INFLUENCE OF MOBILE BANKING SERVICES ON THE FINANCIAL PERFORMANCE OF DEPOSIT TAKING SAVINGS AND CREDIT CO-OPERATIVES IN MERU COUNTY, KENYA

Waari, D.[1]* and Munoru, E.[2]
[1] Department of Marketing and Logistics, Moi University, Kenya; Email: dnderius@gmail.com
[2] Department of Co-operatives and Community Development, Cooperative University, Kenya

ABSTRACT
This paper developed an original framework to explore the direct effect of mobile banking services on the financial performance of deposit taking Savings and Credit Cooperatives (SACCOs). The study applied two original concepts – technology adoption and performance to develop an integral model that explores the growth of an organization. The researchers employed empirical methods, encompassing utilization of questionnaire survey to verify the hypotheses and explore their managerial and theoretical implications. This study has summarized literature on mobile banking services and customer satisfaction into a new managerial framework of organizational performance framework. It utilized new arrangement of two constructs; technology adoption and mobile service, to develop an original framework that enhances organizational performance. The study adopted a descriptive research design and data was collected from the top management of the 11 deposit taking SACCOs. This study established a positive and significant relationship between mobile banking services and financial performance of the deposit taking SACCOs. Although past research has highlighted the relevant issues about organizational performance, few studies have explored this phenomenon within the financial sector in Sub-Saharan context. Therefore, this paper developed the research framework of mobile phone money to fill the research gap specifically in Kenya Financial industry context.
Keywords: Mobile banking, financial performance, Deposit taking SACCOs

INTRODUCTION

There has been a continued change in the landscape of service process and provision within the commercial organizations in the last three decades. This has been influenced by the adoption of information, communication technology aiding in faster accessibility and personalization of services. Mobile banking is one of the outcomes of utilization of ICT in organizations more so in the financial sector and according to Lyman, Pickens, and Porteous, (2008), it refers to the access of banking services and facilities using electronic mobile devices such as mobile phones and Personal Digital Assistance (PDA's).

Majority of the surveyed SACCOs are riding on the opportunities afforded by ICT through innovation of products that offer a wide range of services, leading to increased efficiency, thus gaining competitive edge within the market. In addition, M-Banking is defined as any transaction between single or multiple parties, initiated or completed through mobile access mediated through computer networks aided by electronic device such as a phone to transfer ownership rights to the use of goods and services (Tiwari *et al*., 2006).

According to Tiwari *et al*., (2006) mobile banking is usually carried out through Short messaging services (SMS) or via mobile internet. The other option is to download a mobile device m-banking application to carry out financial instructions. There is a distinction between M-Banking and mobile payments where the latter refers to payment of goods and services at the point of sale or remotely (Kim, Mirsobit, & Lee, 2010). Further, M-Banking may be classified into two forms the transformational or additive, where the fore means provision of banking services through electronic mobile devices to the unbanked and the latter the m-banking is an additional channel that facilitates financial services for the already banked.

The Purpose Study

The purpose of the present study is to establish the effect of mobile banking services on the performance of Deposit Taking SACCOs. The research question forms a linear model mechanism that addresses the relationship between mobile banking services and financial performance

LITERATURE REVIEW

Mobile Banking Transactions Volume

Salzaman et al., (2001) argued that, most recently, financial institutions, payment system providers, and mobile operators have begun experimenting with branchless banking models where agents such as airtime vendors, gas stations, and shopkeepers, register new accounts, accept client deposits, process transfers, and issue withdrawals using a client's mobile phone then communicate transaction information back to the telecommunication provider or financial provider.

This enables clients to send and receive electronic money wherever they have cell coverage. Ndirangu (2014) notes that the volume of deposits in the banking sector has increased with the introduction of mobile banking in his study on the effect of mobile banking on the performance of commercial banks in Kenya. A study by Ndirangu (2014) established that there is a significant and positive relationship between the m-banking volume of deposits and financial performance of commercial banks. The study collected data on the frequency of mobile banking transactions undertaken by deposit taking SACCOs and established their effect on the financial performance of the organization.

Mobile Banking Services Products

The financial sector thrives on the ability to continuously innovate and regular introduction of custom designed products and services to the market. The sector must continuously adapt to the changing consumer needs, tastes and preference (Ndung'u, 2013). The innovations in the mobile phone technology maybe inform of mobile applications that help bank customers to carry out their financial transactions expeditiously (Chumba, 2015).

A study by Ndirangu (2014) points out the various mobile banking products like; investments through mobile, m-payments, funds transfer and exchange of forms of money. This is reiterated and confirmed by Abong'o (2016), the influence of mobile phone banking on the performance of commercial banks, establishing a positive and significant relationship between exchange of forms of money, investment of monies through mobile phones and financial performance of commercial banks.

According to Karjaluoto (2002) mobile products and services could be referred using the terms M-banking, M-payments, M-transfer and M-finance which are a set of applications that facilitate people to use their mobile telephones to manipulate their bank accounts, store value in an account linked to their handsets, transfer funds or even access credit or insurance products.

Each of the terms offers customers a unique product that can be exploited by an organization or banking agent to make profit. The products have enhanced accessibility to financial service in both developed and developing world. The mobile platform offers a convenient additional method for managing money without handling cash.

According to Njiraini & Anyanzwa, (2008), the Kenya M-Banking has seen development of innovative products like M-Pesa which has eased money transfer services even to the remotest areas of the country. The credit facilities like Tala and Branch that are powered through mobile phones have caused a disruption in the financial credit market, making it possible for those even without bank accounts to access credit facilities. M-Pesa has induced transformations and change of tact in the credit industry leading to strategic partnerships between mobile phone service providing companies and financial institutions. In some cases, firms have partnered with M-Pesa to offer an integrated service.

Mobile Banking Short Messages Services (SMS)

The SMS Banking is a mobile technology service designed to allow customers or users of mobile phones registered with financial institutions to request and receive banking services or information via Short Message Services (SMS) in a timely and cost effective manner (Brian, George, & Andy, 2011; Nankwo, Osuji, & Orji, 2013). According to Brian *et al*., (2011) financial institutions are experiencing a higher rate of adoption and usage of SMS-based mobile banking due to its availability in most mobile phone technologies, ease of use, privacy and convenience to the user.

According to Brian, George, and Andy (2011), SMS banking services may use either to push or pull messages. Push messages are those that a bank sends out to a customer's mobile phone, without the customer initiating a request for the information.

Basically, a push message could be a periodic account balance report, reporting of salary and other credits to the bank account, successful or un-successful execution of standing orders, successful payment of a cheque issued on the account, insufficient funds, large value withdrawals on an account, large value withdrawals on the ATM or electronic funds transfer on debit cards, large value payment on a credit card or out of country activity on a credit card, one-time password and authentication, alert that some payment is due, alert that e-statement is ready to be downloaded, alert on loan guarantee, and loan approval status, among others.

Pull messages are initiated by the customer, using a mobile phone, for obtaining information or performing a transaction in the bank account. Examples of pull messages include an account balance enquiry, mini statement request, bill payment, transfers between customer's own accounts, for example moving money from a savings account to a current account to fund a cheque, stop payment instruction on a cheque, requesting for an credit card or ATM card to be suspended, de-activating a credit or debit card when it is lost or the PIN is known to be compromised, foreign currency exchange rates enquiry, fixed deposit interest rates enquiry among others (Osuji & Orji, 2013).

THEORETICAL REVIEW

Innovation Diffusion Theory

The innovation diffusion theory was introduced by Rogers in 1962 and tries to explain how an innovation is diffused among users over time. It also helps to understand customers‟ behavior in the adoption or non-adoption of an innovation.

The theory depicts that the adopters of any innovation follow a bell-shaped distribution curve which may be divided into five parts as innovators, early adopters, early majority, late majority and laggards. According Invatury & Mas, (2008) the adoption and use of mobile banking has the potential to extend the limited nature and reach of the formal financial sector to the poor and rural population in Africa. Most of the existing literature is from the developmental/practitioners' arena with a few scholarly studies emerging. By applying the traditional technology acceptance models and frameworks to the adoption of transformational mobile banking services, this study aims to bring the discussion to the mainstream information systems literature. This theory was used to study how various new mobile banking products affects financial performance of deposit taking SACCOs.

Research Questions and Conceptual Model

Based on the literature review the current study proposed the following research questions.

i. What are the effects of mobile banking transactions volume on the financial performance of deposit taking SACCOs in Meru County?
ii. To what extent do mobile banking transaction products influence the financial performance of deposit taking SACCOs in Meru County?
iii. What are the effects of mobile banking short messages services (SMS) communication on the financial performance of deposit taking SACCOs in Meru County?

Figure 1 below depicts the conceptual model tat guided the present study.

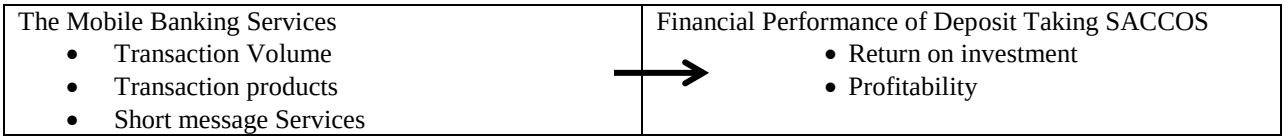

Figure 1: The proposed conceptual model

RESEARCH METHODOLOGY

The study was designed to establish the influence of mobile banking services to financial performance of deposit taking SACCOs. The study adopted a descriptive research design as it has the ability to gather data regarding various concepts to describe the mobile banking services and their effect on financial performance of deposit taking SACCOs. The study focused on all the 11 registered deposit taking SACCOs in Meru County-Kenya. The target population was the top management of the registered deposit taking SACCOs and due to the population size the study opted for a census methodology.

RESULTS

Response Rate and Descriptive Statistics

There were 44 questionnaires that were distributed to the respondents and only 39 that were returned. This represented 88.64 % response rate. The returned questionnaires had credible information and therefore qualified for consideration in the analysis achieving a response rate of 88.64%.

The 5 responses which constitute 11.36% were non-responsive. The descriptive analysis revealed that the majority of respondents were male 21 (53.8%), while female respondents were 18 (46.2%). The study also shows, 6 (5.4%) had obtained Certificate qualifications, 14 (35.9%) had Diploma qualifications, 15 (38.5) had Bachelor's degree qualification, and 4 (10.2%) postgraduate degrees qualifications. On the number of years worked in the respective position, the findings show that those respondents who have been in their respective SACCOs for 1-5 years were 46.2% of the respondents, 6- 10 years were 33.3%, 11-15 years were 15.4 % of the participants while those over 15 years were 5.1% of the respondents.

Scale Reliability and Correlation Analysis

The study applied Cronbach alpha to test the reliability of the research instrument; the procedure was carried out through SPSS version 21. The output as demonstrated in Table 2 indicates that all constructs achieved alpha values of more than 0.70 as advised by (Nunnally, 1978). The findings revealed that financial performance had a Cronbach alpha of 0.72; m-banking transaction volume had 0.77, m-banking transaction products had 0.74, while m-banking short message services had the highest at 0.78.

The relationship between M-Banking Services Transaction Volume and financial performance was at r

= 0.342, $P<0.05$, while that of financial performance and M-Banking Transaction Products was r = 0.256, $P<0.05$ and that of financial performance and M-Banking Short Message Services was r = 0.466, $P<0.001$. In summary, the findings provide strong support for reliability and correlation assumptions among all scales as indicated in Table 2.

Table 1: Demographic characteristic of respondents

Variables		Frequency	Percentage
Gender	Male	21	53.8
	Female	18	46.2
Level of Education	Certificate	6	15.4
	Diploma	14	35.9
	Undergraduate	15	38.5
	Post Graduate Degree	4	10.2
Number of Years in the Position	1 – 5 years	18	46.2
	6 – 10 years	13	33.3
	11 – 15 years	6	15.4
	Over 15 years	2	5.1

Table 2: Results for reliability and correlation

Construct	No. of Items	Cronbach Alpha	Correlation		
Financial Performance	7	0.72			
M-Banking services transaction volume	8	0.77	0.342^{*}		
M-Banking Transaction Products	7	0.74	0.256^{*}	0.524^{*}	
M-Banking Short Message Services	7	0.78	0.466^{**}	0.137^{**}	0.432^{*}
Overall Items and their Reliability	**29**	**0.82**			

$^{**}P<0.001$, $^{*}P<0.05$

The following table displays the results for the regression model summary

Table 3: Regression model summary

Model	R	R square	Adjusted R square	Standard error of estimate
1	0.623^{b}	0.469	0.432	0.1984

The following table displays the results from the regression analysis.

Table 4: Regression coefficients table

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	Constant	2.41	1.657		1.455	0.26
	Mobile banking transaction volume services	0.070	0.226	-0.053	-0.308	0.031
	Mobile banking transaction product	0.675	0.573	0.213	1.177	0.024
	Mobile banking SMS communication	0.093	0.201	0.089	0.465	0.046

Table 4 above shows the beta coefficients for the actual regression equation. The focus was mainly the unstandardized coefficients, as this section includes a y-intercept term (beta zero) as well as a slope term (beta one). The standardized coefficients were based on re-scaling of the variables so that the y-intercept is equal to zero.

From the data in Table 4, the extracted regression equation is as follows:

Yi = 2.41+.070X1+ .675X2 + .093X3

The study established that financial performance of deposit taking savings and credit cooperatives in Meru County would be at 2.41 holding the effect of mobile banking transactions volume services, effect of mobile

banking transactions products and the effect of mobile banking short messages services at constant.

The study further revealed that a unit increase in the effect of mobile banking transactions volume services would lead to an increase in financial performance in Sacco profitability and return on investment of SACCOs in Meru County by a factor of 0.070; a unit increase in effect of mobile banking transactions products will lead to increase in financial performance of deposit taking SACCOs by a factor of 0.675; a unit increase in the effect of mobile banking short messages communication services would lead to increase in performance of deposit taking SACCOs by a factor of 0.093.

In the computation of the coefficients, the p-value on the effect of mobile banking transactions volume services was 0.031which was < 0.05 an indication that mobile banking transactions volume services has a significant effect on financial performance of the deposit taking savings and credit cooperatives.

The *P*-value on effect of mobile banking transactions products was 0.024 which was <0.05 which indicated a significant effect on financial performance of SACCOs while the effect of mobile banking short messages communication services had *P*=0.046 which also indicated a significant impact on financial performance of SACCOs. Thus the effect of mobile banking transactions products had the major impact on financial performance of the SACCOs while the effect of mobile banking short messages communication services had the least effect on the financial performance of SACCOs in Meru County.

DISCUSSION

Practical Implications

The study established a positive and significant relationship between the mobile banking factors and the Deposit taking SACCOs in Meru County. This calls for the SACCOs to harness mobile banking services to enhance their financial performance. The mobile banking transaction product has the highest coefficient in the regression analysis an indicator of the need to continue innovating and nurturing more innovative products. This would contribute in meeting the organization objectives and vision. This calls for adoption of technology oriented products towards driving the SACCOs activities and core business.

Limitations and Future Directions

There are several limitations affecting this study that should be taken into consideration when interpreting the results of the study. The first limitation is the generalizability of the study given that the study focused on the savings credit and cooperative societies. To overcome these hurdle future studies should encompass all financial institutions thus giving an assurance of an inclusive target population. This being a cross-sectional study results in limitations of establishing causality between the mobile banking services and SACCOs performance. There is need to adopt longitudinal research design in future to establish whether there is evidence of causal occurrence.

CONCLUSION

In this paper we analyzed the influence of mobile banking services to financial performance of Deposit taking SACCOs. A key finding in the study was that the technology and innovation were very important for the SACCOs to maintain their competitive advantage in the market. The nature of the innovative products introduced into the market by the financial organization was found to play the greatest role in determining the profitability of the SACCOs. There is need for concerted efforts by stakeholders within the market to create awareness of the need of each of the mobile phone owners to register with an m-banking services offered by various financial institutions in the country. This will greatly reduce the rate of those that do not have financial services access in the country.

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