INFLUENCE OF MOBILE BANKING ON FINANCIAL PERFORMANCE OF DEPOSIT TAKING MICRO-FINANCE INSTITUTIONS IN KENYA

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DECLARATION

This Research work is my original work and has not been submitted to any University for any award.

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This Masters Research Report has been submitted with my approval as a University supervisor.

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CHAPTER ONE
INTRODUCTION

1.1 BACKGROUND OF THE STUDY

Nowadays, rapid development in technology holds the potential to fundamentally change of any organization but more so on financial institution (DeYoung, 2007). Due to increased competition, commercial banks have had to make the right choice in the mix of what to adopt of the processes together with which new development strategies to adopt in order to sustain growth and improve the returns to investors (Alam, 2003). Banking through M-banking has emerged as a strategic resource for achieving higher efficiency, control of operations and reduction of cost by replacing paper based and labour intensive methods with automated processes thus leading to higher productivity and profitability.

During the last few decades, MFIs has gained unprecedented importance on a world wide scale due to being regarded as a sustainable source of finance, new employment, innovation and economic growth (Morales, Gualdron & Roig, 2005). MFIs innovations are of fundamental importance to any economy as they spur economic growth and wealth creation (Barringer & Ireland, 2008). The potential impact of M-banking banking on cost savings, revenue growth and risk profile of the financial institution have generated considerable interest and speculation about the impact of the Internet on the financial sector (Berger, 2003). As such MFIs have adopted M-banking to ease their operation and to enhance service delivery to their customers as well as to attain profitability.
There has been rapid growth in technological developments, which as a result has brought opportunities to institutions providing or offering financial services through use of channels that have multiple electronic options (Laukkanen & Pasanen, 2007). Mobile phone is one such channel which financial service providers use to serve their consumers, those providers who have adopted use of such channels have gained mileage in this direction thereby increasing numbers of their customers and making cost savings in the process.

1.1.1 Mobile Banking

Mobile banking (m-banking) refers to provision and availment of banking and financial services through the help of mobile telecommunication devices. The scope of offered services may include facilities to conduct bank and stock market transactions, administer accounts and to access customized information. Mobile networks in Kenya offer m-money services in the name of M-pesa by Safaricom, Orange money by Orange, Yu-cash by Essar, and Airtel money by Airtel. Currently the mobile money market size is about 15 million users transferring Kshs. 2 billion daily, of these over 14 million are Mpesa customers. The growing convergence of use for mobile services to network operators, manufacturers of these devices, content providers, financial services providers, and demand by consumers has applied pressure on the industry in general (Karjaluoto, 2002). It therefore means that the evolution of mobile banking will be following the internet banking.
Mobile banking is an innovation that has progressively rendered itself in pervasive ways cutting across several financial institutions and other sectors of the economy. Mobile banking has advanced from providing mere text messaging services to that of pseudo internet banking where customers could not only view their balances and set up multiple types of alerts but also transact activities such as fund transfers, redeem loyalty coupons, deposit cheques via the mobile phone and instruct payroll based transactions (Vaidya 2011). Mobile banking services allows transacting of financial transactions using mobile phones and other related devices, where they are able to make transfers between bank accounts and view account balances or settle bills. The customers are able to access online banking, while at the same time receiving full range of banking operations (Alam, 2003).

KPMG International (2009) notes that mobile phones are being used as ideal alternative to personal computers and the challenge is for the network operators to provide services that is trustworthy and has added value for the consumers. The fast-changing competitive environment, globalization, economic changes, regulation, privatization and the like demands that microfinance are run efficiently and effectively by continuously engaging in financial innovations. A positive aspect of mobile phones is that mobile networks are available in remote areas at a low cost. The poor often have greater familiarity and trust in mobile phone companies than with normal financial institutions (Nyangosi et al. 2009).
1.1.2 Financial Performance

Performance is the outcome of all of the organization’s operations and strategies (Wheelen & Hunger, 2002). Measuring financial performance accurately is critical for accounting purposes and remains a central concern for most organizations. Performance measurement systems provide the foundation to develop strategic plans, assess an organization’s completion of objectives, and remunerate managers (Ittner & Larcker, 1998). While consensual measurement of performance promotes scholarly investigations and can clarify managerial decisions, marketers have not been able to find clear, current and reliable measures of performance on which marketing merit could be judged.

Two approaches have been adopted in the literature to measure financial performance. Longer term performance has been chosen for two reasons: firstly because that is what the customers of “retail” products such as unit trusts might be expected to be looking at, particularly in view of the charging arrangements which make shorter term investment unwise. Secondly, one of the attractions of looking at “real” products rather than theoretical studies is the question of how administrative costs contribute to the results. In principle, such costs might appear in either front-end or regular annual management charges. Using five-year offer-to-bid figures should capture such effects regardless of the choices of individual firms as to how to split costs between the two types of charges.

Financial performance is essential to the survival of firms in the competitive and uncertain environment. Management is eager to learn how the effort of service quality improvement is related to an organization’s performance (Sousa & Voss, 2002). Financial
performance ultimately reflects whether or not service quality is realized in a firm. Financial performance is conceptualized as the extent to which a firm increases sales, profits, and return on equity. These are indicators of financial performance and manifest the wellbeing of a firm collectively. Financial performance is a measure of a Bank’s policies and operations in monetary terms. It is a general measure of a firm’s overall financial health over a given period of time, and can be used to compare similar firms across the same industry or to compare industries or sectors in aggregation (Lee, 2003). There are many different ways to measure a bank’s financial performance. This may be reflected in the firm’s return on investment, return on assets, value added, among others and is a subjective measure of how a firm can use assets from its primary mode of business and generate revenues (Schon, 2008).

1.1.3 M-banking and Financial Performance

Financial institutions have been in the process of significant transformation. The force behind the transformation of these institutions is innovation in information technology. Information and communication technology is at the Centre of this global change curve of mobile and internet banking in Kenya. Rapid development of information technology has made banking tasks more efficient and cheaper. Strategic management in financial institutions demand that they should have effective systems in place to counter unpredictable events that can sustain their operations while minimizing the risks involved through technological innovations. Only financial institutions that are able to adapt to their changing environment and adopt new ideas and business methods have guaranteed
survival. Some of the forces of change which have impacted the performance of financial institutions mainly include technological advancements such as use of mobile phones and the internet.

Mobile banking applications are continuously being developed and have now become banks’ favourite channels for offering banking services. According to Coelho (2003), one of the main strategies for growth and a major focus for mobile network providers and the banking industry, is the mobile banking and the potential it offers in providing various services. For instance, the mobile banking applications would enable offering of real-time 2-way data transmission, banking services, among other services (Daniel, 1999). Mobile banking presents an opportunity to reduce transaction costs by replacing costly labor with less expensive, automated technology and decreasing transportation costs associated with disbursing loans and collecting payments (CGAP, 2009). A recent study by the Clinton Foundation estimates that mobile money may reduce transaction costs for MFIs by up to 80 percent.

Mobile banking services has enabled facilitation and movement of money from the banking institutions to the poor members of the society in the rural and urban centres at transactions costs that are much cheaper than those offered by commercial banks, which in the process has enabled the banks to reach the unbanked resulting in tremendous growth in the banking industry (Jenkins, 2008). The easy access and availability of the mobile phone and its convenience in size and use has brought additional value and created opportunities to both mobile service providers and customers, among others.
Commercial banks are now able to reach many more new customers than before while at the same time providing them with banking services at their convenience anywhere in the country, while existing and new customers are enjoying the increased security and affordability of the services and devices (Jenkins, 2008).

1.1.4 Deposit Taking Microfinance Institutions in Kenya

Micro-finance institutions in Kenya are classified into three different categories: (Tier 1) deposit-taking institutions (DTMS) of which the study will focus on, (Tier2) credit only non deposit taking institutions, (Tier 2) informal organizations supervised by an external agency other than the government. Other category involves such as Societies (ROSCAS), club pools and financial services associations (FSAs). MFIs are represented by an umbrella organization, Association of Microfinance Institutions (AMFI) registered in 1999 whose main role is promotion of the growth of the MFIs and supporting them to build capacity (Microfinance Act, 2006). The micro finance industry plays a pivotal role in the deepening of financial markets and enhancing access to financial services and products to a majority of Kenyans (CBK, 2012). Deposit-taking micro finance institutions are regulated by the micro finance Act 2006, the micro finance regulations 2008 and prudential regulations established by the central bank of Kenya (Kimani, 2010).

According to Mix Market (2011), Kenyan microfinance sector is one of the most vibrant in Sub-Saharan Africa and includes a diversity of institutional forms and a fairly large branch network to serve the poor. According to (FinAccess National Survey, 2009),
statistics indicates that between 2006 and 2009, usage of MFI services in Kenya doubled, from 1.7% of the population in 2006 to 3.4% of Kenya population in 2009. The survey found out that out of the 17.4 million adults in Kenya, 26.4% have access to financial services through formal and semi formal (MFIs and SACCOs) institutions, 35.2% use informal services (ASCAs, ROSCAs, family/friends) and 32% are financially excluded (FinAccess National Survey, 2009). By December 31st 2007, AMFI had registered 34 MFI’s as its members which comprise NGO’s, companies, trusts, societies and commercial banks, among others. Out of these, twenty one institutions had an estimated 1.1 million institutional savers and 250,000 borrowers with a loan portfolio of Kshs 4.261 billion (CBK, 2011).

Most of the MFIs in Kenya are self regulated and rely heavily on international donor support and pose a legal challenge (CBK 2011). However, microfinance activities have been regulated in Kenya since 2006, due to a clear recognition from the public and the Government that regulation of MFIs is necessary to establish the right environment for a market shifting from donor funded and poverty oriented institutions to for-profit organizations. Former credit-only institutions wanting to leverage deposits from the public can only operate successfully in the market if it is properly regulated (CBK, 2007). Regulated microfinance has grown tremendously with the licensing of nine (9) licensed DTMs with 69 branches, boasting of 1.52 million deposit accounts valued at Ksh 12.3 billion (USD 104 million) and 0.58 loan accounts with an outstanding loan portfolio of Ksh. 17.9 billion (USD 162 million) as at the end of June, 2012 (CBK 2012).
The deposit-taking microfinance institutions have a total of 59 branches, comprising Faulu Kenya 6, Kenya women finance trust 16, Rafiki 3, Remu 3, SMEP 6, Uwezo 2, Century 1 and SUMAC with 1 branch (CBK, 2012). As at December 2011 deposit-taking microfinance institutions held total assets of Ksh. 24.8 billion with total customer deposits reaching Ksh. 10 billion, these performance was supported by a total workforce of 3,030 employees, thus their significance in the economy cannot be overemphasized (CBK, 2012). This performance is expected to continue as the institutions expand to serve the unbanked and under-banked Kenyan populace (CBK, 2012). This has been made possible by the innovative forms, progressive government policies and high product line diversifications. The MFIs have become capable of maintaining low financial and operational expenses ratio making Kenyan microfinance fairly profitable with Return On Assets (ROA) of over 5% in 2010 (Mix Market, 2012). However, high portfolio at risk (PAR) raises concerns about the riskiness of the overall portfolio and sustainability of profits over time.

1.2 Research Problem

Technology has greatly advanced playing a major role in improving the standards of service delivery in the financial institution sector. Roldos (2006) argued that one major aspect of growth is the financial performance of firms in the competitive environment. M-banking is one of the newest approaches to the provision of financial services through ICT, made possible by the widespread adoption of mobile phones in developing and under-developed countries. The roll out of mobile telephony has been rapid and has
extended access well beyond already connected customers in the financial sector in Kenya. Mobile networks in Kenya offer m-money services through M-pesa by Safaricom, Orange money by Orange, Yu-cash by Essar, and Airtel money by Airtel. The scope of services offered includes facilities to conduct banking transactions, administer accounts and to access customized information. It is clear that M-banking technology will make Kenya realize its vision of ensuring high levels of savings to finance overall investment needs (Kenya’s Vision 2030).

In Kenya, the most popular means of money transfer being M-PESA, is now used by 39.9% of all adults in Kenya. With almost half (47.5%) of all Kenyan adults owning a mobile phone, this presents a great opportunity for financial service providers to partner with mobile phone service providers in the provision of financial services (Kenya, 2009). M-banking system allows users to send or withdraw money at over 23,000 retail outlets compared with approximately 1,000 bank branches (CBK, 2010). The potential for reaching providers of such services as health insurance, savings and MFIs has increased substantially since the advent of mobile banking in Kenya (Jack & Suri, 2010). In the introduction of mobile banking by most MFIs, the number of mobile transactions of MFIs rose from 27% in 2008 to 51% in December 2011. This is because the mobile service provider’s M-PESA is the most popular and widely networked mobile money service (Financial Sector Deepening, 2011).

Despite the adoption of M-banking services in MFIs, no literature available to indicate the effect of M-banking on individual MFIs financial performance. Local studies done
includes; Kenya, Kimingi (2010) conducted a study on the effects of technological innovation on the financial performance of commercial banks in Kenya, Kariuki (2010) did a study on the relationship between financial innovation and financial performance of commercial banks in Kenya and recommended replication in Microfinance institutions, Balagizi (2011) did a study on the effect of innovative changes on the financial performance of private and non-profit making organization with focus to selected organizations in Kenya and Nyawira (2011) conducted a study on the relationship between the level of technological innovation and financial performance of commercial banks in Kenya. This leaves a wide knowledge gap that the current study aims to bridge by investigating the influence of m-banking on financial performance of deposit taking micro-finance institutions in Kenya. The study aim to answer the following research questions, that is, how does M-banking affect financial performance of Deposit Taking Micro-Finance Institutions in Kenya?, and to what extent does the use of M-banking have been adopted in Deposit Taking Micro-Finance Institutions in Kenya.

1.3 Objective of the Study

This study sought to establish influence of mobile banking on financial performance of deposit taking micro-finance institutions in Kenya.

1.4 Value of the Study

The findings of this study will be useful both to the formal and informal MFIs in Kenya. The study will provide useful information that will help the management of microfinance
institutions in addressing M-banking and its effect on financial performance and devise strategies to ensure the institutions remain competitive.

The study will also be of great significance to investors who may have an interest of investing in microfinance institutions in Kenya. These investors include donors, government, commercial banks etc.

The study findings are expected to be of great importance to various researchers involved in policy making. The study will further make a myriad contribution to the literature on Deposit Taking Microfinance institutions that will be helpful to researchers who want to further on their study in the area.
CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter summarizes the information from other researchers who have carried out their research in the same field of study. The specific areas covered here are theories framework, critical review, empirical review and summary.

2.2 Theoretical Framework

This section discusses theories of M-banking that the study is grounded on, this includes: Innovator’s solution theory, Innovator’s dilemma theory of innovation and Disruptive innovation theory.

2.2.1 Innovator's Solution Theory

Christensen and Raynor's (1997) theory of the innovator's solution is a brilliant analysis of why companies fail to innovate. It explains convincingly why corporate managements don't learn about good ideas, and why managers succumb to inherent pressures to run away from the challenge of disruptive competition rather than stand and fight. The decisions made as a result of these pressures make sense in the short run to the individuals involved, but in due course they send the organization into an inexorable death spiral (Anthony & Christensen, 2008).
According to Christensen and Raynor, corporate leaders should put up a wall between the innovation and the existing hierarchy. Leadership should create an independent business unit, which will provide a safe and protected environment for innovation. There the innovation can flourish without having to fight off the interferences and intrusions and anti-innovation attitudes of the hierarchy. Christensen and Raynor's innovator's solution theory rests on the hope that if one can build enough commercial success in the marketplace, he/she has a better chance of eventually winning that battle of persuasion. Surely, their argument goes, the hard numbers will win the war. Unfortunately the track record shows that even with strong commercial success, numbers and reason are not enough to dislodge the forces of stasis and inertia.

2.2.2 Innovator’s Dilemma Theory of Innovation

The innovator's dilemma theory was proposed by Christensen in 2003. The crux of Christensen's (2000) insight is that firms wishing to innovate face an irresolvable dilemma: their existing customers will encourage them to focus resources on building a better widget, while somewhere else another company is building a gadget, either for new sub-segments of the market, or for an altogether new market. The technological trajectory of the gadget, however, will lead it to eventually usurp the position of widgets in the whole marketplace by destroying the widget market altogether. Therefore, widget companies that listen closely to their existing customers and perfect their technology will one day inevitably face a situation where the market for their technology has been made
redundant by the market for the next-best-thing: the gadget. Those feckless existing customers will then defect to gadgets, leaving widget producers high and dry.

Analytically, this dilemma was explained by Christensen as having three key elements: The first is that there is a strategically important distinction between what I call sustaining technologies and those that are disruptive. Second, the pace of technological progress can, and often does, outstrip what markets need. This means that the relevance and competitiveness of different technological approaches can change with respect to different markets over time. And third, customers and financial structures of successful companies color the sorts of investments that appear to be attractive to them, relative to certain types of entering firms (Christensen, 2003).

2.2.2 Disruptive Innovation Theory

Disruptive innovation theory was hypothesized by Christensen in 1997. He suggested that in a quickly changing and uncertain world, innovation is the key to competitive advantage. Yet innovation also increases uncertainty and market pressure. The more radical the innovation, the more difficult it is to estimate its market acceptance and potential. The increasing complexity and market dynamics create a substantial knowledge gap between theory and practice. Many companies are not organized to give new ideas a chance, to recognize trend breaking points in the market, to adapt quickly to changing market circumstances, or to cause market changes in the first place.
Innovation patterns appear as fractals, with small decision cycles imbedded in larger decision cycles in which the basic development steps (identify – develop – plan – implement) are the guiding principle (Damanpour, 2006). Within this basic outline, the process of disruptive innovation is a rhythm of searching and selecting, exploring and experimenting, of learning and unlearning, and cycles of divergent and convergent thinking. It is a complex and interactive process of probing and learning or feedback. Contrary to linear, incremental innovation processes, such as the stage-gate concepts (Cooper et al., 2002), disruptive innovation is more like a spiral or circular development process of continuous fast feed-forward and feed-back loops. This disruptive innovation development process is an interdependent system, based on the concepts of system thinking and of dynamic strategic thinking with learning as a central aspect. This process is affected by exogenous determinants such as economic, social and political factors, competition and infrastructure, and endogenous determinants such as resources, corporate structure and corporate culture.

2.3 Empirical Review

From the ongoing literature, a few empirical studies have examined the relative performance of financial institution offering M-banking services. Egland et al. (1998) was the first important study, which estimated the number of US banks offering M-banking and analyzed the structure and performance characteristics of these banks. It found no evidence of major differences in the performance of the group of banks offering M-banking activities compared to those that do not offer such services in terms of
profitability, efficiency or credit quality. However, transactional Internet banks differed from other banks primarily by size in terms of the customers they serve.

Using information drawn from banks in Italy, Hasan et al. (2002) found that the M-banking institutions were performing significantly better than the non-Internet groups. Additionally, the risk variables associated with the Internet group continued to be lower relative to the non-Internet group. The asset-liability variables revealed that on average the banks in this Internet group were larger and had significantly higher trading and investment activities and less dependent on retail deposits (both demand and saving deposits) relative to the non-Internet group. The only category where the Internet group showed a lower performance was the noninterest expense category. It found a significant and positive link between offering of M-banking services and banks’ profitability and a negative but marginally significant association between the adoption of M-banking and bank risk levels particularly due to increased diversification.

Hernando and Nieto (2005) examined the performance of multichannel banks in Spain between 1994 and 2002. The study found higher profitability for multichannel banks through increased commission income, increased brokerage fees and (eventual) reductions in staffing levels and concluded that the Internet channel was a complement to physical banking channels. In contrast to earlier studies, the multichannel banks in Spain relied more on typical banking business (lending, deposit taking and securities trading). The adoption of the M-banking as a delivery channel had a positive impact on banks’ profitability after one and a half years of adoption. It was explained by the low lower
overhead expenses and in particular, staff and IT costs after the same period. Sathye (2005) investigated the impact of the introduction of transactional M-banking services on performance and risk profile of major credit unions in Australia. Similar to the results of Sullivan (2000), the M-banking variable didn’t show a significant association with the performance as well as with operating risk variable. Thus, Internet banking didn’t prove to be a performance enhancing tool in the context of major credit unions in Australia. It neither reduced nor enhanced risk profile.

DeYoung (2001a, 2001b, 2001c and 2005) analyzed systematically the financial performance of pure-play Internet banks in U.S. The study found relatively lower profits at the Internet-only institutions than the branching banks, caused in part by high labour costs, low fee based revenues and difficulty in generating deposit funding. However, consistent with the standard Internet banking model, the results indicated that Internet-only banks tended to grow faster than traditional branching banks. Internet-only banks have access to deeper scale economies than branching banks and because of this, they are likely to become more financially competitive over time as they grow larger. Delgado et al. (2004 and 2006) found similar results for Internet-only banks in the EU. Nevertheless, the magnitude of technology based scale economies found in Delgado et al. (2004 and 2006) was substantially larger than that estimated by DeYoung studies.

According to a recent Consultative Group to Assist the Poor (CGAP) survey which involved 152 MFIs, it was realized that Sub-Saharan Africa, South Asia and East Asia and the Pacific have the greatest number of MFIs using manual systems and spread sheets
(roughly 20%). Banks and Rural Banks reported to mostly using manual systems (roughly 10%). The remaining systems are off-the-shelf or custom built. Njenga (2009) on Mobile phone banking usage experiences in Kenya, availability of multiple outlets across the country implies more points of contact with customers as opposed to the traditional banking hall set up. He also found that the flexible operating hours of the M-Banking agents leaves them with greater opportunities to satisfy banking requirements that may arise at any time.

2.4 Summary of the Literature Review

Technology is being used by businesses today to enhance growth and competitiveness (Anyasi and Otubu, 2009). Firms are developing new and innovative products to be able to maintain existing customers and to attract new markets. One such innovation is the introduction of M-banking technology in the banking sector. M-banking has changed the way banks perform their operations, this has led to the introduction of new products and services that are aimed at lowering transaction costs and reaching a larger number of customers (Adewoye and Oni, 2010). M-banking provides the potential of increasing efficiency of payments system and expanding access to formal financial services by those who presently lack it. At the same time, it could make banking more convenient and cheaper to those who already have bank accounts (Porteous, 2006).

The wireless industry is one of the most dynamic and growing industry in the world economy today. There is a shift from the ‘sit and search’ internet to ‘roam and receive’ Mobile environment. Mobile Phone services have enhanced the value of a product or
service in such a tremendous way. Recent developments in mobile technology have enabled users to convert their handsets from plain tools of communication to more composite m-commerce gadgets (Morales, Gualdron & Roig, 2005). An extreme view speculates that the M-banking will destroy old models of how financial services are developed and delivered. The widespread application of modern technology in banking is expected to affect the mixture of financial services produced by financial institution, the manner in which financial institution produce these services and the resulting financial performances of these banks. Whether or not this extreme view proves correct and whether financial institution take advantage of this new technology will depend on their assessment of the profitability of such a delivery system for their services.

The financial system is very important to economic development of a country. Kenya’s longterm plan for national transformation, Vision 2030, identifies it as one of six priority sectors under the economic pillar. For Kenyans to effectively access financial services, several banks have implemented M-banking technology. Considerable research has been carried on mobile banking, mobile money and MFIs. However, a clear picture of the relationship between mobile banking and growth of MFIs has not emerged from previous studies. To date researchers have produced little evidence regarding these potential changes. Nonetheless, recent empirical studies indicate that M-banking is not having an independent effect on banking profitability, although these findings may change as the use of the M-banking becomes more widespread. Limited and contradictory findings have resulted from the different units of analysis, different measures of growth, limited
theory base and reliance on cross-sectional methods. The existing body of knowledge is not sufficient enough to explain the influence of mobile banking on financial performance of deposit taking micro finance institutions.
CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the methodology, which was used to carry out the study. It further describes the type and source of data, the target population and sampling methods and the techniques that was used to select the sample size. It also describes how data was collected and analyzed. The suitable methodology in this study gives the guidelines for information gathering and processing.

3.2 Research Design

This research problem was studied through the use of a descriptive research design. According to Cooper and Schindler (2003) a descriptive study is concerned with finding out the what, where and how of a phenomenon. This study therefore is capable to generalize the findings to all the departments in the organization involved in innovation.

3.3 Population of Study

Mugenda and Mugenda (2003) defined population as a total group of individuals, events or objects exhibiting similar observable characteristics. The population of this study comprised of Deposit Taking Microfinance institutions Kenya. There are nine DTM in Kenya as at June 2014 (CBK, 2014). Thus the study conducted a census survey owing to the small number of DTM in Kenya.
3.4 Data Collection

The researcher collected primary where structured questionnaire was used to collect data from the respondents from each of the selected DTM. The questionnaire was structured to include both closed, open-ended and matrix questions to allow variety. The structured questions are normally close ended with alternatives from which the respondent is expected to choose the most appropriate answer (Mugenda & Mugenda, 2003). Unstructured questions are open-ended and present the respondent with the opportunity to provide their own answers. These types of questions are easy to formulate and allow the respondent to present their feelings on the subject matter enabling a greater depth of response (Mugenda & Mugenda, 2003). Matrix questions were also utilized. This type of questions present the respondent with a range of questions against which they are expected to respond based on a predetermined rating scale. The most commonly used is the likert scale. These types of scales are used to measure perceptions, attitudes, values and behaviour (Cooper & Schinder, 2007). These types of questions are popular with the respondents and researchers as they are easy to fill in, economical and provide easy comparability. The respondents of this study were senior, middle low level managers in, finance department, product development departments, IT departments and operation departments in each DTM while two (2) respondents in each department were targeted contributing to 72 respondents.
3.5 Data Analysis Techniques

The study generated both qualitative and quantitative data. Quantitative data was coded and entered into Statistical Packages for Social Scientists (SPSS Version 17.0) and analyzed using descriptive statistics. Qualitative data was analyzed based on the content matter of the responses. Responses with common themes or patterns were grouped together into coherent categories. Descriptive statistics involved use of absolute and relative (percentages) frequencies, measures of central tendency and dispersion (mean and standard deviation respectively). Quantitative data was presented in tables and graphs and explanation were presented in prose.

The study also used financial ratio analysis was to measure the organization performance. Specifically, the study used Spearman correlation to establish this relationship. The correlation coefficient will be two-tailed as the relationship will be positive or negative and at 95% confidence level.

The regression equation is:

\[ Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \alpha \]

Where: \( Y \) is the dependent variable (financial performance),
\( \beta_0 \) is the regression coefficient/constant/\( Y \)-intercept,
\( \beta_1, \beta_2, \beta_3 \) and \( \beta_4 \) are the slopes of the regression equation,
\( X_1 \) is M-banking deposit
\( X_2 \) is M-banking Withdrawal
\( X_3 \) is account opening,
X₄ is the number of M-banking accounts,

ε is an error term normally distributed about a mean of 0 and for purpose of computation, the ε is assumed to be 0.
CHAPTER FOUR
DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter discusses the interpretation and presentation of the findings. The purpose of the study was to investigate influence of mobile banking on financial performance of deposit taking micro-finance institutions in Kenya. The researcher made use of frequency tables and figures to present data. This study targeted 72 respondents; questionnaires were distributed to all targeted respondents. However, out of 72 questionnaires distributed only 56 respondents fully filled and returned to the questionnaires. This contributed to 78%. The researcher made use of frequency tables and figures to present data. The finding intended on answering the study’s research questions. Data composed was collated and reports were produced in form of tables and figures and qualitative analysis done in prose.

4.2 Demographic Characterization of the Respondents

As part of the general information, the research requested the respondents to indicate department of working, duration of serving in the agribusiness sector, highest academic qualification and the agribusiness agencies respondents served.

4.2.1 Department of Working

The study aimed to investigate departments the respondents were working at in their organization. From the findings most (33%) of the respondents were working at ICT
department, 26% were working at finance department, 24% were working at product development while 17% were serving in operations department. This depicts that all participant of the study were under the department that the study targeted as stipulated in previous chapter.

Table 4.1 Department of Working

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<th>Department</th>
<th>Frequency</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Finance</td>
<td>15</td>
<td>26</td>
</tr>
<tr>
<td>Operations</td>
<td>10</td>
<td>17</td>
</tr>
<tr>
<td>Product development</td>
<td>13</td>
<td>24</td>
</tr>
<tr>
<td>ICT</td>
<td>18</td>
<td>33</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>56</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Source (Researcher, 2014)

4.3 M-banking

4.3.1 Adoption of M-banking

The study requested the respondent to indicate whether the organization has adopted M-banking. From the findings, 77% of the respondents pointed out that their organization adopted M-banking while the rest (23%) indicted that the organization had not fully adopted M-banking.
4.3.2 Factor Influencing Adoption of M-banking in an Organization

Table 4.2 illustrates the finding of the study on factors influencing organization adoption of M-banking. From the findings, most of the respondent agreed that management support of competitive strategies influence organization adoption of M-banking as indicated by a mean of 4.01, respondents pointed that information intensity influence organization adoption of M-banking as depicted by mean of 3.77, specialization of business influence organization adoption of M-banking as illustrated by mean of 3.70, respondents size of organization influence organization adoption of M-banking as shown by mean score of 3.64. Finally respondents opined that quality of the systems influence organization adoption of M-banking as depicted by mean score of 3.52.
Table 4.2 Factors Influencing Organization Adoption of M-banking

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>STDev</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size of organization</td>
<td>3.64</td>
<td>1.284</td>
</tr>
<tr>
<td>Quality of the systems</td>
<td>3.52</td>
<td>1.168</td>
</tr>
<tr>
<td>Information intensity</td>
<td>3.77</td>
<td>1.297</td>
</tr>
<tr>
<td>Specialization of business</td>
<td>3.7</td>
<td>1.198</td>
</tr>
<tr>
<td>Management support of Competitive strategies</td>
<td>4.01</td>
<td>1.196</td>
</tr>
</tbody>
</table>

Source (Researcher, 2013)

4.4.3 Aspects of the M-banking on the Organizations Performance

Table 4.3 illustrates the finding of the study on the respondent level of agreement to the effect of the M-banking on the organization performance. From the findings, most of the respondents agreed that DTM adopt M-banking to identify better (new) potential markets and that the DTM adopt M-banking aims at developing the profitability of a business to the full as depicted by mean score of 4.55 and 4.16 respectively. Also respondents agreed that M-banking helps the DTM to get better (new) ways to serve target markets, DTM applying M-banking leads to its business performance improvement and that market orientation is expected to produce a significant positive impact on all analyzed effects of M-banking activities as illustrated by mean score of 3.89, 3.40 and 3.19 respectively.
Table 4.3 Expectation of M-banking on Organizations Performance

<table>
<thead>
<tr>
<th>Purpose for DTM adoption of M-banking is to identify better potential markets</th>
<th>Mean</th>
<th>STDev</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market development helps the DTM to better ways to serve target markets</td>
<td>3.89</td>
<td>1.01</td>
</tr>
<tr>
<td>DTM is involved in M-banking aims at developing the profitability of a business to the full</td>
<td>4.16</td>
<td>0.223</td>
</tr>
<tr>
<td>DTM adoption of M-banking leads to its business performance improvement</td>
<td>3.40</td>
<td>1.498</td>
</tr>
<tr>
<td>Market orientation is expected to produce a significant positive impact on all analyzed effects of innovative activities</td>
<td>3.19</td>
<td>1.321</td>
</tr>
</tbody>
</table>

Source (Researcher, 2014)

4.5.6 Effect of M-banking on Organization Financial Performance

Table 4.4 shows the finding of the study on the effect of M-banking on organization financial performance. From the finding most of the respondent indicated that service quality improves organization financial performance to a great as indicated by mean score of 3.97, also respondent purported that profitability, efficiency improves organization financial performance to a moderate extent as shown by mean score of 3.44 and 3.34 respectively. Finally few of the respondent pointed that competitive positioning improves organization financial performance to a moderate as indicated by mean score of 3.19.
Table 4.4 Effect of M-banking on Organization Financial Performance

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>STDev</th>
</tr>
</thead>
<tbody>
<tr>
<td>Profitability</td>
<td>3.44</td>
<td>1.25</td>
</tr>
<tr>
<td>Competitive positioning</td>
<td>3.19</td>
<td>1.252</td>
</tr>
<tr>
<td>Service quality</td>
<td>3.97</td>
<td>1.39</td>
</tr>
<tr>
<td>Efficiency</td>
<td>3.34</td>
<td>1.159</td>
</tr>
</tbody>
</table>

Source (Researcher, 2014)

4.6.3 Extent that M-banking influence Financial Performance of DTM

Figure 4.2 illustrates the findings of the study on the extent that M-banking affect financial performance of DTM. Majority (57.5%) of the respondents’ purported that M-banking affect financial performance of DTM to a great extent, 23% were of the opinion that M-banking affect financial performance of DTM to a very large extent while 19% argued that M-banking affect financial performance of DTM to a moderate extent.

Figure 4.2 Effect of M-banking on Financial Performance of DTM

![Bar chart showing extent of M-banking influence on DTM financial performance]
4.4 Financial Ratios Analysis

This section involves analysis of the financial performance of the deposit taking microfinance institutions in Kenya. The focus of the study was on electronic money, transfer, m-banking withdrawal, m-banking deposit and online account opening. The results indicate that M-banking influence DTM financial performance positively where M-banking deposits had the highest t-values at 2.212, followed by electronic money transfer at 1.557, then online account opening at 1.263, while M-banking Withdrawals had the least t-value at 0.971. Based on the results, all the explanatory variables are statistically significant (p= 0.0411, p=0.0364, p= 0.0409 and p=0.0270). In statistics, a significant level of p <0.05 is significant. This means that the four predictor variables are useful for predicting the effect M-banking on financial performance of deposit taking micro financial institutions in Kenya.

Table 4.5 T-Statistics

<table>
<thead>
<tr>
<th>Model</th>
<th>T stats</th>
<th>Mean</th>
<th>Std. Dev</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (Constant)</td>
<td>0.965</td>
<td>-3.83</td>
<td>9.22</td>
<td></td>
</tr>
<tr>
<td>Electronic money transfer</td>
<td>1.557</td>
<td>-4.06</td>
<td>6.50</td>
<td>0.0411</td>
</tr>
<tr>
<td>M-banking Withdrawal</td>
<td>0.971</td>
<td>234112.83</td>
<td>362193.47</td>
<td>0.0364</td>
</tr>
<tr>
<td>M-banking deposit</td>
<td>2.212</td>
<td>-3.83</td>
<td>9.22</td>
<td>0.0409</td>
</tr>
<tr>
<td>Online account opening</td>
<td>1.263</td>
<td>617.17</td>
<td>885.18</td>
<td>0.027</td>
</tr>
</tbody>
</table>
4.5 Discussion of Findings

The study sought to find out the influence of mobile banking on financial performance of deposit taking micro-finance institutions in Kenya. On factors influencing adoption of the M-banking in DTMs, the study established that management support of competitive strategies, information intensity and specialization of business are among the main factors influencing adoption of M-banking in DTMs. According to Christensen (1997) suggested that in a quickly changing and uncertain world, innovation is the key to competitive advantage.

To the expectation of M-banking adoption on DTMs performance, the study found that DTM adopt M-banking to identify better (new) potential markets, developing the profitability of a business to the full, M-banking helps the DTM to get better (new) ways to serve target markets, DTM applying M-banking leads to its business performance improvement and that market orientation is expected to produce a significant positive impact on all analyzed effects of M-banking activities. According to Lee, Lee and Kim (2007) Mobile banking services provide time independence, convenience and promptness to customers, along with cost savings. Mobile banking presents an opportunity for banks to expand market penetration through mobile services.

On effect of M-banking on DTMs Financial Performance, the study noted that service quality, efficiency, competitive positioning improves organization financial performance and that M-banking affect financial performance of DTM to a great extent. Finally, the study established that most of the clients to DTMs embrace M-banking where M-banking
deposits has the highest t-value, followed by electronic money transfer, online account opening and lastly M-banking Withdraws. Alam, 2003) pointed that banking through M-banking has emerged as a strategic resource for achieving higher efficiency, control of operations and reduction of cost by replacing paper based and labour intensive methods with automated processes thus leading to higher productivity and profitability. Further, Management is eager to learn how the effort of service quality improvement is related to an organization's performance (Sousa & Voss, 2002). Financial performance ultimately reflects whether or not service quality is realized in a firm.
CHAPTER FIVE
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary of the Findings

This chapter presents the summary of the data findings influence of mobile banking on financial performance of deposit taking micro-finance institutions in Kenya, the conclusions and recommendations are drawn there to. The chapter is therefore structured into summary of findings, conclusions, recommendations and area for further research.

The objective of this study was to establish influence of mobile banking on financial performance of deposit taking micro-finance institutions in Kenya. From the study findings the study found that M-banking has greatly advanced playing a major role in improving the standards of service delivery in the financial institution sector. Clients can now do this at their convenience by using their ATM cards or over the internet from the comfort of their homes. Due to the tremendous growth of the mobile phone industry most financial institutions have ventured into the untapped opportunity and have partnered with mobile phone network providers to offer banking services to their clients.

Majority of DTM have embraced M-banking. Likewise the study established that management support of competitive strategies and information intensity influence organization adoption of M-banking mostly. Additionally, the study established that purpose for DTM’s adoption of M-banking is to identify better (new) potential markets, to helps the DTM to get better (new) ways to serve target markets, DTM applying M-
banking leads to its business performance improvement. M-banking enables customers to perform all routine transactions, such as account transfers, balance inquiries, bill payments, and stop-payment requests, and some even offer online loan applications.

Through m-banking customers can access account information at any time, day or night, and this can be done from anywhere. Internet banking has improved banking efficiency in rendering services to customers. Thus, Financial institutions in Kenya cannot ignore information systems since they play an important role in their operations because customers are conscious of technological advancements and demand higher quality services. M-banking through service quality and efficiency improves financial performance to a moderate extent. The study further established that M-banking M-banking deposits, electronic money transfer, online account opening and M-banking Withdraws enhance organization financial performance.

5.2 Conclusions

The study sought to find out effect of financial innovation on financial performance of Deposit Taking Micro-Finance Institutions in Kenya. Based on the findings in relation to specific objective, the study concluded that with the emerging wave of information driven economy, the financial institutions in Kenya, including DTMs, have inevitably found itself unable to resist technological indulgence. This has led to a boom in development of mobile banking laying down a strong base for low cost banking, and growth of mobile banking use in Kenya. DTMs are gradually transitioning from manual means to the electronic means rather than jumping to electronic banking means.
Efficiency has risen as the costs have been reduced; costs of labour, provision of services, time saved, accuracy, reliability and quality of services has improved.

Rapid development of information technology has made banking tasks more efficient and cheaper. Due to the tremendous growth of the mobile phone industry most financial institutions have ventured into the untapped opportunity and have partnered with mobile phone network providers to offer banking. The scope of offered services may include facilities to conduct bank and stock market transactions, administer accounts and to access customized information services to their clients. Recognizing the potential that M-banking holds in strengthening the socioeconomic position is vital moreover to those currently lacking access to banking particularly in rural areas.

Likewise the study established that management support of competitive strategies and information intensity influence organization adoption of M-banking mostly. Additionally, the study concluded that purpose for DTMs adoption of M-banking is to identify better (new) potential markets, to helps the DTM to get better (new) ways to serve target markets, DTM applying M-banking leads to its business performance improvement. To the effect of m-banking on organization financial performance, the study concluded that service quality, profitability and efficiency improves organization financial performance to a moderate extent through adoption of M-banking by DTMs.
5.3 Policy Recommendations

Based on findings and conclusions of the study, the following recommendations were made. The study recommended that management in financial institutions should have effective systems in place to counter unpredictable events that can sustain their operations while minimizing the risks involved through technological innovations. Only financial institutions that are able to adapt to their changing environment and adopt new ideas and business methods have guaranteed survival. Some of the forces of change which have impacted the performance of financial institutions mainly include technological advancements such as use of mobile phones and the internet.

It is crucial that internet banking innovations be made through sound analysis of risks and costs associated to avoid harm on banks' performance. Bank performance is directly dependent on efficiency and effectiveness of internet banking and on the other hand tight controls in standards to prevent losses associated with internet banking. In order not to impair on their prosperity, financial institutions need to strike a balance between tight controls and standards in efficiency of internet banking. This is possible if the effects of M-banking on financial institutions and its customers are well analyzed and understood.

The study recommended that for organization to be effect on its financial performance particularly financial institution they must recognize M-banking services. This due to the realization that consumers are changing their preference as the innovation changes hence organization that will be reluctant to old models be run out of the market by the organization that will embrace product innovation. The study further recommended that
for organization to have large market share, it must recognize M-banking to reach more customers. Finally, the study recommended that organizations have to embrace process innovation since the quality of product starts at the first step hence if the process is conducted poorly, the product will also be of poor quality.

5.4 Limitations of the Study

Institutions should invest in advanced delivery technologies only if their foundation, the information system, is already sound. Yet, in many markets, these systems are not available or they are costly to develop. Microfinance institutions continue to struggle with integrating baseline technology into their operations for a number of reasons: many MFIs lack the technological know-how to make informed investment decisions when it comes to technology; commercially available software products can be expensive and vendors often do not provide sufficient local support to ensure efficient implementation of the system; MFIs perceive their operations as unique and, therefore, prefer to build custom applications which are difficult and costly to develop.

Financial institutions, especially MFIs, have limited capacity to absorb technology. Financial service providers of all types tend to focus on their own needs, rather than developing a solution that really works for their clients. Illiterate and uneducated clients do not always trust technology. Staff members may also be reluctant or ill equipped to adopt new technologies. Efforts to educate them may be necessary.
The researcher also encountered challenges such as none-cooperation by DTMS employees since it was not easy to convince some employees to fill questionnaires hence not reaching the targeted sample size. Some of the respondent gave inadequate information due to fear of victimization and that the information could be used by their competitors in coming up with competitive strategies especially the newly licensed ones. The researcher encountered various limitations that hindered access to information that the study sought. The main limitation of study was inability to include various financial institutions. This was a case study focusing on the selected DTMs institution. The study could have covered more financial institutions across all financial sectors such as banks, SACCOs, insurance among others so as to provide a more broad based result that can be reliable. However, time and resource placed this limitation.

5.5 Suggestion for Further Studies

The study explored the influence of mobile banking on financial performance of deposit taking micro-finance institutions in Kenya and established that M-banking deposits, electronic money transfer, online account opening and M-banking Withdraws influence financial performance of DTMs. The study suggests that further research to be done on challenges facing implementation of M-banking in an organization in order to give both negative and positive sides that can be reliable. The study also suggested further research to be done on internal organizational factors influencing adoption of M-banking by focusing on other sectors rather than DTM in order to depict reliable information that illustrates real situation in all financial sectors.
REFERENCES


Bryman and Bell (2003), is the resource-based ‘view’ a useful perspective for strategic management research?, *The Academy of Management Review*, 26(1), 22-40


Appendix I: Questionnaire

This questionnaire consists of five sections. Please answer all questions by ticking on the spaces provided or use the space provided for you.

SECTION A: DEMOGRAFIC

1. Indicate the name of your organization (optional)………………………………………………………

2. Which is your department of working?

   Operations [ ] Product development [ ]
   Marketing [ ] ICT [ ]

   Any others (specify)…………………………………………………………………………………………

3. On a scale of 1-5 rank how these factors have affected your adoption of M-banking in your organization. 1 means least affected while 5 means most affected.

<table>
<thead>
<tr>
<th>Factors</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size of organization</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quality of the systems</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Information intensity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specialization of business</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Management support of Competitive strategies</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. What M-banking has been adopted in your organization?
5. To what extent do you agree with the following statements that relate to the effect of M-banking on financial performance of your organization? Use a scale of 1-5 where 1 = strongly disagree and 5 = strongly agree.

<table>
<thead>
<tr>
<th>Statement</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creating value through pricing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Availability of resources and capabilities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Customer satisfaction and retention</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Creating and nurturing strong products</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environmental analysis and response to changes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aggressive anti-competitors marketing campaigns</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (Specify………………………………………………)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6. To what extent do the financial innovations affect financial performance of your organizations in the following aspects? Use a scale of 1 to 5 while 1-very low extent, 2-low extent, 3- moderate extent, 4-great extent and 5-very great extent

<table>
<thead>
<tr>
<th>Aspect</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Profitability</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Competitive positioning</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Service quality</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Efficiency</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any other specify……………</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
7. In your opinion, in what area (if any) do you think your organization can employ more innovations and what measures towards this can the institution put in place to improve its operations and become more profitable?

8. Has your organization adopted technological innovation?
   Yes [ ] No [ ]

9. Kindly indicate the numbers of the following indicators of the M-banking in your organization for the last three years:
   - Electronic money transfer ..............................................................
   - M-banking Withdrawal .................................................................
   - M-banking deposit ......................................................................
   - Online account opening .............................................................

10. To what extent does technological innovation affect the competitiveness of your organization?
    - Very great extent [ ]
    - Great extent [ ]
    - Moderate extent [ ]
    - Little extent [ ]
    - Not at all [ ]

   THANK YOU FOR YOUR TIME.