

INFLUENCE OF MOBILE FINANCIAL SERVICES ON THE PERFORMANCE OF SELECTED MICROFINANCE INSTITUTIONS IN KENYA

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ABSTRACT

Mobile financial services' basic qualities can help the unbanked overcome barriers and reap the benefits of financial services. MFS can be used by nearly everyone at any time of day or night and from anywhere, eliminating the accessibility issues presented by traditional banking. The main objective of this study was to study the influence of mobile financial services on the performance of selected microfinance institutions in Kenya. The specific objectives were to establish the influence of M-insurance, M-saving, M-credit and SMS banking on financial performance. The study adopted a descriptive research design. The study targeted 30 top management, 90 middle level management and 36 junior staff working at 5 registered MFIs were selected using simple random sampling. The study used census sampling to collect data from all 30 top management, 90 middle level management. The study employed simple random sampling to sample 10% of the 36 junior staff to involve 21 junior staff. Stratified sampling was used to obtain a sample of 156 respondents from four sections of the MFIs. Reliability analysis was done through piloting the instrument at the Jamii Bora bank. Cronbach alpha coefficient was used to test reliability. Validity was ensured through discussion with the experts including supervisors and colleagues. Primary data was collected and analyzed using quantitative and qualitative techniques and presented in tables and graphs. Secondary data was obtained from journals and MFIs data base. Data collected was analyzed using SPSS version 21 (Statistical Package for Social Sciences). Descriptive statistics and inferential statistics such as multiple regression was used. This assisted in determining the level of influence the independent variables have on the dependent variable. The study findings concluded that M-insurance influence financial performance positively; M-saving empowers ordinary people in the society and increases the market share. M-credit leads to reorganization of competitive scope. It is a source of revenue to the bank and makes operations cost effective. SMS-banking leads to increase in cost of capitalization and stability of the bank. SMS banking leads to increase in profit and lowers asset utilization. This study may help identify additional evidence to the search for performance drivers of microfinance institutions as the key financial institutions. Practically, the study may help to document the performance of microfinance institutions that use certain level of mobile financial services. More important, future researchers interested in mobile financial services and firm's performance could use this work as a springboard for their studies. This study may not only inform MFIs' decisions in order to remain competitive but also that of

regulators on the appropriate level of mobile financial services that microfinance institutions are to maintain.

Keywords: *Mobile Financial Services Performance Selected Microfinance Institutions.*

Introduction

Mobile Financial Services (MFS) is the ability to provide financial services using a mobile device like a phone hence providing secured and easy access to financial services anytime anywhere. Rapid changes in the financial services environment; increased competition by new players from non-banking sector, product innovations, globalization and technological advancement, have led to a market situation where battle of customers is intense (Ivatury & Mas, 2008). The growth of the mobile network worldwide during the past decade has achieved in expansion of access to the telecom network what years of universal service programs have failed to deliver. The mobile phone's ability to serve as a universal banking platform can provide stability in the lives of those with very limited means while unlocking new efficiencies in underserved segments of developing economies.

In a study in Bangladesh, Shamsdouha et al., (2005) found that 24 hours service, accuracy, and convenient locations were the main predictors of customer satisfaction. The study also indicated lack of privacy in executing the transaction, fear of safety and complexity of the machine were the major cause of concern for the customers. Joseph and Stone (2003), through focus group study in the United States, found that easy access to location, user-friendly ATM, and security are important factors that influence majority of bank customers' perception of ATM service quality. Patri'cio et al., (2003) undertook a qualitative study of a Portuguese bank regarding customers' use of multi-channel offerings. The study identified accessibility and speed of operation as strong predictors of customers' satisfaction, whereas security dimension and technical failures were main causes of dissatisfaction.

In Pakistan, State Bank of Pakistan (SBP) introduced ATM facility in 1999. It has witnessed a phenomenal increase. For example, the number of ATMs increased from a mere 206 in 2000, to more than 3999 in 2009 in the country. Similarly, the number of ATM transactions has grown from 3.6 million in 2000 to more than 25 million in the same period. Further, the value of ATM transactions rose from Rupees 21.507 billion in 2000 to more than 189 billion in 2009. Likewise, the number of ATM cards in circulation increased from 0.24 million in 2000 to over 0.881 million in 2009 (SBP, 2009). Currently, the ATM facilities in Pakistan are generally used for cash withdrawal, payment of utility and credit cards bills, balance inquiry, change of personal identification number and transfer of funds facility.

Mobile financial services are thought to encompass a broad range of financial activities and or services that consumers engage in or access using their mobile phones. In 2009, Zain launched their own mobile money transfer business, known as ZAP, in Kenya and other African countries. Pakistan has also launched a mobile banking solution, in coordination with Taameer Bank, under the label Easy Paisa, which was begun in Q4 2009. While in India, State Bank of India (SBI) provides bank accounts, deposit, withdrawal and remittance services, micro-insurance, and micro-finance facilities to its customers through mobile banking (Thomas, 2010). Even though mobile money has not been well defined in literature it can be said to include all the various

initiatives (long-distance remittance, micro-payments, and informal air-time battering schemes) aimed at bringing financial services to the unbanked using mobile technology (Jenkins, 2008). The mobile financial services provide convenience and promptness to customers along with cost savings, banks are also interested in expanding their market through mobile services.

Mobile financial services' basic qualities can help the unbanked overcome barriers and reap the benefits of financial services. MFS can be used by nearly everyone at any time of day or night and from anywhere, eliminating the accessibility issues presented by traditional banking. In addition, MFS provides secure services at a low cost (Ivatury & Mas, 2008). Social benefits include the supplementing of incomes through remittances, providing a safe means to store income during good times, and access to insurance/pensions. These impacts lead to larger social benefits, such as a reduction in financial exclusion, an increase in the poor population's resilience to shocks, and the improved ability to keep children in school should a financial shock occur. MFS can help the poor prepare for and respond to shocks, including natural disasters. One such example is Kenya MPesa's UAP Insurance, which insures poor farmers through mobile phones against weather-induced crop failures.

Statement of the Problem

A fundamental assumption of most recent research in operations improvement and operations learning has been that technological innovation has a direct bearing on performance improvement (Upton and Kim, 2009). Only financial institutions that are able to adapt to their changing environment and adopt new ideas and business methods have guaranteed survival. According to Goh, (2002) around half of the world's population is deprived of banking and financial services. The situation of a large pool of unbanked especially in the rural areas has partly developed because of the high cost of maintaining bank branches and low volume of transactions in the rural areas, which makes branch based banking in such areas unviable. Financial institutions, which have had difficulty providing profitable services through traditional channels to poor clients (Ivatury & Mas, 2008), which lowers the costs involved in serving customers.

Despite the enormous investment in the many MFS products in the market, very few have obtained a recognizable traction level. There are only a few successful or promising products, giving an impression of dampened momentum in the sector. Some initiatives which were launched with a lot of hope have since closed down while others have redefined their business models rather too swiftly at advanced stages, giving an impression of lack of clear understanding of the consumers and their needs, and the dynamics of the MFS, Banking Regulation and Supervision Agency (2011).

The number of clients using the mobile services in the microfinance sector is increasing at an impressive rate an average of 196.7% over the two year period Dec 2009-Dec 2012, reaching about 1.2 million of total customers from the sample under consideration. In terms of means of payments other than cash and other than mobile money, the sector seems to be innovating at a slow pace most probably also in relation to weaker demand for such services, as only 14.8% of survey respondents offer debit card usable in ATMs and merchant outlets to selected costumers, while 3.7% offer credit cards to its customers. When excluding banks the percentages drop further. To the best of the researcher's knowledge, no study has investigated the effects of mobile financial services on performance of microfinance institutions in Kenya (annual report on

microfinance sector in Kenya III, 2012). It is in this light that the current study seeks to fill the existing gap by carrying out an investigation into the effects of mobile financial services on the performance of microfinance institutions in Kenya with a focus on selected Microfinance Institutions in Kenya.

Objectives of the Study

General Objective

The general objective of this study was to investigate the influence of mobile financial services on the performance of selected microfinance institutions in Kenya.

Specific Objectives

This study was guided by the following specific objectives:

- i. To establish the influence of M-insurance on the performance of MFI's.
- ii. To determine how M-savings affects the performance of MFI's.
- iii. To examine the influence of M-credit on the performance of MFI's.
- iv. To assess the effects of SMS banking on the performance of MFI's

Literature Review

Theory of information production and contemporary banking theory

Diamond (1984) suggested that economic agents may find it worthwhile to produce information about possible investment opportunities if this information is not free; for instance surplus units could incur substantial search costs if they were to seek out borrowers directly. There would be duplication of information production costs if there were no banks as surplus units would incur considerable expenses in seeking out the relevant information before they commit funds to a borrower. Banks enjoy economies of scale and have expertise in processing information related to deficit units (borrowers). They may obtain information upon first contact with borrowers but in real sense it's more likely to be learned over time through repeated dealings with the borrower. As they develop this information they develop a credit rating and become experts in processing information. As a result they have an information advantage and depositors are willing to place funds with a bank knowing that this will be directed to the appropriate borrowers without the former having to incur information costs.

Bhattacharya and Thakor (1993) contemporary banking theory suggests that banks, together with other financial intermediaries are essential in the allocation of capital in the economy. This theory is centered on information asymmetry, an assumption that "different economic agents possess different pieces of information on relevant economic variables, in that agents will use this information for their own profit" (Freixas and Rochet 1988). Asymmetric information leads to adverse selection and moral hazard problems. Asymmetric information problem that occurs before the transaction occurs and is related to the lack of information about the lenders characteristics is known as adverse selection. Moral hazard takes place after the transaction occurs and is related with incentives by the lenders to behave opportunistically.

Innovation diffusion theory

Mahajan and Peterson (1985) defined an innovation as any idea, object or practice that is perceived as new by members of the social system and defined the diffusion of innovation as the process by which the innovation is communicated through certain channels over time among members of social systems. Diffusion of innovation theory attempts to explain and describe the mechanisms of how new inventions in this case internet and mobile banking is adopted and becomes successful Clarke (1995). Sevcik (2004) stated that not all innovations are adopted even if they are good it may take a long time for an innovation to be adopted. He further stated that resistance to change may be a hindrance to diffusion of innovation although it might not stop the innovation it will slow it down.

Rogers (1995) identified five critical attributes that greatly influence the rate of adoption. These include relative advantage, compatibility, complexity, triability and observability. According to Rogers, the rate of adoption of new innovations will depend on how an organization perceives its relative advantage, compatibility, triability, observability and complexity. If an organization in Kenya observes the benefits of mobile and internet banking they will adopt these innovations given other factors such as the availability of the required tools. Adoption of such innovations will be faster in organizations that have internet access and information technology departments than in organizations without.

Empirical Review

M-insurance

U.S. insurance companies continue to face an uncertain future. Evolving regulatory requirements, a still-shaky economy, and more demanding consumers combine to present a potent set of challenges to today's insurers. While weaker companies continue to shake out, remaining contenders must realize that survival and success will depend largely on their willingness to innovate (Nasikye, 2009).

Insurers are not known for eagerly embracing new technologies; however, it's well past time to include mobile and wireless solutions as key components of any growth strategy. Handing out a smartphone to every agent does not constitute a mobile strategy. Mobile technology can help save money, mitigate risk, and increase productivity. It can also attract new customers and retain current policyholders. Ever-more powerful data networks, mobile devices, and application software solutions are being packaged into attractive products that promise fast, hard-dollar ROI. And top-tier mobility vendors ensure that today's wireless solutions are more affordable, easier to use, and quicker to deploy. Insurance companies know that they have to do a better job of managing risk, controlling expense, and creating new products. Mobile solutions should be an integral part of achieving these initiatives (Porteous, 2006).

Today's consumer environment is rapidly changing and tech-savvy consumers are already using the Internet as a channel for engaging with insurance firms. A growing number of mobile customers are also now engaging with insurers via the mobile Web for policy administration, claims, and bill paying. For instance, US based financial services provider USAA saw the usage of its mobile tools grow by 127% in 2011 versus 2010. During this period, usage of its "Autocircle" mobile insurance app spiked as more consumers used it to shop, finance, insure a new vehicle and even used it for paying bills and reporting insurance claims through their smart

phone. With growth in smart phones and unlimited data packages being important drivers in the ubiquity of the mobile internet, mobile insurance is now at a tipping point for growth.

M-Saving

M-PESA, the first mobile money system in Kenya, was originally developed primarily as a money transfer device and was attractive because it allowed people to send remittances across distance at low cost. The system has become popular for other uses, including storing credit. The term —mobile savings has been used to describe this phenomenon.

There is difference between two types of mobile savings: Basic mobile savings. This is simply the use of a standard mobile money system such as M-PESA to store funds. Basic mobile savings do not earn interest, bank-integrated mobile savings. This term refers to access to an account via mobile phone that offers financial services beyond basic money storage and transfer. Such an account might, for example, pay interest and allow access to loans or insurance. (Mas and Radcliffe 2010).

Bank-integrated mobile savings approaches have received a great deal of attention as a way to provide banking services to the poor. They have the advantage of offering access to basic banking services without requiring proximity to a physical bank branch. Instead, with a bank-integrated mobile savings account, basic banking services can be accessed via a network of mobile phone agents, which in Kenya outnumber the number of bank branches by a factor of 100 to 1 (Mas and Radcliffe 2010). Mobile savings products have increased rapidly: as of December 2010, there were at least seven systems offering some type of bank account access via mobile phone.

M-credit

In the last decade, there has been an explosion of different forms of remote access financial services, beyond branches. These have been provided through a variety of different channels, including mobile phones, Automatic Teller Machines (ATMs), point-of-sale (POS) devices and banking correspondents. In many countries, these branchless channels have made an important contribution to enhancing financial inclusion by reaching people that traditional, branch-based structures would have been unable to reach. One of the main obstacles to financial inclusion is cost: both the cost to banks involved in servicing low-value accounts and extending physical infrastructure to remote rural areas, and the cost (in money and time) incurred by customers in remote areas to reach bank branches. Agent banking is rapidly evolving and its regulation plays a central role in enabling (or sometimes limiting) its spread. Regulators are required to strike a balance between promoting financial inclusion through profitable, lower cost delivery models, and protecting consumers and the integrity of the financial system (SBP, 2009).

The Central Bank of Kenya (CBK) recognizes the financial inclusion challenges which the country faces. These include the cost of financial services and the distance to bank branches in remote areas. Part of their approach to addressing these challenges is to promote innovation through mobile financial services and to address the delivery channel costs through increased use of agent banking (Central Bank of Kenya, 2010).

In contrast to the South American countries studied, Kenya has experience with both bank-based and nonbank-based agent banking models. With respect to the bank-based model, Parliament gave approval for banking legislation to be amended to enable the use of agents in June 2009, and the regulations for agent banking were published by the CBK in May 2010 (Guideline on Agent Banking - CBK/PG/15, 2010). Prior to the 2010 Guidelines on Agent Banking, the Banking Act did not address the issue of banks using agents to deliver financial services, so the CBK approved such arrangements on a case-by-case basis. Other relevant regulations which have enabled branchless banking are (i) a 2008 regulation allowing microfinance deposit-taking institutions to use agents; (ii) a 2009 amendment to the Banking Act that allows banks to appoint agents to take deposits and perform other activities; and (iii) a 2009 AML/CFT bill which applies to both bank and non-bank institutions (CGAP, 2010).

SMS Banking

Use of SMS has become extremely popular among customers as convenient mode of transactions. The technological innovation has transformed the banking business. Banks are aggressively adopting this mode. The advantages of using SMS have given new impetus in dimensions of service quality and banks are offering new choices to customers. Cabas (2001) noted investment opportunities, reduction in costs, satisfaction of customers and competitiveness as motives to install and add new ATM to the existing network.

SMS utilizes the text messaging standard to enable mobile application based banking. It provides a mechanism for transmitting short messages to and from wireless devices. The client requests information by sending an SMS containing a service command to a pre-specified number. The bank thereafter responds with a reply containing the specific requested information. An SMS service is hosted on an SMS gateway that connects to a mobile service providers SMS centre. The major shortcoming of SMS service bank transaction is that it has not taken root because of security concerns. Fortunately this is what this research is out to achieve. One attractive side of deploying mobile banking applications on SMS is that almost all mobile phones even those that are cheap are SMS enabled (Web, 2007).

The study by Guriting and Ndubisi (2006) found the appropriateness of the TAM model in predicting online banking intention in Malaysia. The results of the study show direct relationship between perceived usefulness and intention to adopt online banking. Further, when online banking is perceived as useful, customers' intention to adopt it would be greater (Guriting and Ndubisi, 2006). This study is in line with the study by Ramayah et al. (2003) who found that perceived usefulness had direct positive effect on the intention to use Internet banking. The result supports the earlier findings by Ndubisi et al. (2001). As noted above, the study of SMS banking acceptance is indeed limited to explore, which gives a chance for the current study to explore it deeply.

METHODOLOGY

The study employed a descriptive survey study where variables were investigated without any manipulation or alteration and descriptive methodologies were used in exploring the inter-relationships between the variables. A descriptive survey design was used for exploratory studies, Paton (2002). Creswell (2002) observes that a descriptive research design is used when data are collected to describe persons, organizations, settings, or phenomena. The study aimed at observing and describing the behavior of the subjects under study without influencing it in any

way and therefore considers the descriptive research design to be the most appropriate for this study. It intends to produce statistical information about effects of mobile financial services on the performance of microfinance institutions.

Data Analysis/Findings

Inferential Statistics

Correlation Analysis

The correlation matrix indicates that microfinance institution performance is correlated with M-insurance at 1 percent significance level (.478). M- savings is positively correlated to M-insurance and M- credit at 5 percent significance level (.393) and (.427) respectively. The table also indicates that there is correlation between M- savings and M-insurance. There is also correlation between Microfinance institution performance and SMS banking.

Table 4.18 Correlations

	M-insurance	M- savings	M- credit	SMS banking	Microfinance institution performance
M-insurance	1				
M- savings	.334	1			
M- credit	.393*	.427*	1		
SMS banking	.373*	.412	.323	1	
Microfinance institution performance	.478*	.190	.137	.393*	1

*. Correlation is significant at the 0.05 level (1-tailed).

Table 4.18 shows the summary of the regression analysis that seeks to establish the relationship between Microfinance institution performance, M-insurance, M- savings, M- credit and SMS banking. With an adjusted R -squared of 0.56 percent, it means that M-insurance, M- savings, M- credit and SMS banking explain 56 percent of the variations in Microfinance institution performance. The P-value of 0.048 implies that Microfinance institution performance is significant at 5 percent level of significance.

Precisely, this study needed to establish relationship between; the sub variable (indicators) of each of the three determinants of the microfinance institution performance, as well the relationship with the four determinants. The coefficient of correlation (r), determine the degree (strength) of relationship and its value is between -1 and 1. A value 0 implies no relationship, 1 implies a perfect positive relationship, -1 means a negative relationship. An absolute value of r

between 0.5 and less than 1 implies a strong relationship between the variables. If the value r is greater than 0.3 and less than 0.5 then the relationship is moderate. The relationship is weak if the value of r is less than 0.3. Further, regression will be used to obtain an equation which describes the dependent variable in terms of the independent variable based on the regression model, (regression is used to determine the type of relationship). The study used the Pearson's Product Moment Method to determine the strength of the relationship.

The regression was calculated using the basic regression model

$$MIP = \beta_0 + \beta_1MI + \beta_2MS + \beta_3MC + \beta_4SM + e$$

Where;

MI is the M-insurance

MS is the M- savings

MC is the M-credit

SM is the SMS banking

β_0 is a constant which is the value of dependent variable when all the independent variables are 0.

β_{1-n} is the regression coefficients or change induced by MI, MS, MC and SM on MIP. It determines how much each (i.e. MI, MS, MC and SM) contribute to MIP

e is the error of prediction.

Table 4.19 Regression analysis

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	.512	.160		3.4	.022
M-insurance	1.237	.541	.082	2.438	.015
M- savings	.8593	.368	.061	2.335	.020
M- credit	1.281	.471	.490	2.720	.011
SMS banking	1.271	.357	.234	2.433	.036

Dependent variable: Microfinance Institution performance

Hence the resultant regression model is:

$$MIP = \beta_0 + 0.082MI + 0.061MS + 0.490MC + 0.234SM + e$$

The regression had a correlation coefficient (R^2) of about 0.6084 and an adjusted R^2 of 0.56. This means that M-credit, M-savings, M insurance and SMS banking explain 66 percent of the variations in Microfinance institution performance. The F-value of 4.31 with a probability of 0.00 at 5% significance level is significant indicated that the joint contribution of the

independent variables was significant in predicting the dependent variable. The Durbin Watson value of 2.09 indicated lack of serial correlation within the model.

Table 4.20 Regression model Summary

R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				Durbin-Watson
			F Change	df1	df2	Sig. F Change	
.6084	.56	.64593	2.970	3	29	.048	2.090

Table 4.20 shows the results of the regression analysis based on the sign of the coefficient and the t-ratio. From the analysis the constant has a t-ratio of 3.4. This indicates that the other factors that affect Microfinance institution performance and have not been included in the model are statistically significant in determining the Microfinance institution performance. The constant is also positively related to the performance implying that the impact of these factors which are not in the model will impact on Microfinance institution performance positively.

Discussion

It was found out that majority 110 (79%) of the respondents agreed that M-insurance influence financial performance positively while 20 (14%) disagreed to the statement. Majority 114 (82%) of the respondents agreed that M-insurance makes cost of transaction affordable to customers. Majority of the respondents 115 (82%) agreed that Profit increases through embracing M-insurance while the rest 20 (14%) disagreed. Majority 114 (82%) of the respondents agreed that transaction is easier by embracing M-insurance. Majority 123 (83%) of the respondents agreed that M-Insurance widens customer reach. The rest 17 (12%) disagreed.

Majority 122 (87%) of the respondents agreed that M-saving empowers ordinary people in the society. Majority 101 (72%) of the respondents agreed that M-saving increases the market share. Majority of the respondents 84 (59%) agreed that Profit increases through embracing M-saving while the rest 56 (41%) disagreed. Majority 109 (78) of the respondents agreed that M-saving reduces the cost of doing business. A few 28 (20%) disagreed. The researcher sought to investigate whether M-saving improves efficiency of services. It was found out that majority 99 (71%) of the respondents agreed that M-saving improves efficiency of services while 35 (25%) disagreed to the statement.

Majority 120 (86%) of the respondents agreed that M-credit leads to reorganization of competitive scope, while 20 (4%) of the respondents disagreed. Majority 127 (90%) of the respondents agreed that M-credit is a source of revenue to the bank while 13 (10%) disagreed with the statement. A majority 113 (81%) of the respondents agreed that M-credit has made operations cost effective. A few 19 (14%) disagreed. Majority 114 (83%) of the respondents agreed that M-credit has supported the banks performance, while 22 (16%) disagreed. Majority of the respondents 113 (81%) agreed that M-credit improves customer service.

Majority 109 (78%) of the respondents agreed that SMS-banking leads to increase in cost of capitalization while 23 (16%) disagreed. Majority 118 (84%) of the respondents agreed that SMS-banking leads to stability of the bank. A majority 120 (86%) of the respondents agreed that SMS banking leads to increase in profit. Majority 131 (93%) of the respondents agreed that SMS banking lower asset utilization while a few 9 (7%) disagreed.

Conclusion

The main objective of the study was to study the influence of mobile financial services on the performance of selected microfinance institutions in Kenya. From the findings above, it can be concluded that M-insurance influence financial performance positively it also makes cost of transaction affordable to customers. Profit increases and transaction in made easier by embracing M-insurance. M-Insurance also widens customer reach.

M-saving empowers ordinary people in the society and increases the market share. Profit increases through embracing M-saving and reduces the cost of doing business. M-saving also improves efficiency of services.M-credit leads to reorganization of competitive scope. It is a source of revenue to the bank and makes operations cost effective. M-credit has supported the banks performance and improves customer service. It can also be concluded that SMS-banking leads to increase in cost of capitalization and stability of the bank. SMS banking leads to increase in profit and lowers asset utilization.

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