

INFLUENCE OF ELECTRONIC BANKING ON PERFORMANCE OF COMMERCIAL BANKS IN KAKAMEGA COUNTY

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Abstract: Technology advancement has played an important role in improving service delivery standards in the Banking industry in Kenya and the entire world. E-banking, also known as internet banking, virtual banking or online banking is an electronic payment system that enables customers of a bank or other financial institution to carry out a range of financial transactions through the financial institution's website. The objectives of this study was to assess the influence of mobile banking services on performance of commercial banks in Kakamega County; ascertain the influence of online banking on performance of commercial banks in Kakamega County. The research design adopted is explanatory design which predicts the likelihood of a phenomena occurring given the presence of an event. The sampling technique used is stratified purposive random sampling. Data was collected from primary sources. Primary data was collected using questionnaires. The instrument was administered by the researcher on the selected respondents. Content validity, construct validity was established. Data was edited, coded and then analyzed using SPSS version 20. The findings indicated that Mobile banking $R=0.616$, $P=0.000$ has significant influence on the performance of commercial banks in Kakamega County. Mobile banking significantly accounts up to 38.0% variation in the performance of commercial banks. The study recommended that commercial bank management need to decrease electronic banking bill payment services in commercial bank so as to enable customers to undertake transaction through electronic banking. The banks should also enhance customer security and privacy to reduce fraud and cyber-crime associated with electronic banking.

Keywords: Electronic Banking, Mobile Banking, Performance, Commercial Banks.

I. INTRODUCTION

Technology advancement has played an important role in improving service delivery standards in the Banking industry in Kenya and the entire world. The internet facility has transformed the business world in terms of managing business. According to Abu Shanab (2010), internet has transformed the entire business pattern for people as well as for businesses. E-banking is an electronic connection between bank and customer in order to prepare, manage and control financial transactions (Salehi & Zhila, 2008). E-banking, also known as internet banking, virtual banking or online banking, is an electronic payment system that enables customers of a bank or other financial institution to carry out a range of financial transactions through the financial institution's website (Auta, 2010). The online banking system will typically connect to or be part of the core banking system operated by a bank and is in contrast to branch banking which was the traditional way customers accessed banking services

According to Hanson and Kalyanam (2007), e-banking has popularised with very fast pace and as people now use ATMs. These mobile services facilitate customers to check the balance and transactions of their accounts, pay invoices and transfer funds between accounts, and also confirm the direct payment via the phone's micro browser (Mallat, Rossi & Tuunainen, 2004). Mobile banking is the provision of banking services using the mobile phone. In keeping with the advancement in technology, commercial banks have in the recent past undergone major technological leaps in the provision of banking services by adoption of mobile banking technology. This model of banking is particularly useful in providing efficiency and accessibility of banking services without the barriers of location and time.

According to Insight and Gothenburg (2010), the number of mobile banking users globally is forecasted to 894million in 2015, exceeding the use of online banking. All these are potential customers for the global banking industry. This new technology is changing every aspect of daily life and bringing new opportunities in many areas. Similar view is seen in (Fjermestad & Romano, 2006). Banks are also providing mobile banking services to enable customers to transact using mobile technologies such as phones and smart phones (Barnes & Corbitt 2003; Hoehle & Huff 2009). According to Mas and Kumar (2008), it is very difficult to have individual services unique to a bank because they are easily replicable. The mobile banking platforms allow increased penetration by banks to areas not viable for physical presence that involves huge investments in physical infrastructure. Banks are also able to sell more services to existing customers through mobile banking thus increasing the banks share of wallet. Further, the banks most valuable customers, who constitute about 20% of all customers and account for about 80% of the banks business, can be retained through the increased efficiency and value brought about by mobile banking, online banking and agency banking.

Mobile banking in Kenya being a recent platform, there is need to understand the main services can be channelled through this platform, how they should be packaged and what precautions need to be taken in using this technology. Kariuki (2014) did a study seeking to improve the uncommon empirical knowledge on the acceptance of e-banking in Kenya, in his study he wanted to determine how awareness by consumers affect adoption of internet banking and to determine to what extent website features affect adoption of internet banking. The result showed that literacy level is not an obstacle to the banks services and the middle aged people have most successfully accepted the internet services. The CBK has been on the forefront of allowing banks to use internet banking platforms to enhance the financial services which customers are able to access and enhance the quality of these services. This move by the Central Bank of Kenya has had a great impact on the products and services offered by Kenyan banks making them some of the globally acclaimed in adoption of the innovations such as mobile and internet banking (CBK Report 2015).

There is also a growing partnership in financial institution and non-financial service providers where consumers through use of e-banking and other e-commerce services such as M-banking can transact and clear utility bills through shared banks' platforms. In the recent years banks have developed innovative products and offered a wider range of services in an effort to increase customer satisfaction and efficiency. Thus, banking services are being offered through electronic delivery channels. M-banking which provides banking services via mobile phones and personal digital assistants is among the newest services to be offered (Mari, 2003; Saleem & Rashid, 2011). Mobile banking is evolving as the new front on which banks can differentiate their service delivery. Banks and other financial service companies have an opportunity to generate new business, attract or retain customers, control costs and gain other advantages by deploying applications for mobile phone users (Johnstone, 2010). E-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 (Mari, 2003; Anyasi & Otubu, 2009; Ayo, Adewoye & Oni, 2010).

In the banking sector the level of competition is cut-throat and the opportunities offered by the new technology, though accessible by all, can be exploited to obtain an edge in the industry. Until recently, studies of most banks are based on strategy of process integration, service bundling, scale economy and monopolization of extensive branch network (Nehmzoe, 1997). However, new developments in the mobile and related technology are questioning the basic assumption of this integrated model. The growth of wireless technology has increased the number of people using mobile devices and online banking channel and accelerated the development of mobile service conducted with these devices. As competition in the banking industry intensifies, each player in the industry is positioning himself to take advantage of these developments to get ahead of the rest. This research sought to establish the influence of mobile banking on performance of commercial banks in Kakamega County. It sought to provide such learning to banks in order to help in increased efficiency and quality in their services delivery and hence their performance.

A. Statement of the Problem

Major leaps in technological innovations have been seen in various sectors of the economy. These are meant to increase the availability, affordability as well as the efficiency of services sought by the customers. In banking, one such innovation was the advent of internet banking. In 2013, standard chartered bank had an enormous loss in the Kenyan market, which was linked to e banking. This had a negative effect in terms of profitability to the bank (CBK report 2015). Sumra, Manzoor and Abass (2011) carried out a study on the impact of e-banking on the profitability of Pakistani banks. The study was in nature assessing the qualitative factors in determining the impact of e banking. It also discussed the effect of customers' literacy on provision of services from banks' perspective. The study was conducted in 12 Pakistani

banks from three cities. The results showed that e-banking has increased the profitability of banks; it has enabled the banks to meet their costs and earn profits even in the short span of time. This contradicts the results by Siam (2006) who investigated the role of electronic banking services on the profits of Jordanian banks. He investigated the reasons behind providing electronic banking services through the internet and their impact on banking services in general and banks profitability. The study was done in 20 commercial banks operating in Jordan. He concluded that the effect of electronic banking services on banks profitability is negative in the short run because of costs and the investments the bank carry in order to have the technical and electronic infrastructure in place, training the employees to be skilled and competent. Past research shows that branchless banking has increased financial inclusion by increasing access to financial services for the previously unbanked (Omwansa, 2009). Malhotra and Singh (2009) studied the impact of internet banking on bank performance and risk in India. The study was done on 85 commercial banks over the period 1998-2006 which represented nearly 39 percent of total scheduled commercial banks in India. Using information drawn from the survey of 85 scheduled commercial bank's websites, the results showed that nearly 57 percent of the Indian commercial banks are providing transactional Internet banking services. The univariate analysis indicated that internet banks are larger banks and have better operating efficiency ratios and profitability as compared to non-Internet banks. Internet banks rely more heavily on core deposits for funding than non-Internet banks do. However, the multiple regression results reveal that the profitability and offering of internet banking does not have any significant association, on the other hand, internet banking has a significant and negative association with risk profile of the banks. Since the study was based on only internet banking, the authors recommended to extend the study to cover other forms of electronic banking

B. Research Objective

To study sought to determine the influence of mobile banking on performance of commercial banks in Kakamega County

C. Research hypothesis

The study sought to test the following null hypothesis; Mobile banking has no significant influence on performance of commercial banks in Kakamega County.

II. LITERATURE REVIEW

A. Theoretical Review

This study was based on the 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 & 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.

B. Mobile Banking

M-banking which provides banking services via mobile phones and personal digital assistants is among the newest services to be offered Mari, (2003); Saleem and Rashid,(2011). Mobile banking involves the use of mobile phone for settlement of financial transactions. It supports person to person transfers with immediate availability of funds for the beneficiary. Mobile payments use the card infrastructure for movement of payment instructions as well as secure Short

Message Service (SMS) messaging for confirmation of receipt to the beneficiary. Mobile banking is meant for low value transactions where speed of completing the transaction is a key.

The services covered under this product include account enquiry, funds transfer, changing of passwords and bill payment which are offered by few institution (Sathye,1999).With the emerging wave of information driven economy, the banking industry in Kenya has 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 phone use in rural Kenya. This has resulted into a higher rate of transactions through alternative delivery channels like mobile banking.

Standard Chartered in 2009 launched its mobile banking in seven markets in Africa. In the Kenyan market it offers a number of services on a unique, user-friendly platform called Unstructured Supplementary Services Data (USSD) and is only available on GSM carrier networks which enable customers to access banking in real time, anywhere in the world, through their mobile phones. The platform is a convenient menu-driven application that is not dependent on specific customer handsets and does not need to be downloaded.

Telephone and PC banking is a facility that enables customers, via telephone calls, find out about their position with their bankers by merely dialing the telephone numbers given to them by the banks. In addition, the computers on the phone would require special codes given to the customers as a means of identification of authentic users before they can receive any information they requested for. Telephone and PC banking brings the bank to the doorstep of the customer, it does not require the customer to leave the premises (Jonathan & Camilo, T. (2008).

The remarkable gains made towards mobile phone access have seen a steady progress in the scope of innovation emanating from exploitation of these fairly new technologies. What has characterized the Kenyan mobile landscape is a rapid uptake of various services key among them the mobile based products, Mobile banking is one innovation which has progressively rendered itself in pervasive ways cutting across numerous sectors of economy and industry (Njenga,2008).

The card system is a unique internet payment type. Smart cards are plastic devices with embedded integrated circuit being used for settlement of financial obligations. Depending on the sophistication, it can be used as a Credit Card, Debit Card and ATM cards. The cards are by use of the internet loaded with cash value and can be carried around like cash and store information on a microchip. The microchip contains a “purse” in which value is held on the internet. In addition, it also contains security programs which protect transactions between one card user and the other. It can also be transferred directly to a retailer, merchant or any other outlet to pay for goods and services, and like cash, transactions between individuals without the need for banks or any other third parties. Also, the system does not require central clearing, it is valued immediately (Olweny, & Shipho, 2011).

Laukkanen (2007) asserts that the mobile phone as a channel for service consumption offers enormous potential since today, a mobile phone is an integral part of customers’ lives and a growing number of these devices are also equipped with internet connection. Currently, mobile banking services enable consumers for example to request their account balance and the latest transaction of their accounts, to transfer funds between accounts, to make buy and sell orders for the stock exchange and to receive portfolio and price information.

The concept of mobile banking is similar to that of internet banking, the difference being the device used. Whereas in internet banking the device used is the PC, in mobile banking customers transact using technologies such as phones, PDAs and smart phones (Barnes & Corbitt 2003, Hoehle & Huff 2009).Indeed, mobile banking has emerged as a wireless service delivery channel providing increased value for customer’s banking transactions. However, despite its many advantages, the use of mobile phones in banking services is still in its infancy and the internet retains its position as the leading channel in electronic banking (Laukkanen, 2007). Previous studies indicate that factors contributing to the adoption of mobile banking are related to convenience, access to the service regardless of time and place, privacy and savings in time and effort (Suoranta, 2003).

C. Performance of Banks

Profit is the ultimate goal of commercial banks hence all the strategies designed and activities performed thereof are meant to realize this grand objective. Evidence suggests that the first benefit that results from e-banking for financial institutions is improved customer service to existing customers. This has been the experience of KWFT in Kenya once it linked into the M-PESA platform for repayment services for its customers (Kigen, 2011). Before M-PESA was used, a KWFT customer had a lengthy repayment process. The client would carry cash to the group gathering location. Meetings would be long as each customer’s cash was counted and recorded by the loan officer. This could take a long time since the

treasurer had to inspect that the notes are not fake. The treasurer would travel with the cash to the bank and deposit it. This process made the customers to spend a lot of time in the process besides the great security risk of walking around with cash.

An M-banking service enables the customers to deposit money directly from their phones to the respective bank accounts. The studies on the speed and convenience of M-banking services are numerous and have largely focused on the benefits to the customers with little said about the benefits to the commercial banks and other m-banking service providers. The studies again, do not identify the impact of the speed and convenience on the financial performance of commercial banks hence leaving a gap (Ochumo, 2007).

III. METHODOLOGY

The study design is correlational since it seeks to explore and examine the impact of e-banking on the performance of commercial banks in Kakamega County. The study targeted commercial banks in Kakamega County. There are a total of twelve commercial banks with 299 members of staff who include managers, supervisors and other support staff. In order to get a representative sample of employee respondents for the study, stratified and random sampling methods will be used in sample selection. Samples were chosen using stratified sampling to ensure each section in the banks employees is proportionally represented. For primary data Krejcie and Morgan formula was used to select 168 respondents. The study had a response rate of 83.9%. Primary data was collected using structured questionnaires. The questionnaires were administered on the employees and the selected respondents, who included employees at both the managerial and subordinate staff levels. The instrument was found to be reliable with alpha being more than 0.7 (Mobile banking=0.717 and performance=0.811). Factor analysis was also used to test the suitability of items on the questionnaire. All items had factor loading more than 0.4 therefore, they were retained. Data was collected, edited, coded and then analysed by the researcher using SPSS version 20. Descriptive data analysis techniques comprising of frequency and percentage were used. In addition, inferential analyses including Pearson correlation and regression analysis were used. Simple linear regression analysis is used to determine the influence of independent variable on the dependent variable guided by the following regression model:

$$Y = \beta_0 + \beta_1 X_1 + \epsilon$$

Where:-

Y = Performance

β_0 = Constant, showing performance in the absence of the electronic banking

β_1 = Regression Coefficients of mobile banking influencing performance

X_1 = mobile banking

ϵ = Error Term

IV. FINDINGS AND DISCUSSIONS

A. Descriptive Statistics

The sampled respondents were provided with 9 statements related to mobile banking. The respondents were required to state their level of agreement on various statements on each variable. The level of agreement ranged from 1-strongly disagree, 2-disagree, 3-fairly agreed, 4-agree and 5- strongly agree. The results are presented in Table 1

Table 1: Descriptive Statistics for Mobile Banking

No	Statements	1	2	3	4	5
1	In my organization, mobile balance inquiry has increased over the past few years since its introduction	0.0%	2.13% (3)	9.22% (13)	50.35% (71)	38.3% (54)
2	Mobile balance inquiry has increased customer loyalty in my bank	0.0%	2.84% (4)	14.89% (21)	69.5% (98)	12.77% (18)
3	There's reduced customer complaints in my bank	0.0%	2.84% (4)	8.51% (12)	53.19% (75)	35.46% (50)
4	There's increased sales volume in my bank	0.0%	1.42%	4.26%	18.44%	75.89%

			(2)	(6)	(26)	(107)
5	There's improved customer convenience in my bank	0.0%	3.55% (5)	4.96% (7)	53.9% (76)	37.59% (53)
6	There's increased mobile bill payment services in my bank	0.0%	3.55% (5)	21.99% (31)	67.38% (95)	7.09% (10)
7	In my bank, most customers seek information via mobile	0.0%	4.26% (6)	35.46% (50)	51.06% (72)	9.22% (13)
8	There has been an increase in the number of mobile loans to customers in my bank	0.0%	4.96% (7)	8.51% (12)	18.44% (26)	68.09% (96)
9	In my bank, financial transactions have increased as a result of mobile banking services	0.0%	0.0%	2.13% (3)	19.15% (27)	78.72% (111)

From Table 1, half of the respondents agreed that in their organization, mobile balance inquiry has increased over the past few years since its introduction while 38.3%(54) strongly agreed. Similarly, 69.5%(98) agreed that mobile balance inquiry has increased customer loyalty in their bank. The results also revealed that 53.19%(75) and 35.46%(50) of the respondents agreed and strongly agree that there's reduced customer complaints in their bank.

Majority of the respondents agreed that 75.89%(107) that strongly agreed that there's increased sales volume in my bank. Majority of the respondents confirmed that there's improved customer convenience in their banks as shown by 53.9%(76) and 37.59%(53) who agreed and strongly agreed. The results further revealed that 67.38%(95) of the respondents agreed that there's increased mobile bill payment services in their bank.

The results further revealed that 51.06%(72) and 9.22%(13) of the sampled respondents agreed and strongly agree that in their bank, most customers seek information via mobile. Majority of the respondents strongly agreed that there has been an increase in the number of mobile loans to customers in their bank as shown by 68.09%(96) and 18.44%(26) who agreed. Lastly, 78.72%(111) agreed that financial transactions have increased as a result of mobile banking services.

The sampled respondents were further provided with 7 statements related to performance of commercial banks in Kakamega County. The relevant results are as shown in Table 2

Table 2: Performance of Commercial Banks in Kakamega County

No	Statements	1	2	3	4	5
1	The revenue collected by my bank has increased in the past year	0.0%	0.0%	9.93% (14)	21.99% (31)	68.09% (96)
2	As a result of the increased profitability, new branches have been established in my bank	0.0%	0.0%	2.13% (3)	58.87% (83)	39.01% (55)
3	The bank's profitability can be attributed to e-banking services	0.0%	0.0%	4.26% (6)	36.88% (52)	58.87% (83)
4	I am generally satisfied with my contribution towards the growth of the bank.	0.0%	0.0%	5.67% (8)	19.15% (27)	75.18% (106)
5	My bank has been efficient in its operations	0.0%	0.71% (1)	9.22% (13)	34.75% (49)	55.32% (78)
6	E-banking has led to effectiveness of my banks' operations	0.0%	0.0%	4.26% (6)	75.89% (107)	19.86% (28)
7	In general, I am satisfied with the contribution of e-banking on the effectiveness and efficiency of my bank	0.0%	0.0%	7.8% (11)	15.6% (22)	76.6% (108)

From Table 2, majority of the respondents strongly agreed that the revenue collected by their bank has increased in the past year as shown by 68.09% (96) while 21.99% (31) agreed with a mean of 4.58 and standard deviation of .667. This implies that there is some deviation from the mean. The results also revealed that 58.87%(83) and 39.01%(55) of the respondents agreed and strongly agreed that as a result of the increased profitability, new branches have been established in their bank with a mean of 4.37 and standard deviation of 0.527.

B. Inferential Statistics

The Pearson correlation analysis was used to investigate the relationship between mobile banking and performance. The correlation strengths were interpreted using Cohen (1988) decision rules where r values from 0.1 to 0.3 indicate weak correlation, 0.31 to 0.5 indicate moderate correlation strength and greater than 0.5 indicate a strong correlation between the variables. The results are as shown in Table 3.

Table 3: Correlation of Mobile banking and Performance of Commercial Banks in Kakamega County

Correlation Coefficient (R)	.616**
Sig. (2-tailed)	.000
N	141

In determining the effect of mobile banking on performance of commercial banks, the study established a coefficient of correlation (r) as 0.616**. The results indicated that the relationship between mobile banking and performance is positive and significant. This implies that the performance of commercial banks increase with increase in mobile banking. This finding agrees with Mutua (2013) who found out that the adoption of mobile banking by commercial banks in Kenya has resulted in improved performance over the years. However, Njoroge (2014) correlation tests indicated a weak positive correlation between the performance of banking institutions and mobile banking in the country.

Regression analysis was used to tell the amount of variance accounted for by one variable in predicting another variable. Regression analysis was conducted to find the proportion in the dependent variable (performance of Commercial Banks) which can be predicted from the independent variable (mobile banking). Table 4 shows the analysis results.

Table 4: Regression Results of Mobile banking and Performance of Commercial Banks

Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	.616 ^a	.380	.376	.12030		
a. Predictors: (Constant), Mobile banking						
ANOVA^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.233	1	1.233	85.192	.000 ^b
	Residual	2.012	139	.014		
	Total	3.245	140			
a. Dependent Variable: Performance						
b. Predictors: (Constant), Mobile banking						
Coefficients^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.716	.206		13.160	.000
	Mobile Banking	.440	.048	.616	9.230	.000
a. Dependent Variable: Performance						

From the Table 4 above the value of R square was 0.380 this shows that mobile banking explains 38.0% of variance in performance of commercial banks in Kakamega County. From the ANOVA table significance of the model has a value $F(1,140) = 85.192, P < 0.01$ this shows that it's significant at 99% confidence level hence the model is feasible. This implies that mobile banking is a useful predictor of performance in the commercial banks in Kakamega County. The unstandardized regression coefficient value of mobile banking was 0.440 and significance level of $p < .001$. This indicated that a unit change in mobile banking would result to significant change in performance by 0.440.

The simple linear regression equation is as shown below

$$Y_{pf} = 2.716 + 0.440 \text{ Mobile banking}$$

Therefore, the null hypothesis was rejected since mobile banking has significant effect on performance of commercial banks in Kakamega County. These findings compare favourably with Gikandi and Bloor (2010) who concluded that cost reduction and customer related factors have emerged as the main drivers of e-banking adoption in Kenya. Mobile banking

growth is expected to continue resulting to increase in profits of commercial banks. Okiro and Ndungu (2013) revealed that among the financial institutions surveyed, commercial banks had the highest usage of internet and mobile banking

V. CONCLUSION AND RECOMMENDATION

From the linear regression results, the study concluded that Mobile banking has significant effect on performance of commercial banks in Kakamega County. An increase in mobile banking would result to significant increase in performance of commercial banks in Kakamega County. There has been increase in sales volume in the sampled banks as a result of mobile banking and financial transactions has increased as a result of mobile banking services. Therefore, mobile banking is a significant predictor of performance of commercial banks in Kakamega County. The study recommended that bank management need to decrease mobile bill payment services in commercial bank. This would result to customer loyalty which in turn would lead to increase in financial transactions undertaken through mobile banking.

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