIs need to operate strategically and efficiently. Firstly, MFIs are using scarce and limited input resources; they are facing increased competition among MFIs themselves and lastly the entry into the industry by the commercial banks and other private investors due to the profitability potentials of the industry.

1.2 Statement of the Problem

Financial services facilitate efficient allocation of productive resources which provides fertile grounds for nurturing trade, investment and economic growth. Despite this financial inclusion remains low in SSA countries: only 34.2% of adult population has an account at a formal financial institution. This proportion is very low when compared with the proportion in developed countries such as US Germany at 98.7% and United States at 93.6% (World Bank, 2014). Microfinance or microcredit has therefore been associated with empowering the low income to account properly and independently for their small enterprise businesses and thus take control of their livelihoods. In 2014, Kenya had 9 only Deposit Taking Microfinance (DTMF) institutions which had only 96 branches. This shows how low microfinance industry had penetrated within Kenya which houses close to 44 million people. The low penetration rate of the microfinance industry is a product of several intertwined
factors. Among the many problems affecting their growth, difficulties on accessing finance is arguably a central challenge. MFIs as opposed to commercial banks face specific constraints in raising finance (Berger & Udell, 1998).

In Kenya, a large number of MFIs face difficulties in accessing finance from financial institutions as the major constraint to their development (Satta, 2003). MFIs access to the formal financial sector is constrained by high risk and transaction costs brought about by information asymmetry, difficulties in enforcing contracts, and lack of appropriate instruments to manage the risks involved. In addition to the challenging environment, most of the MFIs operate inefficiently brought about by their nature of their operations. Firstly, most of them strive to keep sufficient funds to meet unexpected demands from depositors, which in turn makes them lose market opportunities and as well as high cost of holding the cash. Also any expansion and growth strategies by the microfinance institutions to reach out more poor people is costly since the cost of providing services to poor segment is high compared (Lafourcade, Isern, Mwangi & Brown, 2005). This shows how largely the microfinance industry is inefficient compared to large commercial banks. Therefore, there is need for such institutions to utilize their inputs maximally to produce optimal outputs. Thus it is critical to know how well MFIs allocate the input resources such as asset, subsidies and personnel to produce output measured in terms of the loan portfolio (Bassem, 2008) or financial revenue.

Several studies have been done on the MFIs in Kenya. Kipesha (2012) evaluated the efficiency of Microfinance institutions operating in East African using non parametric approach (Data Envelopment Analysis). Chemining’wa (2010) investigated the relationship between MFI outreach and financial sustainability in Kenya. Githinji (2010) studied the operating efficiency and loan portfolio indicators usage by the MFIs. Ochola (2016) investigated the efficiency of MFIs in Kenya using total assets and operating costs as inputs and financial revenue as the output. However none of these studies has studied the relationship between expansionary strategies and operational efficiency of the DTMFIs in Kenya. This study sought to fill this gap in knowledge on the strategy-efficiency relationship in the microfinance industry.
1.3 Main Objective

The main objective was to investigate the relationship between expansion strategies and operational efficiency of the MFIs.

1.4 Specific Objectives

The study sought to achieve the following objectives.

1.4.1 To determine the relationship between deposit mobilization and the efficiency of the MFIs.
1.4.2 To investigate how the branch network relate with efficiency of the MFIs.
1.4.3 To examine the relationship between customer outreach and the efficiency of the MFIs.

1.5 Significance of the Study

1.5.1 MFI Managers

The study findings will go along why to help MFI managers by generating information on how different operational input costs affect the efficiency of their institutions. This will be helpful in strategic planning and in drafting cost minimization strategies.

1.5.2 Central Bank of Kenya

Additionally, the study will provide helpful information to the policy makers especially the CBK on how to promote micro finance industry and strengthen the efficiency of the institutions which in turn ensures most of the people financially included in the formal financial system.

1.5.3 Association of Microfinance Institutions (AMFI)

AMFI will benefit as an umbrella body of microfinance’s in Kenya with knowledge on how different costs affect the efficiency of operations. This can be used to develop guidelines on MFIs in Kenya as well as advice to the MFIs on cost minimization strategies.
1.5.4 Scholars and Academicians.

The study will act as a reference to future scholars and academicians as well as contributing to the field of knowledge on the operational efficiency and its applicability in finance sector especially in MFIs.

1.6 Scope of the Study

The scope of the study includes data on the inputs in terms of costs and assets and the output in terms of, profits, revenues and loans of the micro finance institutions in Kenya. The data will be collected for a period of 5 years between 2010 and 2015. The population of the study include all the 9 DTMFIs who have been registered, licensed and are regulated by Central Bank of Kenya

1.7 Definition of Terms

1.7.1 Micro Finance

This is defined as the provision of financial services to those excluded from the formal financial system (UNCDF, 2002).

1.7.2 Efficiency

This is how well resources maximize are used to maximize the production of goods and services (Kipesha, 2013).

1.7.3 Micro Financial Institutions [MFIs]

Micro financial Institutions refers to the institutions which provide retail financial services including, savings, credit, cash transfer, financial management, insurance and other financial services to the poor (Dalley-Harris, 2002).

1.7.4 Deposit Mobilization

Deposit mobilization is a scheme intended to encourage customers to deposit more cash with the banks and who use the money to disburse more loans and generate additional revenue for them through a process called credit creation (Kazi, 2012).
1.8 Chapter Summary

This chapter has provided information on the state of financial access and the gap which has been left by the big commercial banks in provision of financial services to the people. The chapter has demonstrated an underserved segment in the population which had been neglected and left out of the formal financial services and the crucial role of the Micro financial institutions in providing financial services to the underserved segment. There is a discussion on the inefficiencies of the MFIs which threatens their sustainability in the long run. The study has provided the objective of the study and how important the study will be to various stakeholders. The seemingly most salient terms have been defined and the scope of the study provided in this chapter.

Chapter two presents the literature review. It presents a review of the input resources and costs which include the personnel costs, administrative expenses, total assets and deposits in relation to the operational efficiency of the Micro-financial institutions.

Chapter three presents the research methodology used in this study. It details the research design, population and sampling, data collection methods, research procedures and how data collected will be analyzed.

Chapter four presents the results and findings of the study. This includes presentation of the findings and a brief interpretation of the findings.

Chapter five presents the discussion of the findings with close reference with previous studies and literature, conclusion, and recommendations for practice and further areas of research.
CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction

This chapter presents a review on efficiency of financial institutions. The chapter covers comprehensively the inputs which financial institutions put into their financial operations to generate revenue. The resources used by the financial institutions are reviewed in terms of the expenses the banks incur to generate revenue. These include costs on the personnel, operating costs, total assets of the banks and the customer deposits which banks use to generate more revenue.

2.2 Relationship between Deposit Mobilization and Efficiency of MFIS

Micro-financial institutions can increase the customer deposits through deposit mobilization. This is a scheme intended to encourage customers to deposit more cash with the banks and who use the money to disburse more loans and generate additional revenue (Kazi, 2012). Mohan (2012) argued that mobilization of deposits was one of the important functions of banking business. It is an indispensable act or to increase the sources of the banks to serve effectively. Given that banks do not have adequate own money to cater for the investors needs in terms of loans; they depend on customer deposits to generate funds for granting loans to other customers. Thus banks enjoy more deposits since this allows them to disburse more loans and make other investments.

Customer deposits are monies placed into financial institutions for safekeeping by people who have accounts with such financial institutions. Hauner and Peiris (2005) explained customers’ deposits as the enhancement of the pool of financial services by the banking institutions which are tailor made to suit all levels in the society. Through the deposits, financial institutions invest and generate more revenue from the deposits. These deposits have a number of benefits to a financial institutions such as assisting to improve the technological systems (Abayomi & Ikhide, 1997), financial innovations (Nanna & Dogo, 1998), institutional diversification (Berlyne, 1982) and lastly overall improvement in contribution of financial services within the economy (Friedman, 1999). The benefits from
innovations help in reducing costs and increasing efficiency in operations of commercial banks.

Hirschland (2008) observed that saving was good for both the MFIs and customers. The author argued that savings provides stable, low cost means to finance, loan portfolio which dramatically increased institutions client base as well as improving borrowers capability to repay. Also mobilizing voluntary saving helps MFIs to deepen their influence among the poor clients.

Khatun, Khan, Islam (2010) did a study on Microfinance Institutions’ deposit mobilization issues from the perspectives of the clients - the members of the MFIs by looking at the different aspects of field level experience and practice of the NGO-MFIs working in Bangladesh using a sample size of 450 members of different NGO-MFIs. The results showed that MFIs were filling the gaps of the financial services required by vast majority of relatively poor people having no access to the banking system, and thus working as a complementary segment of overall financial system of the country with demands for more services to render.

Mwangi, Muturi and Ombuki (2015) investigated the effects of deposit to asset ratio on the financial sustainability of deposit taking micro-financial institutions in Kenya. The study targeted 9 registered MFIs regulated by Commercial Bank of Kenya. They found that deposit to asset ratio was statistically significant in determining the financial sustainability of the MFIs. They further held that MFIs should be listed under the GEM segment of capital markets to increase their share values and their ability to finance themselves through stock.

According to CBK (2015), customer deposits had increased by 8.73 per cent from Ksh. 2.29 trillion in December 2014 to Ksh. 2.49 trillion in December 2015. The report attributed the growth of the customer deposits to increase in deposit mobilization by banks and other financial institutions through expansion and outreach strategies while at the same time leveraging on mobile platforms minimize the cost of the deposits.

A study by Okun (2012) found a positive and significant correlation between deposits ratio and Return on Assets (ROA). The study recommended that management in financial
institutions invest in more cheap deposits such as mobile and agent banking options to reach more customers and raise the customer deposits.

Muriu (2011) found a positive significant relationship between deposits to assets ratio and MFI sustainability. He attributed these results to the fact that a proportionally larger deposit base will typically lead to an overall lower cost of funds for the MFIs with an implication of improved profitability and consequently financial sustainability assuming that the deposits program is cost efficient. Cull, et al (2009) argued that MFIs should therefore broaden their services toward offering (more) deposits so as to broaden their lending capacity.

The success of deposit mobilization is influenced by several factors. Thus different MFIs will succeed at different rates depending on the type of the customers, the type of environment and the cost of mobilization.

2.2.1 The Targeted Customer

The degree of mobilization of the deposits among the MFIs is attributable to a variety of factors: one is the fact that most of the people who access the services from MFIs are poor and lack the capacity to save, MFIs offer low interest rates on small deposits, incur high costs due to the small amounts of deposits and lack convincing products to entice the poor segment to invest. The ability to keep deposits by the poor segment of the market is influenced by the context of the institution; country and also the nature of deposit service since the poor segment of the market prefer individual voluntary product to packaged group or compulsory savings products (CGAP, 2003).

Tareq (2015) also stated that, income is the most important factor that influences customer deposits. Higher the income greater will be the ability to acquire temporary surpluses which can be deposited with the banks as well as the need to hold financial assets as a means of payments. It is evident that capacity of the poor to save is much higher than was anticipated. The individual savings behavior of the households not only depends on his income but also on the income of others.
2.2.2 Micro and Macro-Environment

Internal factors such as the efficiency of operations, the liquidity of the MFIs structure, size (Herald and Heiko, 2009) and culture are some of the internal factors which affect the degree of deposit mobilization. The type of mobilization strategy, also determines the degree of mobilized deposits by the MFIs. Martin (2013) noted that financial institutions were actively pursuing innovations in mobile technology, information management, and agent distribution systems which could lower the costs of providing micro financial related services. The level of deposits is also influenced by the perceived safety of the savings by the customers and also the ease with which they can access their deposits whenever in need of money (Branch & Klaehn (2002). This in turn depends on the security measures put in place by the bank and extent of branch growth. A study by Venkatesan (2012) in India on deposit mobilization performances among the commercial banks of India during the period 1985-98 and concluded that branch expansion and GDP were among the significant factors influencing time deposits.

The ability of a MFI to mobilize for funds is also dictated by the macro-economic environment. According to CGAP (1999), the presence of high inflation rates, political instability, interest rates (Siyanbola et al., 2012) extensive government interventions through interest rate controls or subsidies can highly influence the ability of the MFIS to mobilize savings. Nugel (2012) argued that as currencies depreciates in one country, the level of deposits declines since investors tend to withdraw their deposits and seek other alternative sorts on investments. Alemayehu (2015) concluded saving was negatively correlated with unstable exchange rate in underdeveloped and developing.

The MFIs also mobilize funds effectively where the financial is highly liberalized. Mobilization of the savings by the MFIs makes them self-reliant independent from donors. This also increases the feeling of ownership and strengthens the MFIs through increased information about the client payments and saving culture (Dauner, 2004).
2.2.3 Cost of Mobilization

Although mobilization of deposits for the MFIs is a superior way of raising funds, it has its own weakness. Dauner (2004) cautioned that mobilization of savings had severe effects on MFIs. He observed that when clients save frequently in small amounts, it is highly probable for such institutions to incur high administration costs. Ledgerwood (1999) asserted that the cost of deposit mobilization depends on both internal and external factors. Internal factors could the efficiency of operations while the external factors included tax rates, minimum reserve requirements, and general market conditions.

The management of the MFIs should ensure that cost is maintained at minimal level possible. This is important in ensuring the sustainability of saving products as well as passing low costs to the customers who have little income and may be unable to afford financial services, and pay higher interest rates to clients that already hold savings accounts (Martin, 2013). Therefore, MFIs must consider the cost of deposit mobilization to ensure that it is not too high to them and that the customers are not charged highly which may end up excluding the potential poor clients from accessing the services.

2.2 Relationship between Branch Network and Efficiency of MFIS

The increased competition brought about by technological advancement and influx of many financial service providers has increased the demand for strategic choices to win and retain more customers in profit making companies. Financial institutions pursue strategic branch expansion to sustain their competitiveness in the market by bringing financial products closer to the people. Goetz, Laeven and Levine, (2016) argue from a theoretical perspective basing their argument on textbook portfolio theory which suggests that expansion of geographical coverage can lower a bank’s risk when the expansion entails addition of assets whose returns are not perfectly correlated with existing assets.

Boyd and Prescott (1986) held the view that financial institutions whose operations had been diversified enjoyed cost-efficiencies which in turn promoted their profitability and sustainability. Bruhn and Love (2009) investigated the influence of branching of a large consumer goods retailer in Mexico called BancoAzteta in Grupoelectra. The study found that
opening of branches in the area highly correlated with increase in start-up of small businesses and level of income. The study underscored that branch expansion had significant effect on the financial as well as economic lives of the people and the region at large.

Branch expansion presents several advantages: it increases the access points of the MFIs products which increases the chances of reaching many customers. Also strategic branch expansion may be a source of competitive advantage especially when the financial institution is the first mover to a certain location. In India, expansion of MFIs in Urban centers was associated with increased rate of borrowing in neighborhood’s (Benerfee & Mullainathan, 2010). Allen, Carletti, Cull, Qian, Senbet, and Valenzuela (2012) conducted a study on the Equity bank business model of reaching to the under-banked segment through strategic penetration and development of banking products. They found that such a model highly succeeded and provided a solution to financial exclusion among the poor. A quarterly report on bank supervision by CBK (2016) indicated that through branch expansion, use of technological innovations for deposit mobilization and the agency banking model, the banks and financial institutions expanded customer deposits in the banking sector by 2.6% from Kshs. 2.56 trillion in March 2016 to Kshs 2.62 trillion in June 2016.

Branch expansion increases the chances of customers to access the financial products of financial institutions. In Japan, some regional banks began to expand branch network beyond the premises of their headquarters. The banks which went beyond their headquarters and branched to others areas recorded high ratio of loans compared to those banks which had not branched (Harimaya & Kendo, 2012). In United States of America, a study by Seale (2004) found that commercial banks which had expanded widely recorded relatively increase in profits, low costs and high income from fees.

Although, branch expansion as a strategy may enable MFIs to reach the majority poor who need such financial services but are locked out because the providers are not within their area of accessibility; it has been criticized on grounds of its limitation and cost implications. Firstly, expanding companies through branching is an expensive and costly undertaking and companies need to plan well before such an idea is implemented. Secondly, it also takes a lot of time to establish since new equipment and employees are required. Thirdly, it complicates
the monitoring and control function of a company since the functioned is devolved and becomes difficult to monitor from one place. The advancement in technology also enables banks to provide some services remotely. This renders bank branches relatively more expensive channels of delivering retail financial services (Orlow, Radecco, Wenmiger, 1996). There exist two main factors which need to be factored in when making branching decisions.

**2.2.1 Market Concentrations**

Financial institutions seek to increase the level of deposits by providing convenient locations for clients to make their deposits. This is mainly through branch expansion or agency approach. However, the common assumption among the financial institutions is that deposits-seeking ventures should enable such firms to generate revenue which exceeds costs of sourcing for such deposits such as costs of establishing new branches and operational costs of such branches (Hannan & Hanweck, 2007). Thus any branching activity and decision should be well evaluated to ensure that the above is met. A highly concentrated market may distort the very aim of branch expansion since cost of establishment may be too high compared to the revenue generated due to the concentration of the market.

Firstly, the population should be well evaluated to ensure it is growing and enough to sustain a financial institution’s activities. Also this goes a long way to determine the size of the branch. The MFIs should build a branch such that in future or incase the population grows; the existing branches can still accommodate such huge numbers. Secondly, in case of more growth to other locations, the cost of establishing new branches in those locations should be affordable and manageable. Another consideration is the radius of land served by the branch. The branch network should reduce the travel time of the clients (Hannan & Hanweck, 2007).

Thus creating network of branches and providing favourable deposit rates are key determinants of branch networks especially during isolated periods of extreme financial crisis. In Turkey, financial institutions collected deposits from the public and invested them in government real interest rates during the period of high budget deficit (Damar, 2007).
The degree at which the market is saturated with the financial providers also influences the rate at which financial institutions create branches. At some level, the financial institutions may compete on pricing if the location is highly concentrated but if the location is not, they may opt to compete through branch expansion. Merges may reduce the level of branching since the merged entities may have branches in different locations and thus costs on branching are saved. Also if the market is highly concentrated, the financial institutions may develop some switching costs strategies to make it hard for clients to migrate to other institutions (Hannan & Hanweck, 2007).

2.2.2 Size and Number of the Branches

The size of the branch is key consideration when making branching decision. This is because the size directly influences the costs of establishment and operational costs and its can be adversely affected by technological changes. If new technologies are developed, the usefulness of such branches could be rendered useless or unprofitable. The size may be small but the returns could be lucrative. For example, establishing a small branch near a supermarket or in the supermarket may be very strategic and very profitable. The cost could be small but with very good returns (Hannan & Hanweck, 2007). A busy market place may require a relatively larger size of a branch to accommodate the likely many customers coming to transact to run their business.

Several studies also found no direct influence of branch network and performance. For example, Hirtle (2007) investigated the relationship between branch network size and the profitability of companies. The study found that no relationship between branch network size and profitability. The success of branch expansion strategy is also depended on the size of the financial institutions.

Hensel (2003) found that small European banks experienced relatively more cost efficiencies compared to large European banks. This further demonstrates that branch expansion is not necessarily successful but other factors too come into play for it to be successful. It is thus critical for financial institutions to be aware of the extent to which they can expand. Otherwise the strategy could be counter-productive. Excessive branch expansion lowers the cost efficiencies and profit effectiveness (Harimaya and Kando, 2012). However, the authors
argue that when branch expansion was done to certain optimal levels, it lead to both cost and profit efficiencies especially through diversifying the portfolio.

Contrary to the views of the critics of branch networking, Spieker (2004) holds that bank branches are highly effective and profitable channels of providing retail services relative to other methods such as internet or call centers. The author argues that branch expansion is justified due to several reasons such as changes in branching regulations, changes in economic and demographic status of the target segment and lastly increased profitability through expansion when well managed. This is probably due to the economies of scale and diversification of the risks.

2.3 Relationship between Outreach to the Poor and Efficiency of MFIS

The concept of microfinance was developed from a social motive and mission of enhancing outreach of financial services to the underserved segment of the population. This segment is majorly the poor and economically challenged group of people. Thus one of the main objectives was to reach out to that financially secluded segment in the market. Due to the need to sustain such a mission, the focus shifted to economic sustainability and provision of market related financial products and services. The concept of outreach was born out of the pursuit by the MFIS to provide financial services to the underserved and the poor. Outreach refers to the efforts made to extend microfinance services to unbanked people and can be measured in breadth or depth. Breadth measures the number of clients served and the provided volume of services, meanwhile depth measures the range of socioeconomic levels of the clients (Microfinance Information eXchange [MIX], 2005). According to Schreiner (2002) outreach has six dimensions that involve a trade-off between sustainability and outreach. The dimensions are grounded on the argument that MFIs should provide certain financial service at minimal cost while maximizing the available levels of labour supply. Theoretically outreach has been explained by two conceptual motives; the social and profit motives.
2.3.1 Social Motive of Microfinance

The social motive was born from the Welfarist school of thought on microfinance. This was based on the need to alleviate poverty by providing access to financial products which is a key component of economic empowerment. Access to financial products was seen as a way of improving the welfare of the poor and the unbanked. Thus the approach leans more on depth (number of the underserved segment reached) as opposed to the numbers reached. Brau and Woller (2004) argued that the success of any organization was founded on societal needs other than by financial outcomes and returns. Although self-sustainability is needed and cherished, Omri and Chkoundali (2011) argued it was not a necessity. The most necessary aspect was that of meeting the needs of the society at that time.

Thus welfarists, embrace both sustainability and societal aspects of the MFIs for both profit and not for profit institutions (Brau & Woller, 2004). Depth in most cases is measured by the average loan sizes taken as a ratio over per capita to allow for international comparison. This is however, an assumption that smaller loan sizes are associated with the poor clients and that the rich do not request small loans (Olivares_Polano, 2005). This assumption may be untrue since where there are no accesses to credit; richer clients will be willing to take high opportunity costs to borrow small amounts of money (Dunford, 2002). The approach also suffers from the fact that information on income distribution is assumed and premised which may not be true. Another representation of depth is the distribution by gender. This stems from the premise that women are poorer than men and any financial institution reaching more women has depth of outreach (Oliveras-Polanco, 2005).

Lapenu and Zeller (2002) argued that transaction costs for smaller loans which are a product for the poor are high compared to the larger ones. Thus an institution which pursues depth may be less sustainable compared to the ones giving big loans. This shows that there is a trade-off between sustainability and the depth of outreach. Therefore, MFIs are now focusing on providing services to big clients whose transaction costs are relatively lower compared to the smaller ones with high costs. This shift however of targeting the big clients and assuming a more commercial approach goes against the traditional aim of microfinance institutions of providing credit to the poor.
2.3.2 The Profit Motive of Microfinance

The other school of thought pursues an institutionalist approach which focuses on sustainability and outreach. According to this school of thought, institutions operations should be able to generate revenue to cover both the operating and financing costs. Traditionally MFIs used to depend on donor funding which made them so vulnerable especially when the donors withdraw their support mainly due to political realignment (Schreiner, 2002). Due to this uncertainty about the future funding and support, MFIs had to shift focus towards how to sustain their activities in the future. This in turn invited the concept of profit making to generate profit to cover operating costs and remain with surplus. Thus MFIs shifted focus towards the breadth of outreach aimed at having as many clients as possible which could generate revenue for the institutions as opposed to the depth of the outreach of serving the underserved in the society. In the contemporary world today, MFIs pursue institutionalist approach. Thus they seek for financial resources, customers and face competition and thus have to come up with strategies to remain sustainable. This raises the need for the MFIs to seek more clients to work with and also convince them to deposit so as to have enough liquidity to facilitate loan advancement.

To effectively sustain their operations, MFIs have to raise funds for their investment activities and one of the ways is through increasing deposits. As a way of financing, customer deposits could be increased through increased numbers of clientele. Microfinance institutions finance their operations through three main sources: debt, equity, and deposits, if deposit utilization is allowed. For the last couple of years, debt has accounted over thirty percent of the total funding of MFIs in most of the world’s regions. Studies on MFIs total debt financing made in 2010 show that financial institutions provided 38 percent of the total debt, meanwhile Development Financial Institutions (DFI) and funds provided 19 and 22 percent respectively (Sapundzhieva, 2011).

The increased focus on financial sustainability and efficiency by microfinance institutions is due to several developments. Most importantly, a commercialization of microfinance has taken place. This has induced microfinance institutions to provide a wider range of financial services, such as savings funds and insurance services. Lately, MFIs have experienced a
paradigm shift concerning the main goal of their operations. MFIs have gone from being subsidized non-self-sufficient to efficient profit maximizing institutions. Some arguments presented suggest that as MFIs serve more clients, transaction costs are reduced and this helps in attaining sustainability since transaction costs are major determinants of financial performance (Mersland & Strom, 2010).

Various scholars have reviewed the relationship between outreach and sustainability of MFIs. For example, Oliveres-Polanco (2005) investigated the relationship between sizes of the loans and the outreach in the microfinance industry. The data was collected from 28 MFIs in Latin America. The study found that a trade–off exists between the extent of outreach and the sustainability of MFIs. The same relationship was affirmed by Makame and Muinde (2006) who studied the relationship using depth and breadth measurements in East African countries.

Heidmann and Nilsholm (2012) investigated whether the relationship between outreach to the poor and efficiency of MFIs between year 2000 and 2010 using a sample of 1679 observations from countries worldwide and analyzed the data through Stochastic Frontier Analysis. The study found a negative correlation between outreach to the poor and efficiency of MFIs. The results concur with those of another study by Hermes, Lensink and Meesters, (2011) who also investigated whether there was a trade-off between outreach to the poor and efficiency of MFIs by using a sample of over 1300 observations from MFIs worldwide. Their results also suggested that outreach and efficiency were negatively correlated.

Awaworyi and Marr (2014) examined and compared the relationship between sustainability and outreach of MFIs in Latin America and the Caribbean (LAC) with MFIs in South Asia (SA) to ascertain the hypothesized relationship that microfinance institutions (MFIs) in Latin America and the Caribbean (LAC) had different operational strategies to MFIs in South Asia (SA). They found that trade-offs existed between outreach and sustainability in both regions. However, the severity of trade-off was dependent on which goal MFIs decided to focus on in each region.
2.6 Chapter Summary

This chapter has reviewed some MFIs strategic activities relating to efficiency of the financial institutions. The chapter has widely discussed the strategies employed by the MFIs to increase profitability. The factors included deposit mobilization, branch expansion and networks and degree of customer outreach.

The next chapter is presents the Research Methodology. This includes research design, population and sampling design, data collection methods, research procedures and data analysis methods which will be used in the study.
CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 Introduction

This chapter covers the information on the research methodology adopted in this study. This entails the research activities pertaining planning, collection, collation, cleaning, validation, analysis and presentation of the data. The chapter presents information on the research design, population and sample, data collection methods, sampling design and sample size, research procedures, data analysis methods that were used by the researcher in the field and post field activities. The chapter also covers a section on chapter summary which highlights in brief the activities of the entire chapter.

3.2 Research Design

A research design is a blueprint for conducting a study with maximum control over factors that may interfere with the validity of the findings (Burns & Grove, 2003). It constitutes the blueprint for the collection, measurement and analysis of data, (Kothari, 2005). The purpose of research design is to reduce the ambiguity of research evidence. It represents a plan of how, when and where data for the study is to be collected and analyzed. A research design is thus very important in guiding the research activities and solving research problems as well as achieving research objectives.

This study employed a correlational design (explanatory) in which investigators use the correlational statistic to describe and measure the degree or association (correlation) between two or more variables or sets of scores (Creswell, 2012). The main aim of explanatory research was to identify any causal links between the factors or variables that pertain to the research problem. This design was highly structured and highly controlled to provide valid and reliable results. The design focuses on how one variable affects or is responsible for changes in another variable. Although in business, the relational aspect may not be explicit, the approach was used to understand, explain and control relationships between variables. This approach was non-experimental in the sense that the variables were not manipulated by the researcher and instead were studied as they existed. According to
Belli (2008) non-experimental research is useful in social science as that many variables of interest cannot be manipulated because they are attribute of variables, such as gender, socioeconomic status, learning style, or any other personal characteristic or trait.

This method was adopted to establish the relation between some expansionary strategies adopted by MFIs and the operational efficiency of the Micro-financial institutions. The design was chosen over others since it could determine the relation between variables of interest.

3.3 Population and Sampling Design

3.3.1 Population

Population refers to an entire group of persons or elements that have at least one thing in common. According to Polit and Hungler (1999), population is the totality of all subjects that conform to a set of specifications, comprising the entire group of persons that is of interest to the researcher and to whom the research results can be generalized. This is the aggregation of cases, subjects, objects or members that meet specified set of criteria. A criterion specifies the characteristics that people in the population must possess in order to be included in the study (Polit & Hungler 1999). In this study, the eligibility criterion of study population was guided by the following specifications. Firstly, registration of the financial institutions with Association of Microfinance Institutions (AMFI) and secondly, it was supposed to be licensed and regulated by the Central bank of Kenya.

3.3.2 Sampling Design

Sampling is the process of selecting a portion of the population to represent the entire population. Mugo (2002) defines sampling as the act, process, or technique of selecting a suitable sample, or a representative part of a population for the purpose of determining parameters or characteristics of the whole population. He further asserts that sampling is important in research to draw conclusions about populations from samples. Sampling is done to obtain a sample rather than a complete enumeration (a census) of the population for many reasons such as cost and affordability, to meet timeline of the research findings, some population being inaccessible and sometimes if the probability of destructiveness of the
observation is very high. Sampling should mirror and reflect the population. Thus its degree of representativeness should be very high. A sample is often described as being representative if certain percentage frequency distributions of element characteristics within the sample data are similar to corresponding distributions within the whole population. This ensures that the findings from a sample are as similar as possible to those of the entire population. Sampling is classified into the several sections.

3.3.2.1 Sampling Frame

Sampling frame is the set of source materials from which the sample is selected. A sampling frame provides a means for choosing the particular members of the target population that are to be sampled in the study. According to Cooper and Schindler (2006) a sampling frame is the list of all components from which the sample is taken which is similar to the population under study. A sampling frame should be comprehensive to ensure effectiveness and efficiency of the sample. Therefore, all of the target population should be included, the full range of dimensions, and information needed to inform the sample selection are covered. In this study, the sampling frame included all the 12 MFIs (Appendix 2) which are licensed and regulated by CBK.

3.3.2.2 Sampling Technique

A sampling technique is the method used to generate a sample from the entire population. Lind, Marchal and Wathen (2008) observed that researchers use sample which is a subgroup of the population to get information about population of interest and to draw inferences about the population. Using a sample save lot of time and money, get more detailed information, and they are able to get information which may not be available otherwise (Bluman, 2009). There are two major categories of sampling techniques: probability sampling and non-probability sampling techniques. Fox and Bayat (2007) observed that probability sampling is used when every element of the population has a known and non-zero chance of being included in the sample. Non-probability sampling is subject in nature. It refers to range of techniques where the probability of selection each sampling unit is not known and the selection of sampling units is done according to the researchers’ judgment or knowledge (Cooper & Schindler, 2006).
This study adopted a judgmental (purposive) sampling technique in this study. This is a non-probability sampling technique which requires researcher to use his personal judgment to select cases that he thinks will best answer his research questions and meet his research objectives (Saunders, Lewis & Thornhill, 2009). This type of sampling technique is used when the sample is selected according to a researcher’s conviction that they have appropriate characteristic of the sample members and would generate data which meets the requirements of the study. A purposive sampling technique was used since the study focused on getting data from only the micro-financial institutions which were registered and regulated by the Central Bank of Kenya.

3.3.2.3 Sample Size

A sample is a subgroup of the target population which is selected for the purpose of generating findings about the larger population. The representativeness of a sample size increases with the increase in its size. The larger the sample size, the lower the likely of sampling error in generalizing to the population. Sampling error is the difference between a result based on a sample and that which would have been obtained if the entire population were studied (Diamantopoulos, Schlegelmilch, Sinkovics, Bohlen, 2003). According to Churchill and Iacobucci (2005) sample sizes can either be fixed (when they are determined in advance of the study) or sequential (when more data can be collected if the initially collected data does not answer the research question). This study worked with a fixed sample size. The sample size was 12 Micro-financial institutions which are regulated by the CBK (CBK, 2015).

3.4 Data Collection Methods

There are two main methods of data which can be collected for analysis: Primary and secondary data. Saunders et al. (2009) defined primary data as data collected with a specific purpose in mind, such as for the needs of a particular research project and, the researcher personally collects it. There exists some different ways in which primary data can be collected such as by means of interviews, questionnaires, checklists, observation, documentation review, surveys, focus groups and case studies.
The other method of data collected is the secondary data which refers to the data which has not been gathered expressly for the immediate study at hand but for some other purpose (Struwig & Stead, 2004). Mostly secondary data is collected is data which had been collected for a different use apart from the current study. Secondary data is given in different forms such as annual reports published by business firms as well as non-profit organizations, trade associations, chambers of commerce, government parastatals, and research foundations, abstracting and index services in periodicals, academic journals, books, published statistics by government ministries and departments, syndicated services which provide joint information about specific themes or geographical locations and database services (Diamantopoulos & Schlegelmilch, 2003). This study used secondary data which included total assets, the operating expenses, the operating revenue, the number of loans disbursed, the number of clients, the number of branches and the amount of deposit.

3.5 Research Procedure

The researcher planned the field activities in a systematic manner to ensure that the process of data collection was thorough and exhaustive. The researcher prepared a secondary data collection sheet before collecting the data to guide the process of collection. The data was collected from the central Bank of Kenya bank supervision reports since 2013. This was done by downloading the reports from Central Bank of Kenya’s website. The researcher then mined the information on the total assets, deposits, personnel costs, administrative expenses, number of clients served, types of clients served, loan given, number of branches as well as the operating revenue for each of the MFI of interest for analysis.

3.6 Data Analysis Method

According to Cooper and Schindler (2008:93), data analysis is the process where collected data is reduced to a more controllable and convenient size, and where the researcher can start to identify trends or patterns, apply statistical techniques and summarise the data. Beri (2007) indicates that, data analysis consist of both qualitative and quantitative techniques. Birks (2006:10), on the other hand, describe data analysis as the editing, coding, transcription and verification of data. He further confirmed that the same data analysis techniques are used for both qualitative and quantitative techniques, as well as for both primary and secondary data.
In this study, the secondary collected from the banks supervision reports was transformed into a STATA format before being exported from excel to STATA 13. The data was analyzed using three methods: descriptive statistics, inferential and Data Envelopment Analysis (DEA). Descriptive statistics used included mean, standard deviation and skewness to describe the financial figures of the MFIs for a period of 3 years. According to Cooper and Schindler (2006) descriptive analysis is the transformation of mass of data collected and expressing it through the use of charts, tables, percentages and frequencies.

The researcher employed Data Envelopment Analysis (DEA) to calculate the efficiency of the MFIs. DEA measures the relative efficiencies of organizations with multiple inputs and multiple outputs. The organizations are called the decision-making units, or DMUs. The efficiency score of a DMU is the value where the output is maximized given the inputs. The inputs in this study were total assets and operational expenses and the outputs were the operating revenue and the amount of loans disbursed. The inputs and the outputs of are shown in table 3.1

**Table 3:1 Inputs and outputs of the MFIS**

<table>
<thead>
<tr>
<th>Inputs (x_i)</th>
<th>Output (y_r)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total assets</td>
<td>Loans disbursed</td>
</tr>
<tr>
<td>Operational expenses</td>
<td>Operating revenue</td>
</tr>
</tbody>
</table>

In a normal production process, the inputs are converted into outputs. Thus the use of DEA test produces the corresponding efficiency scores of the various DMUs (MFIs). The hypothesized input-output model was as shown in figure 3.1.

**Figure 3:1 Input–output model**
The above relationship is represented mathematically. Where the efficiency scores ($\theta$) for a group of DMUs ($j = 1 \ldots l$) are computed for the selected outputs ($y_{rj}, r= 1 \ldots m$) and inputs ($x_{ij}, i = 1,\ldots, n$). This is illustrated using an arithmetic notation shown:

Maximize $\theta_0 = \frac{\sum_{r=1}^{m} w_r y_{ro}}{\sum_{i=1}^{n} p_i x_{io}}$

Subject to $\frac{\sum_{r=1}^{m} w_r y_{rj}}{\sum_{i=1}^{n} p_i x_{ij}} \leq 1$

$W_r, p_i \geq 1$ for all values of $r$ and $i$.

Where “$w$” and “$p$” are the weights of the outputs and inputs respectively and “$o$” denotes a particular DMU (MFI). The weights used for each DMU are those that maximize a particular DMU’s efficiency score. Once the efficiency scores were established, a correlation test was done to establish the relationship between the efficiency score of MFIs with deposit mobilization, branch network and outreach levels. The results were then presented clearly to improve legibility and understandability of the results to the readers in tables and graphs.

3.7 Chapter Summary

This chapter has presented the research related activities to be undertaken to arrive at the conclusion. The study used causal research design to determine the effect of expansionary strategies on the operational efficiency of the DTMFIs in Kenya. The target population was the registered MFIs by the AMFI whose operations were licensed and supervised by CBK. The study used secondary data for a period between 2013-2015. The data was analyzed through descriptive and inferential statistics. Chapter four focuses on presenting the results and findings of the study.
CHAPTER FOUR

4.0 RESULTS AND INTERPRETATION

4.1 Introduction

This chapter implements the research analysis procedures outlined in chapter three. The chapter presents the tests, results and interpretation of the findings. It covers the introduction section which connects the previous chapter with the chapter and outlines the format of chapter four, background information which highlights some general information of DTMFIs and lastly results on the objectives of the study. The study uses correlation, regression and independent T-test to study the relationship between some expansionary strategies of the DTMFIs and their efficiency levels.

4.2 Background Information

This section discusses the background information of the DTMFI whose data was used in this study. It is useful in highlighting more information on the operations and performances of DTMFIs.

4.2.1 Total Cost of the DTMFIs (2013-2015)

Table 4.1 shows the trends in total cost over the year 2013 to 2015. The total cost in this study was a function of administrative costs and the personnel costs. From the findings, the costs of all the DTMFIs escalated over the period. The personnel costs increased too over the period for all the DTMFIs except m9 which recorded a decline in personnel cost of 33% from Kshs 15M to Kshs 10M. All the administrative costs increased for the MFIs over the same period with some recording as high as 233% increase in the administrative costs. The total costs also went up for all the DTMFIs to as high as 243% and others as low as 11% increase in total costs from 2013 to 2015.

The ratio of the total revenue to total cost was computed for the years 2013 and 2015. The higher the ratio the higher the revenue generated per unit cost. A value of less than 1.0 indicates a loss while more than 1.0 represents a profit. From the results, in 2013 four DTMFIs made losses (ratio of total revenue to total cost was less than 1.0) while in 2015
only two institutions made losses. A reduction of the ratio from 2013 to 2015 indicates that the DTMFI was not operating optimally. From the results, seven (7) MFIs had less ratio of total revenue to cost in 2015 compared to 2013. This shows that those MFIs performed inefficiently in 2015 than in 2013.

Table 4.1 Total cost and Total revenue

<table>
<thead>
<tr>
<th>MFI</th>
<th>Personnel cost (Kshs Mn)</th>
<th>Administrative cost (Kshs Mn)</th>
<th>Total cost (Kshs Mn)</th>
<th>Total Revenue</th>
<th>Ratio of cost to revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>m1</td>
<td>2,205</td>
<td>2,760</td>
<td>25%</td>
<td>2,296</td>
<td>3,346</td>
</tr>
<tr>
<td>m2</td>
<td>614</td>
<td>1,060</td>
<td>73%</td>
<td>1,293</td>
<td>2,848</td>
</tr>
<tr>
<td>m3</td>
<td>238</td>
<td>407</td>
<td>71%</td>
<td>288</td>
<td>822</td>
</tr>
<tr>
<td>m4</td>
<td>169</td>
<td>237</td>
<td>40%</td>
<td>289</td>
<td>349</td>
</tr>
<tr>
<td>m5</td>
<td>22</td>
<td>41</td>
<td>86%</td>
<td>32</td>
<td>56</td>
</tr>
<tr>
<td>m6</td>
<td>15</td>
<td>21</td>
<td>40%</td>
<td>66</td>
<td>80</td>
</tr>
<tr>
<td>m7</td>
<td>22</td>
<td>33</td>
<td>50%</td>
<td>30</td>
<td>68</td>
</tr>
<tr>
<td>m8</td>
<td>5</td>
<td>18</td>
<td>260%</td>
<td>9</td>
<td>30</td>
</tr>
<tr>
<td>m9</td>
<td>15</td>
<td>10</td>
<td>-33%</td>
<td>12</td>
<td>20</td>
</tr>
</tbody>
</table>

Note: %Δ represents the percentage change in the cost from 2013 to 2015.

Source: CBK Bank Supervision reports

4.2.2 Total Assets of DTMFIs (2013-2015)

The total assets of an institution can be used to show the net worth of an organization. The changes in the total assets may imply the rate of expansion of an institution. Table 4.2 shows that most of the MFIs registered increase in total assets. This implies that the DTMFIs sampled in this study expanded in terms of net worth over the years. However, the total assets for m4 declined by 30% from Ksh 3.68 billion in 2013 to Kshs 2.59 billion in 2015. This shows that most of the MFIs have grown over the years from 2013 to 2015. This in turn provides a good basis for the study to meet its objectives of analyzing the relationship between expansionary strategies and the efficiency levels.
Table 4. 2 Total Assets (Kshs Mn)

<table>
<thead>
<tr>
<th>DTMFIs</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>Percentage change</th>
</tr>
</thead>
<tbody>
<tr>
<td>m1</td>
<td>21752</td>
<td>26985</td>
<td>31861</td>
<td>46%</td>
</tr>
<tr>
<td>m2</td>
<td>12434</td>
<td>20320</td>
<td>25324</td>
<td>104%</td>
</tr>
<tr>
<td>m3</td>
<td>2490</td>
<td>2378</td>
<td>7729</td>
<td>210%</td>
</tr>
<tr>
<td>m4</td>
<td>3679</td>
<td>5975</td>
<td>2592</td>
<td>-30%</td>
</tr>
<tr>
<td>m5</td>
<td>337</td>
<td>395</td>
<td>397</td>
<td>18%</td>
</tr>
<tr>
<td>m6</td>
<td>307</td>
<td>390</td>
<td>608</td>
<td>98%</td>
</tr>
<tr>
<td>m7</td>
<td>164</td>
<td>231</td>
<td>197</td>
<td>20%</td>
</tr>
<tr>
<td>m8</td>
<td>80</td>
<td>137</td>
<td>226</td>
<td>183%</td>
</tr>
<tr>
<td>m9</td>
<td>107</td>
<td>160</td>
<td>184</td>
<td>72%</td>
</tr>
</tbody>
</table>

4.2.3 Customer Deposits of DTMFIs (2013-2015)

The amount of deposits MFI has reflects the interest and the attractiveness of such an MFI in the market. Increase in deposits could be attributed to deposit mobilization efforts by the institution which go along to convince customers to deposit more or acquisition of more customers. The availability of deposits creates money for the MFIs to run its operations and even money to give out to other customers as loans. The amount of deposits therefore can be used as a measure of performance of an MFI. A financial institution would be termed perceived as doing well if the amount of deposits keeps on increasing otherwise it reflects lack of customer trust with the organization. Table 4.3 shows that almost all the MFIs recorded positive growth in the amount of deposits over the period. The highest growth of customer deposits was realized by m4 of 192% from Kshs 1.42Billion in 2013 to Kshs 4.14 billion in 2015. The least changes realized was negative for m5 which was -14%. This implies that the customer deposits declined by 14% from 2013 to 2015. It can be seen that the amount of customer deposits increased over the years from 2013 to 2015 in most of the MFIs. This implies that either the institutions got more customers or their deposit mobilization efforts were successful.
Table 4. 3 Customer Deposits

<table>
<thead>
<tr>
<th>DTMFI</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>Percentage Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>m1</td>
<td>12,954</td>
<td>17,076</td>
<td>17,918</td>
<td>38%</td>
</tr>
<tr>
<td>m2</td>
<td>8,684</td>
<td>13,987</td>
<td>16,270</td>
<td>87%</td>
</tr>
<tr>
<td>m3</td>
<td>1,274</td>
<td>977</td>
<td>1,285</td>
<td>1%</td>
</tr>
<tr>
<td>m4</td>
<td>1,419</td>
<td>2,847</td>
<td>4,144</td>
<td>192%</td>
</tr>
<tr>
<td>m5</td>
<td>183</td>
<td>175</td>
<td>158</td>
<td>-14%</td>
</tr>
<tr>
<td>m6</td>
<td>99</td>
<td>128</td>
<td>135</td>
<td>36%</td>
</tr>
<tr>
<td>m7</td>
<td>66</td>
<td>135</td>
<td>105</td>
<td>59%</td>
</tr>
<tr>
<td>m8</td>
<td>34</td>
<td>52</td>
<td>57</td>
<td>68%</td>
</tr>
<tr>
<td>m9</td>
<td>32</td>
<td>64</td>
<td>41</td>
<td>28%</td>
</tr>
</tbody>
</table>

4.2.4 Profit before Tax of DTMFI (2013-2015)

The researcher collected data on the profit before tax for the DTMFIIs. This was used as a measure of performance of the institutions over the 3 years. Table 4.4 shows that some of the DTMFIIs recorded lower performances in 2015 compared to 2013 which can be attributed to the intense rivalry in the financial sector or inefficiencies in operations of the MFIs. The study shows that five (5) of the MFIs performed poorly in 2015 than in 2013. This shows that despite the growth in the most of the MFIs in terms of assets and customer deposits, the MDFIs poorly in 2015 than in 2013. This motivates and creates more need for the researcher to evaluate the relationship between expansionary strategies and efficiency of the MFIs.

Table 4. 4 Profit before tax (Kshs Millions)

<table>
<thead>
<tr>
<th>DTMFI</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>Percentage Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>m1</td>
<td>1,312</td>
<td>1,140</td>
<td>1,257</td>
<td>-4%</td>
</tr>
<tr>
<td>m2</td>
<td>455</td>
<td>748</td>
<td>447</td>
<td>-2%</td>
</tr>
<tr>
<td>m3</td>
<td>92</td>
<td>-76</td>
<td>33</td>
<td>-64%</td>
</tr>
<tr>
<td>m4</td>
<td>97</td>
<td>112</td>
<td>161</td>
<td>66%</td>
</tr>
<tr>
<td>m5</td>
<td>-8</td>
<td>3</td>
<td>-21</td>
<td>-163%</td>
</tr>
<tr>
<td>m6</td>
<td>-1</td>
<td>12</td>
<td>34</td>
<td>3500%</td>
</tr>
<tr>
<td>m7</td>
<td>-38</td>
<td>-39</td>
<td>-58</td>
<td>-53%</td>
</tr>
<tr>
<td>m8</td>
<td>2</td>
<td>3</td>
<td>11</td>
<td>450%</td>
</tr>
<tr>
<td>m9</td>
<td>-3</td>
<td>2</td>
<td>2</td>
<td>167%</td>
</tr>
</tbody>
</table>
4.2.5 Efficiency of DTMFIs (2013-2015)

Efficiency was determined through use of DEA. The inputs of the study included the operational costs (personnel and administrative costs) and total assets while the output included the total revenue and the loans disbursed. The study results shows that four (4) of the DTMFIs were performing optimally relative to the rest with efficiency of 100%. The rest of the DTMFIs were below 100% meaning they were not operating efficiently. However, the efficiency levels of the DTMFIs sampled were more than 70% for each institution.

From the results, the inefficient MFIs are supposed to cut down their inputs in terms of personnel costs, administrative costs and total assets. For example MFI (m3) should cut down its inputs by 11.27% to reach an optimal level of operation. The results show that it has excess of 100 units of total assets and 914.047 units of loans it has disbursed. Thus it should reduce the total assets and reduce the amount it gives out as loans by 914.047 units after reducing the inputs by 11.27%.

The efficiency score shows that most of the MFIs were incurring unnecessary high cost of personnel and administrative related activities. Also the total assets were in excess in some of the MFIs showing that some were redundant. The results also show that some of the MFIs gave out more loans that they could optimally cater for which constraints such institutions from operating efficiently and optimally.

Table 4.5 Efficiency

<table>
<thead>
<tr>
<th>rank</th>
<th>Theta</th>
<th>Admin costs</th>
<th>Personnel cost</th>
<th>Total Assets</th>
<th>Total Revenue</th>
<th>Loans</th>
</tr>
</thead>
<tbody>
<tr>
<td>dmu:1</td>
<td>1</td>
<td>1 .</td>
<td>0</td>
<td>0</td>
<td></td>
<td>.</td>
</tr>
<tr>
<td>dmu:2</td>
<td>1</td>
<td>1 .</td>
<td>0</td>
<td>0</td>
<td></td>
<td>.</td>
</tr>
<tr>
<td>dmu:3</td>
<td>7</td>
<td>0.887303 .</td>
<td>100.003</td>
<td>914.047</td>
<td></td>
<td>.</td>
</tr>
<tr>
<td>dmu:4</td>
<td>1</td>
<td>1 .</td>
<td>0</td>
<td>0</td>
<td></td>
<td>.</td>
</tr>
<tr>
<td>dmu:5</td>
<td>8</td>
<td>0.809977 .</td>
<td>2.58022</td>
<td>2.0536</td>
<td>4.40E-06</td>
<td>.</td>
</tr>
<tr>
<td>dmu:6</td>
<td>1</td>
<td>1 .</td>
<td>0</td>
<td>0</td>
<td></td>
<td>.</td>
</tr>
<tr>
<td>dmu:7</td>
<td>9</td>
<td>0.706242 .</td>
<td>19.9457</td>
<td>7.89962</td>
<td></td>
<td>.</td>
</tr>
<tr>
<td>dmu:8</td>
<td>6</td>
<td>0.898462 .</td>
<td>5.91658</td>
<td>1.35665</td>
<td></td>
<td>.</td>
</tr>
<tr>
<td>dmu:9</td>
<td>5</td>
<td>0.936783 .</td>
<td>0.684586</td>
<td>24.7125</td>
<td></td>
<td>.</td>
</tr>
</tbody>
</table>
4.3 Relationship between Deposit Mobilization and Efficiency of DTMFIs

This section has results on the relationship between deposit mobilization and efficiency of the DTMFIs. The study used the amount of customer deposits as a proxy of deposit mobilization.

4.3.1 Descriptive Statistics of Deposit Mobilization and Efficiency of DTMFIs

The efficiency of the DTMFIs were averaged and categorized into groups based on the size of the deposits. This was done to determine whether there existed any differences among the different DTMFIs with respect to the level of deposits.

Table 4.6 Descriptive Statistics of Deposit Mobilization and Efficiency of DTMFIs

<table>
<thead>
<tr>
<th>Category</th>
<th>Average Efficiency</th>
<th>Std. Err.</th>
<th>[95% Conf.Interval]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 100m (small)</td>
<td>0.970332</td>
<td>0.029669</td>
<td>0.901916</td>
</tr>
<tr>
<td>100m- 1billion (medium)</td>
<td>0.906132</td>
<td>0.057085</td>
<td>0.774493 1.03777</td>
</tr>
<tr>
<td>More than 1 billion (Large)</td>
<td>0.920183</td>
<td>0.047885</td>
<td>0.80976 1.030605</td>
</tr>
</tbody>
</table>

The results shown in table 4.6 shows very narrow differences on the efficiency of the DTMFIs. From the results, the MFIs whose average customer deposits were less than Kshs 100m had an efficiency of 0.97, those with customer deposits between Kshs 100m and Kshs 1 billion had a 0.91 and lastly those with more than Kshs 1 billion had an efficiency of 0.92. This shows that all the categories of the DTMFIs had almost the same level of efficiency regardless of the amount of deposits.

A deeper review of the efficiency scores showed that 67% of the DTMFIs which had accumulated deposits between Ksh 100 million and Ksh 1 billion had inefficiencies in administrative costs. Since the DEA analysis was input oriented, it means that the MFIs had excess and unnecessary costs incurred in administration. Also 50% of the MFIs whose deposits were less than Ksh 100 million and 67% of the MFIs whose deposits were between Ksh 100 million and Kshs 1 billion had higher personnel costs than optimal. The study noted that all the MFIs had excess assets, implying that some had excess equipment which were redundant prompting the need to reassess the usefulness of the assets such as vehicles, buildings, furniture and computers among others which could be gotten rid off. In terms of
the total revenue, all the MFIs made positive revenues; however, the results showed that no MFI had made more than expected revenue. A review of the loan amount issued indicated that all the MFIs which had small amount of deposits (less than 100M) gave more loans than they could comfortably manage. Also approximately 25% of MFIs which had large customer deposits (more than 1 billion) gave more than optimal amounts of loans.

Table 4.7 Inefficiencies (excess) among the groups of DTMFIS on Deposit Mobilization

<table>
<thead>
<tr>
<th></th>
<th>Admin cost</th>
<th>Personnel Cost</th>
<th>Total Assets</th>
<th>Revenue</th>
<th>Loans</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 100M</td>
<td>0%</td>
<td>50%</td>
<td>50%</td>
<td>0%</td>
<td>100%</td>
</tr>
<tr>
<td>100M-1Billion</td>
<td>67%</td>
<td>67%</td>
<td>33%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Over 1Billion</td>
<td>0%</td>
<td>0%</td>
<td>25%</td>
<td>0%</td>
<td>25%</td>
</tr>
</tbody>
</table>

4.3.2 Relationship between Customer Deposits and Operational Costs

A Pearson correlation test was done to determine the relationship between customer deposits, total revenue and operational costs. The operational costs were divided into administrative and personnel costs to help further understand on the components of costs.

Table 4.8 Correlation test- Customer Deposits and Operational Costs

<table>
<thead>
<tr>
<th></th>
<th>Deposits</th>
<th>Total Revenue</th>
<th>Administration costs</th>
<th>Personnel cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deposit</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total revenue</td>
<td>0.9726**</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Administration costs</td>
<td>0.9926**</td>
<td>0.9873**</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Personnel cost</td>
<td>0.9254**</td>
<td>0.9871**</td>
<td>0.9497**</td>
<td>1</td>
</tr>
</tbody>
</table>

** Represents statistical significance at 0.05.

According to table 4.8, customer deposits had a significant strong positive correlation with total revenue (0.9726), administrative costs (0.9926) and personnel costs (0.9254). Although increase in customer deposits was significantly correlated with total revenue (0.9726). This shows that although deposit mobilization was associated with more revenue, it was associated with an increase in both personnel and administrative costs. This implies that deposit mobilization among the DTMFIs was both costly but generated more revenue.
However, it was not possible to determine whether the costs incurred were more or less than the associated revenue generated. A simple linear regression was done to establish the actual effect of deposit mobilization proxied by amount of deposits on the efficiency of the DTMFIs.

### 4.3.3 Regression Test on Effect of Customer Deposits on Efficiency of DTMFIs

A simple linear regression test was done to establish the effect of changes in deposit amounts on the efficiency of the DTMFIs.

**Table 4.9 Regression Test – Effect of Customer Deposits on Efficiency of DTMFIs**

| Efficiency          | Coef.  | Std. Err. | t     | P>|t| | [95% Conf. Interval] |
|---------------------|--------|-----------|-------|-----|----------------------|
| Customer Deposits   | 8.49E-06 | 3.21E-06  | 2.64  | 0.033 | 8.98E-07 - 1.61E-05  |
| _cons               | 0.88387 | 0.042581  | 20.76 | 0    | 0.783183 - 0.984558  |

Table 4.9 shows that increasing the amount of deposits by 1% would increase the efficiency of DTMFIs by 0.0000849%. This means that deposit mobilization would lead to an increase in efficiency of the DTMFIs. This could be realized especially where the deposits increased through efforts by the institutions to convince their customers to save more as opposed to getting more customers. This shows that MFIs which endeavor to convince more customers to deposit big amounts of money in their accounts led to improvement in their efficiencies.

### 4.4 Relationship between Branch Network and Efficiency of DTMFIs

This section covers the findings on the relationship between branching strategy and efficiency in DTMFIs. This is determined using several tests as shown in the following sub-sections.

#### 4.4.1 Descriptive Statistics on Branch Network and Efficiency of DTMFIs

This sub-section has descriptive statistics on branching and efficiency of the DTMFIs. This has been done through mean, standard deviation and skewness. The results are shown in Table 4.10.
Table 4.10 Descriptive Statistics-Branching and Efficiency of DTMFIs

<table>
<thead>
<tr>
<th>Branch Type</th>
<th>Average efficiency</th>
<th>SD</th>
<th>Skewness</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-2 Branches</td>
<td>0.847162</td>
<td>0.123536</td>
<td>-0.63133</td>
</tr>
<tr>
<td>3-10 Branches</td>
<td>0.899093</td>
<td>0.095559</td>
<td>0.223219</td>
</tr>
<tr>
<td>More than 10 branches</td>
<td>1.00000</td>
<td>0.0000</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

Table 4.10 shows that DTMFIs which had 1-2 branches had an average efficiency of 84.7% while those which had 3-10 branches had average efficiency of 89.9%. Those DTMFIs which had more than 10 branches had on average an efficiency level of 100%. The values of standard deviation were less than 1.0 showing less variability across all the groups of DTMFIs. The value of skewness shows that efficiency of DTMFIs was negatively skewed meaning that most of the DTMFIs had higher efficiency scores. The skewness for the DTMFIs with 3-10 branches was positive implying that most of the institutions had slightly low efficiency scores than 89.9% while those which had more than 10 branches had 0.0 skewness showing that the distribution of their efficiency scores was normally distributed. The results show that efficiency scores increased from 84.7% to 89.9% to 99.9% for the 3 groups. It further shows that, the MFIs which more than 10 branches had higher efficiency scores than those with less branches.

To further understand the relationship between branching and the efficiency of DTMFIs, the researcher did a cross tabulation of the inefficiencies of different DTMFIs with various branches as shown in table 4.11.

Table 4.11 Cross tabulation between Number of Branches and Inefficiencies in Inputs and Outputs

<table>
<thead>
<tr>
<th>Branch Type</th>
<th>Admin costs</th>
<th>Personnel costs</th>
<th>Total Assets</th>
<th>Total Revenue</th>
<th>Loans</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-2 Branches</td>
<td>33%</td>
<td>67%</td>
<td>33%</td>
<td>0%</td>
<td>67%</td>
</tr>
<tr>
<td>3-10 Branches</td>
<td>33%</td>
<td>33%</td>
<td>67%</td>
<td>0%</td>
<td>33%</td>
</tr>
<tr>
<td>Over 10 Branches</td>
<td>0%</td>
<td>0%</td>
<td>33%</td>
<td>0%</td>
<td>33%</td>
</tr>
</tbody>
</table>

Table 4.11 shows that 33% of the institutions with 1-2 branches and 3-10 branches were inefficient in administrative activities leading to excess cost. On personnel costs, majority of the DTMFIs with 1-10 branches incurred excess personnel costs while only 33% of the MFIs
with 3-10 branches had excess personnel costs. The results imply that all the DTMFIs which had more than 10 branches had no excess administrative and personnel costs. Thus they had efficiently allocated their costs of operations compared to those which had less branches. When the researcher, considered the total assets, all the institutions were found to have more than optimal amount of assets. When the outputs were considered, it was found that none of the MFIs produced excess revenue. On total loans, it was found that all the institutions gave more loans than they could comfortably manage although majority was those MFIs with 1-2 branches.

4.4.2 Relationship between Branches and Operational Costs and Revenue (Correlation)

This sub-section presents a correlation between branches of a DTMFI and the operational costs. Total revenue is also included to establish more about the relationship with the number of branches. The results are shown in table 4.12.

**Table 4. 12 Correlation between Branches and Operational Costs and Revenue (Correlation)**

<table>
<thead>
<tr>
<th></th>
<th>Branches</th>
<th>Personnel cost</th>
<th>Administrative cost</th>
<th>Total Revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Branches</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personnel cost</td>
<td>0.8073</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Administrative cost</td>
<td>0.9354</td>
<td>0.9497</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Total Revenue</td>
<td>0.8829</td>
<td>0.9871</td>
<td>0.9873</td>
<td>1</td>
</tr>
</tbody>
</table>

From the results, the operational costs and the number of branches of the MFIs were found to have a positive correlation. The results shows that number of branches had a significant positive correlation with personnel costs (r=0.8073) and administrative costs (r=0.9354). This shows that as the number of branches of a DTMFIs increased, the personnel costs and the administrative costs kept increasing too. The total revenue and the number of branches had a significant positive correlation (r=0.8829). This shows that increase in branches was associated with increase in revenues of the DTMFIs.
4.4.3 Regression Test- Effect of Branching on Efficiency of the DTMFIs

To determine the actual effect of branching or creating branch networks on the efficiency of the DTMFIs, a simple regression was done. The results are shown in table 4.13.

Table 4. 13 Effect of Branching on Efficiency of the DTMFIS

<table>
<thead>
<tr>
<th>Efficiency</th>
<th>Coef.</th>
<th>Std. Err.</th>
<th>t</th>
<th>P&gt;t</th>
<th>[95% Conf.Interval]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Branches</td>
<td>0.004804</td>
<td>0.00179</td>
<td>2.68</td>
<td>0.031</td>
<td>0.000571, 0.009037</td>
</tr>
<tr>
<td>_cons</td>
<td>0.862041</td>
<td>0.047472</td>
<td>18.16</td>
<td>0</td>
<td>0.749788, 0.974295</td>
</tr>
</tbody>
</table>

The regression results in table 4.13 shows that branching has a significant (p<0.05) effect on the efficiency of the DTMFIs. From the results, a DTMFI would be 0.86 efficient without branches. However, an increase of one branch holding other things constant, increases the efficiency of the DTMFIs by 0.004804 units. This tallies with the descriptive findings where the higher the number of branches the more the efficiency of the DTMFIs.

4.5 Relationship between Customer Outreach and Efficiency of DTMFIs

This sub-section presents findings on the relationship between customer outreach and efficiency of the DTMFIs. Several tests have been done as shown in the following tables and interpretations.

4.5.1 Descriptive Statistics- Customer Outreach and Efficiency of DTMIs

This part discusses the descriptive results on the efficiency of the DTMFIs based on their levels of outreach. The study used average savings as a measure of outreach and the results are as shown in table 4.14.

Table 4. 14 Descriptive Statistics-Customer Outreach and Efficiency of DTMIs

<table>
<thead>
<tr>
<th>Average efficiency</th>
<th>SD</th>
<th>Skewness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 10,000</td>
<td>0.892883</td>
<td>0.007891</td>
</tr>
<tr>
<td>10,000- 20,000</td>
<td>0.881008</td>
<td>0.154617</td>
</tr>
<tr>
<td>More than 20,000</td>
<td>0.9525</td>
<td>0.0950</td>
</tr>
</tbody>
</table>
From the results in table 4.14, the efficiency scores for the DTMFIs whose average savings were less than Ksh 10,000 and those whose average savings were between Ksh 10,000 and 20,000 were almost the same. However, the average efficiency scores for the DTMFIs whose savings were more than 20,000 was slightly higher. The value of the standard deviations shows that that the results were very close to the mean although they were negatively skewed. The results, implies that the higher the average savings, the higher the efficiency of the institutions.

To understand deeper the efficiency of the DTMFIs and the connection with savings, the data was further divided into components of inputs and outputs as shown in table 4.15.

**Table 4.15 Inefficiencies Grouped on the Basis of the Average Savings**

<table>
<thead>
<tr>
<th></th>
<th>Admin costs</th>
<th>Personnel costs</th>
<th>Total Assets</th>
<th>Total Revenue</th>
<th>Loans</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 10,000</td>
<td>33%</td>
<td>67%</td>
<td>0%</td>
<td>0%</td>
<td>33%</td>
</tr>
<tr>
<td>10,000- 20,000</td>
<td>25%</td>
<td>25%</td>
<td>25%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>More than 20,000</td>
<td>0%</td>
<td>0%</td>
<td>100%</td>
<td>0%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 4.15 shows that DTMFIs whose average savings were less than Ksh 20,000 had excess costs in administration activities, while those which had average savings of more than Ksh 20,000 were efficient on administration costs. Similarly, on personnel costs, DTMFIs with less than Ksh 20,000 incurred more than optimal costs on personnel compared to those whose savings were more as they did not incur any extra or unnecessary costs. On assets, MFIs which had average savings of more than Ksh 10,000 had more than optimal assets compared to those with very low average savings. Considering the outputs, all the MFIs whose average savings were less than Ksh 10,000 and those with average savings of more than Ksh 20,000 had given out more than optimal amount of loans.
4.5.2 Correlation- between Savings and Costs of Operation

A correlation test was done to establish how the cost varied with the changes in average savings. The results are shown in table 4.16.

<table>
<thead>
<tr>
<th>Table 4. 16 Correlation between Savings and Costs of Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average savings</td>
</tr>
<tr>
<td>Average savings</td>
</tr>
<tr>
<td>Personnel cost</td>
</tr>
<tr>
<td>Administrative cost</td>
</tr>
<tr>
<td>Total Revenue</td>
</tr>
</tbody>
</table>

Table 4.16 shows that average savings had negative correlation with personnel costs (r=0.1655), administrative costs (r=-0.1394) and with total revenue (r= -0.1471). This indicates that as the average savings decreased, the personnel and administration costs increased. The total revenue had a negative correlation since savings are liabilities to an institutions and the more the liabilities the riskier the business since they increase the cost of the business.

4.5.3 Regression Test –Effect t of Savings on the Efficiency of the DTMFIS

This sub-section has results of a regression test on the effect of the savings on the efficiency of the DTMFIS.

<table>
<thead>
<tr>
<th>Table 4. 17 Effect of Savings on the Efficiency of the DTMFIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Efficiency</td>
</tr>
<tr>
<td>Average savings</td>
</tr>
<tr>
<td>_cons</td>
</tr>
</tbody>
</table>

Table 4.17 shows that savings significantly (p<0.05) influence the efficiency of the DTMFIs. The results shows that increase in savings by a unit holding other factors constant would increase the efficiency by 0.000017 units. This demonstrates that savings influence the efficiency of the DTMFIS.
4.6 Chapter Summary

This chapter presented results of the data analysis and brief interpretation of the findings. The results show that most of the DTMFIs by the year 2015 were operating inefficiently. The study further found that deposit mobilization, branching and customer outreach influenced the efficiency of the DTMFIs. Various inefficiencies noted included high than optimal costs of operations and giving loans above the limit for such institutions. Chapter five presents the discussion, conclusions and recommendations of the findings.
CHAPTER FIVE

5.0 DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS OF THE STUDY

5.1 Introduction

This chapter is a continuation of chapter four on data analysis and interpretation. The chapter marks the end of the project. It covers a summary of the study, a discussion of the findings, conclusion and recommendations of the study. The discussions were done with a review of the previous studies and literature before conclusions were made. All the conclusions and recommendations were informed by the findings of the study. The recommendations section is split into two: recommendations for practice and recommendations for further areas of research.

5.2 Summary of the Findings

This study sought to determine the efficiency of the DTMFIs. Efficiency of operations among the financial institutions is an important source of competitive advantage. The study found that out of the nine DTMFIs whose data was used in this study, 5 of the DTMFIS were operating inefficiently. The study found that they had excess costs of administration, personnel and assets. Some of the institutions gave out more loans creating instability in their liquidity positions.

From the findings, increase in deposits, number of branches positively influenced the efficiency of the DTMFIs. However, the study found that efforts to increase the levels of deposits and to open new branches were associated with increase in administration and personnel costs. Thus deposit mobilization and branching strategies were supposed to be done carefully to prevent incurring unnecessary costs and inefficiencies. On the influence of the outreach, the study found that outreach to the poor was negatively correlated with the efficiency of the DTMFIS. This was because serving many low income clients was costly to the DTMFIs compared to serving big clients.

For the DTMFIs to remain in the market and create competitive advantage, it was suggested that they engage in careful deposit mobilization and branching strategies. The study found
that outreach leads to a decline in efficiency. DTMFIs should thus be careful not to compromise on efficiency while pursuing outreach.

5.3 Discussion of the Findings

This section provides the discussion of the findings in chapter four. The results of the study were interrogated against previous studies and views of various scholars. The discussion is arranged as per the objectives of the study.

5.3.1 Relationship between Deposit Mobilization and Efficiency of DTMFIs

Deposit mobilization is a scheme intended to encourage customers to deposit more cash with the financial institutions that in turn use the money to disburse more loans and generate additional revenue (Kazi, 2012). Same views were shared by Hirschland (2008) who argued that deposits provided stable, low cost means to finance activities which dramatically increased institutions client base as well as improving borrowers’ capability to repay. Thus deposit mobilization is specifically efforts aimed at convincing customers to increase their levels of deposits in a financial institution. This objective sought to determine whether deposit mobilization measured by the level of deposits influenced the efficiency of the DTMFIs.

According to the findings, the average efficiency of the different groups of the MFIs based on the level of customer deposits was approximately the same for all the groups of MFIs. However, a deeper analysis of the inefficiencies in terms of the inputs and outputs revealed informing results. Majority of the DTMFIs (67%) whose customer deposits were between the range of Ksh 100M and Ksh 1Billion had inefficiencies related to their administrative costs. These findings resonate with the views of Dauner (2004) who observed that when clients saved frequently in small amounts, it was probable for such institutions to incur high administration costs. His views are confirmed by this study where the DTMFIs which had low amounts of deposits had incurred excess costs on administration compared to those which had more deposits.

Similarly, when the personnel costs were examined, all the DTMFIs which had less than Ksh 1Billion deposits had incurred excess personnel costs. This shows that the level of costs of
the employees was high compared to DTMFIs which had high levels of deposits. Thus DTMFIs which had less amounts of deposits had inefficiencies related to the administration and employee management. According to Muriu (2011) MFIs with a proportionally larger deposit base would typically lead to an overall lower cost of funds for the MFIs with an implication of improved profitability because the deposits program was cost efficient. Therefore, there is need for the DTMFIs to increase their levels of deposits through deposit mobilization so as to reduce the cost of operations and increase efficiency of their administrative and personnel activities.

Further, the study found that all groups of DTMFIs had excess assets. This implies that some current and fixed assets were not necessary yet the institutions kept them. A close examination to the total revenue showed that no particular group of the MFIs had excess revenue. This means that no MFI made more than revenue relative to others or better than others.

The results on the loans disbursed shows that all MFIs with less than Ksh 100M deposits gave out more loans than their optimal levels. Also some few MFIs with more than Ksh 1Billion gave out more loans than their optimal levels. Giving out more than optimal amount of loans overstretches the institutions ability to comfortably meet its financial needs as well as exposing the institutions into financial crisis.

The correlation test shows a strong positive correlation ($r=0.9726$) between the amount of customer deposits and the total revenue. This implies that as the level of customer deposits increased, the amount of revenue gained went up. This can be attributed to the fact more deposits to the financial institutions created a big pool of resources which could be used to generate more revenue for the MFIs. The correlation between amount of deposits and the operational costs (administrative and personnel costs) was strong and positive. Thus although the increase in customer deposits was associated with an increase in the amount of revenue, the costs of operational also went up. These costs are associated with the extra people employed to mobilize for more deposits and the expansion of existing infrastructures to accommodate more amount of money. This could in terms of cash tills, increased number of security features, increased fees for the insurance among others. This shows that as MFIs
pursue deposit expansion strategies, challenges on efficiency come up and it is up for the management to ensure they operate efficiently as they expand the amount of their deposits. This is because MFIs wasted resources in terms of inputs such as staff resources, equipment and facilities and administration costs and did not produce enough outputs such as making loan, raising funds, and obtaining more borrowers per staff (Hassan, Sanchez and Ngene, 2012).

Lastly, a regression test done showed that customer deposits had a significant linear influence on the efficiency of the DTMFIs. Thus a DTMFIs which invested on increasing the level of activities by widening the customer deposits influenced the extent of efficiency. Therefore, the level of deposits influences the efficiency of the DTMFIs. According to (2012) that mobilization of deposits was one of the important functions of banking business and it affected the ability of such institutions to serve customers effectively. The current study has shown a significant effect of deposits on the efficiency of the MFIs. MFIs can thus compete in the market by increasing their level of efficiencies through deposit mobilization.

5.3.2 Relationship between Branch Network and Efficiency of DTMFIs

The second objective of this study was to determine the influence of branching on the efficiency of the DTMFIs. This is another growth oriented strategy for the MFIs which they can pursue as a way of acquiring market share.

From the descriptive results, some differences were visible regarding the efficiencies of the different DTMFIs. The DTMFIs who had 1-2 branches had average efficiency scores of 84.7%, those with 3-10 branches had average efficiency scores of 89.9% while those which had more than 10 branches had efficiency scores of 100%. This shows that those DTMFIs with less branches had low efficiency scores compared to those which had many branches. Several scholars supported the idea of branching with various reasons: Boyd and Prescott (1986) argued that financial institutions whose operations had been diversified enjoyed cost-efficiencies which in turn promoted their profitability and sustainability.

A more elaborate focus was done on the inefficiencies and the inputs and the outputs. From the findings, institutions which had less than 10 branches had incurred unnecessary cost on
administration cost and personnel costs. This shows that cost related to administration were unnecessary high for the institutions with less branches. The extra costs incurred by the institutions which had less branches shows that there were more people and the work was not much. Thus some of the people were idle and unnecessary consuming the institutions resources. The results show that DTMFIs which had branched extensively were more efficient than those which had not branched. These results resonates with the conclusions of Harimaya and Kando (2012) who found that banks which went beyond their headquarters and branched to others areas recorded high ratio of loans compared to those banks which had not branched.

On the size of the institutions, the study found that all the DTMFIs had excess assets which were idle and yet they were not useful to the institutions. It is thus prudent for the management of such institutions conduct an audit with a view of retaining only the useful assets only. Any unwanted asset such as cars, building and equipment can be sold to ensure that DTMFIs operate at optimal levels. Bassem (2008) expressed operational efficiency in terms of how well MFI allocate input resources (asset, subsidies and personnel) to produce output measured in terms of the loan portfolio. Therefore having more than required assets was inefficient and costly to the DTMFIs.

None of the DTMFIs had made excess or more than expected revenue showing that none performed better than others. However, when the loans were considered, at least there were a DTMFI in each category which had given out more loans than they could efficiently give. This was prevalent mostly among the MFI with 1-2 branches. Although, the main aim of the DTMFIs was to disburse as much loans as possible, the study found that they gave more loans than they could comfortably manage given their size and level of profitability and efficiencies.

A correlation test showed a strong positive relationship between the number of branches a DTMFIs had and the personnel cost (r=0.8073). This means that as the number of branches were increasing the personnel costs also increased. This could be explained by the fact that opening of new branches required new staff members to run the operations of the new branches which increased the general cost of the staff members. Similarly, the number of
branches and the administrative costs were strongly positively correlated ($r=0.9354$). This cost are the new ones associated with the establishment of new offices, such as computers, new managers, new office equipment’s among others. Hensel (2003) also found that small European banks experienced relatively more cost efficiencies compared to large European banks. Therefore, branch expansion was accompanied by its costs. It is thus upon the management to determine the extent to which they can open new branches since excessive branch expansion lowers the cost efficiencies and profit effectiveness (Harimaya and Kando, 2012).

Lastly, the total revenue and the number of branches were also found to have strong positive correlation. This was probably due to the premise that having new branches help to reach many people who deposit and transact with the financial institutions. Such institutions generate revenue from the increased number of transaction from the increased number of customers reached. This was possible when branching was done to certain optimal levels which would lead to both cost and profit efficiencies especially through diversifying the portfolio (Harimaya and Kando, 2012).

Spieler (2004) held that bank branches were highly effective and profitable channels of providing retail services relative to other methods such as internet or call centers. In this study, a regression test done to determine the effect of branching strategy on the efficiency of the DTMFIs showed that increase in the number increased the efficiency of the MFIs. This could be explained by the fact that increasing the number can bright about the right mix and some of the functions can be transferred to where they work best bringing out efficiency of operations. Also having branches helps to decentralize decision making and operational effectiveness which may contribute to efficiency in operations.

5.3.3 Relationship between Customer Outreach and Efficiency of DTMFIs

The third objective of the study was to determine the effect of customer outreach on the efficiency of the DTMFIs. One of the major motives of the MFIs is to reach the underserved segment in the market. However, the underserved in the market is a segment of low income earners whose cost of serving them considerably high. In this study, the extent of outreach
was determined by the average size of the savings of the customers. Then the DTMFIs were grouped into three groups based on the average size of the savings.

The efficiency scores of the DTMFIs whose average savings were less than Ksh 20,000 were less than 90% while those whose savings were more than Ksh 20,000 was more than 95%. This shows that the efficiency scores were high for those DTMFIs whose average level of savings was more than Ksh 20,000. In theory, the lower the value of average saving, the lower higher the extent of outreach, therefore, the results shows that those MFIs whose extent of outreach was low were highly efficient than those MFIs whose outreach was high. This was explained by Lapenu and Zeller (2002) who explained that that transaction costs for smaller clients was higher compared to the larger ones leading to inefficiencies.

A deeper analysis showed some inefficiencies of the MFIs compared across different levels of average savings. From the findings, all the DTMFIs whose average savings were less than Ksh 20,000 had inefficiencies in their administration and employee production activities. The study shows that none of the institutions whose average level of savings was more than Ksh 20,000 had incurred unnecessary administration and personnel costs. This can be explained by the fact that it was expensive to serve low level customers whose operational capacities were limited. As a result, MFIs were now focusing on providing services to big clients whose transaction costs were relatively lower compared to the smaller ones with high costs (Lapenu and Zeller, 2002).

In terms of loans, few MFIs with low level of average savings had given out excess loans than their optimal capacities. However, all the MFIs with more than Ksh 20,000 had given out more loans than they could comfortably manage. This shows that they were inefficient in loan management.

A correlation test showed that average savings was negatively correlated with personnel costs and administrative costs. This means that as the average savings decreased the personnel costs and the administrative costs increased. This could be explained by the facts that decrease in average savings was used to measure the level of customer outreach. A DTMFI is said to have increased her outreach if it reaches many low income earners. Thus increase in outreach is associated with decrease in the average savings. This could be explained by the
fact that, serving low income earners was expensive and inefficient which was not sustainable in the long run. Similar results were found by Heidmann and Nilsholm (2012) who found that a negative correlation between outreach to the poor and efficiency of MFIs.

A regression test on the effect of average savings on the efficiency of the DTMFIs showed that changes in the average savings had significant positive influences on the efficiency of the DTMFIs. This means that increasing the average savings increased the efficiency of the MFIs. Therefore, the more MFIs invested in serving big clients the more the level of efficiency improved. This was attributable to the fact that serving high income clients brought more deposits to the DTMFIs, this created a pool of resources which could be used to generate more revenue and to invest in more effective technologies.

5.4 Conclusions

5.4.1 Relationship between Deposit Mobilization and Efficiency of DTMFIs

The study concludes that deposit expansion strategy positively influences the efficiency of the deposit taking micro financial institutions (DTMFI). This is because deposit mobilization leads to increase in the amount of customer deposits which create a large pool of financial resources which enables MFIs to invest in efficient technologies and train personnel which in turn increases the efficiency of the operations.

The study also notes that increase in customer deposits is associated with increase in total revenue. This increase in revenue and customer deposits is as a result of deposit expansion efforts by the financial institutions. These deposit mobilization efforts however, are accompanied by their respective administrative and personnel costs.

5.4.2 Relationship between Branching and Efficiency of DTMFIs

The study concludes that use of branching strategy is useful and increases the efficiency of the DTMFIs. The use of branching strategy influences the efficiency of the institutions which is a great source of competitive advantage. The pursuit of financial mediation through expansion of the number of branches helps to reach many customers as well increase the
market share. However, this is associated with increase in personnel and administrative costs which the management must take into consideration.

5.4.3 Relationship between Customer Outreach and Efficiency of DTMFIs

The study concludes that pursuit of the micro finance operations through outreach is inversely related to the efficiency of the DTMFIs. Thus outreach decreases the efficiency of the MFIs. This means that as the financial institutions acquire more low income customers the unit cost of a customer increases leading to increase in personnel and administrative costs.

5.5 Recommendations of the Study

5.5.1 Recommendations for Practice

5.5.1.1 Relationship between Deposit Mobilization and Efficiency of DTMFIs

The study found that DTMFIs which had low amounts of customer deposits had inefficiencies in administrative and personnel related activities leading to extra unnecessary costs. This in turn leads to a non-optimal point of operation of such financial institutions and lack of competitiveness in the market. In order to create competitive advantage through efficiency, it is recommended that the DTMFIs sells off the unnecessary assets and cuts their personnel costs as well as their administrative costs to increase their operational costs.

5.5.1.2 Relationship between Branching and Efficiency of DTMFIs

The study found that branching contributed to improvement on the level of efficiency of the DTMFIs. Also the study found that DTMFIs which had less than 10 branches were inefficient in their administrative and employee related activities. Therefore, to effectively apply branching strategy, it is recommended that first management of those institutions which had less than 10 branches streamlines the employee and administration activities so as to reduce the inefficiencies found in their personnel and administrative activities before pursuing branching strategies so that the strategy may be effective.
5.5.1.3 Relationship between Customer Outreach and Efficiency of DTMFIs

The study found that widening the outreach decreases the efficiency of the institutions since the unit cost per a customer increases with increase in outreach. It is recommended that DTMFIs pursue the entire market strategy and develop products which can be consumed by all customers in the market regardless of their financial capabilities.

5.5.2 Recommendations for Further Research

The study collected data from MFIs which were registered and licensed to work by the CBK. However, the findings, operations and the context might be different for other financial institutions such as banks since they serve a much bigger customer base which is varied and diversified. It thus recommended that a similar study be done on the efficiency of the banks in Kenya with a bias to the year 2013-2015 and focus on the levels of deposits, branching strategy and extent of outreach to generate more knowledge on the same to allow for reliable generalizations of the findings.
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APPENDICES

Appendix 1: Data collection tool

1. Organization code______________________________

2. Year it was licensed by CBK______________________________

3. The secondary data collection sheet for the 12 Micro-Financial Institutions

<table>
<thead>
<tr>
<th>Inputs/outputs</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staff costs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Directors remuneration</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operational costs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Customer deposits</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of branches</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of customers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of accounts</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amount of Loans disbursed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Assets</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Revenue</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Profit before tax</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Profit after tax</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Appendix 2: List of the licensed MFBs

<table>
<thead>
<tr>
<th>Name of the MFIs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
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<td>4</td>
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<td>11</td>
</tr>
<tr>
<td>12</td>
</tr>
<tr>
<td>13</td>
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</tbody>
</table>