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

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ABSTRACT

The objectives of this study were 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; assess the influence of electronic card banking on performance of commercial banks in Kakamega County and to establish the influence of telephone banking on performance of commercial banks in Kakamega County. The research design adopted was explanatory design which predicted the likelihood of a phenomena occurring given the presence of an event. The sampling technique used was stratified purposive random sampling. Data was collected from primary sources. Primary data was collected using questionnaires. The instruments were administered by the researcher on the selected respondents. Data was edited, coded and then analyzed using SPSS version 20. The findings indicated that electronic banking constructs (Mobile banking R=0.616, P=0.000, internet banking R=0.528, p=0.000, electronic card banking R=0.530, p=0.000 and telephone banking R=0.638, P=0.000) had significant influence on the performance of commercial banks in Kakamega County. Electronic banking significant accounted for 58.2% 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 electronic banking customer security and privacy to reduce fraud and cyber-crime associated with electronic banking.

Key Words: *Mobile Banking, Online Banking, Electronic Card Banking, Telephone Banking*

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, 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.

Internet banking involves conducting banking transactions such as account enquiry, printing of statement of accounts, funds transfer, payments for goods and services, etc on the internet using electronic tools such as the computer without visiting the banking hall. E – commerce is greatly facilitated by internet banking and is mostly used to effect payment. Internet banking also uses the electronic card infrastructure for executing payment instructions and for final settlement of goods and service over the internet between the merchant and the customer, currently the most common internet payments are for consumer bills and purchase of air ticket through the websites of the merchants (Littler, 2006).

According to Berg insight (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 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).

Siam (2006) stated that, banks are using the Internet as a strategic weapon, leveraging it as a distribution channel to offer complex products at the same quality they can provide from their physical branches, at a lower cost, to more potential customers, without boundaries. The online channel enables banks to offer low-cost, high value-added financial services and also benefit from the promotional opportunity to cross sell products such as credit cards and loans. In saving time and money for users, banks offer online banking as a less expensive alternative to branch banking. In addition, online banking enables banks to acquire information on consumer habits and preferences, for later marketing purposes. An expanding customer base and transaction cost savings are major benefits for banks (Siam, 2006).

Mobile banking in Kenya being a recent platform, there is need to understand the main services can be

channeled 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 extend 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

Njuguna, Ritho, Olweny and Wanderi (2012) did a study in Nairobi County to determine the factors that influence acceptance of online banking among customers of the commercial banks operating in Nairobi. Using the perceived characteristics of innovation (PCI) model and the technology acceptance model (TAM) they conducted a survey on 300 individuals. The outcome demonstrated that internet banking use in Kenya was very low with twenty five percent of the participants indicating that they enjoy banking services.

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 in12 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.

Objectives of the Study

The general objective of this study was to assess the influence of E-banking services on performance of commercial banks in Kakamega County. The specific objectives were:-

- Determine the influence of mobile banking on performance of commercial banks in Kakamega County
- Determine the influence of internet banking on performance of commercial banks in Kakamega County
- Determine how electronic card banking influence performance of commercial banks in Kakamega County
- Establish the influence of telephone banking on performance of commercial banks in Kakamega County.

LITERATURE REVIEW

Theoretical Review

Financial Intermediation Theory

Financial intermediation is a process which involves surplus units depositing funds with financial institutions who then lend to deficit units. Bisignano (1992) identified that financial intermediaries can be distinguished by four criteria. First, their main categories of liabilities or deposits are specified for a fixed sum which is not related to the performance of a portfolio. Second, the deposits are typically short-term and of a much shorter term than their assets. Third, a high proportion of their liabilities are chequeable which can be withdrawn on demand and fourthly, their liabilities and assets are largely not transferable. The most important contribution of intermediaries is a steady flow of funds from surplus to deficit units.

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.

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. Sevcik (2004) 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.

Conceptual Framework

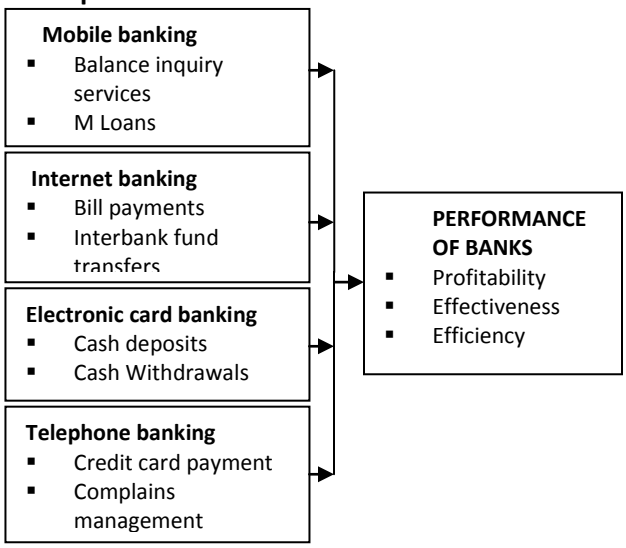

Figure 1: Conceptual Framework

Source: Author (2018)

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.

Internet Banking

Internet banking involves conducting banking transactions such as account enquiry printing of statement of account; funds transfer payments for goods and services, on the internet (World Wide Web) using electronic tools such as the computer without visiting the banking hall. Ecommerce is greatly facilitated by internet banking and is mostly used to effect payment. Internet banking also uses the electronic card infrastructure for executing payment instructions and for final settlement of goods and service over the internet between the merchant and the customer, currently the most common internet payments are for consumer bills and purchase of air ticket through the websites of the merchants (Littler, 2006).Wireless penetration rates have been on the increase and thus making internet banking technology more appropriate for conducting various activities including business transactions. This has led to an increased profitability of the alternative delivery channels (Mobile banking, internet banking and electronic card banking).

Electronic Card Banking

An electronic card is a physical plastic card that uniquely identifies the holder and can be used for financial transactions on the internet. For instance, Automated Teller Machine (ATM) and Point-of Sales (PoS) terminal are used to authorize payment to the merchant or seller (James, 2009). The various types of electronic cards include debit, credit cards; releasable cards require visiting banks for replenishment. Debit cards are linked to local bank accounts and offer immediate confirmation of payment. Credit cards can be used to link a customer to a credit line and can also be used for accessing local and international networks and are widely accepted in most countries. The underlying infrastructure and operational rules are often provided by global trusted schemes (such as visa and master card) in addition to local lines.

Telephone Banking

These are banking services which a customer of a financial institution can access using a telephone line as a link to the financial institution's computer centre.

Services rendered through telephone banking include account balance funds transfer, change of pin, and recharge phones and bills payment (James, 2009).

To use a financial institution's telephone banking facility, a customer must first register with the institution for the service. They would be assigned a customer number (which is not the same as the account number) and they may be given or set up their own password (under various names) for customer verification. Customers would call the special phone number set up by the bank and would authenticate their identity through the customer number and a numeric or verbal password or through security questions asked by a live representative. The service can be provided using an automated system, using voice recognition capability or by live customer service representatives.

Financial 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 Kumar (2010). 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.

Empirical Review

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 in12 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. The illiteracy of customers is not regarded as a major impediment in provision of their products and services. For banks, the main motive to adopt e-banking is to increase their clientage and to retain their customers. The profitability of banks has augmented in transitioning to e-banking medium. It would be important to carry out a similar qualitative research in Kenya to determine whether similar results would be obtained.

Siam (2006) 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. The sample period was between 2003 to 2006 and they interviewed 98 managers. Accounting data was used to measure banks performance using regression analysis. 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 but will be positive on the long run. Jordanian people are conservative as opposed to Kenyans who are widely known to be technology savvy. It would therefore be important to investigate whether many of the innovations in e-banking

adopted by commercial banks in Kenya has an effect in their financial performance.

Onay (2008) studied the impact of internet-banking on banks profitability in Turkey.The analysis covered 13 banks that had adopted online banking in Turkey between 1996 and 2005. By using bank specific and macroeconomic control variables, they investigated the impact of internet banking on the return on assets(ROA) and equity(ROE), the interest spread, overhead expenses and on commission and fee income controlling for systemic bank crises in the country during the timeframe. The study included time-lagged measures of internet banking adoption to exhibit the changes in effect over time. The results showed that internet banking starts contributing to banks' ROE with a time lag of two years confirming the findings of while a negative impact is observed for one year lagged dummy. The results provided some evidence that investment in e-banking is a gradual process. It would be important to carry out a similar research in Kenya since Turkey is an advanced economy compared to Kenya.

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 it's important to extend the study to cover to cover other forms of electronic banking.

Kingoo (2011) investigated the relationship between e-banking and financial performance of commercial banks in Kenya. The study was conducted in the 43 commercial banks in Kenya. The sample period was between 2006 and 2010 and used both descriptive and inferential statistics to analyze the data. The results indicated that bank performance (measured by return on assets) are explained by independent variable the e-banking measured by Investments in e-banking and number of debits cards issued to customers. Thus, there exists positive relationship between e-banking and bank performance. The study concluded that the adoption of electronic banking has enhanced Kenyan banking industry by making it more productive and effective. Since the study period was a few years ago and financial performance was measured using only ROA, it would be important to extent the study with use of other measures of electronic banking like fees and commission which is an indicator of usage by customers.

Gikandi and Bloor (2010) investigated adoption and effectiveness of electronic banking in Kenya.The results showed that there was a drastic shift in the importance attached to some e-banking drivers between years 2005 and 2009. In the 2005 survey, the number of other retail banks adopting e-banking was considered as a driver of medium importance by 70% of the banks, however, in the 2009 survey it was ranked among the extremely important drivers by a 100% of the banks. Similar observations were made in the case of competitive forces. Internet security was identified as the most important future challenge in e-banking while customer trust, privacy and awareness were recognized as challenges of great importance. The study 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 .It would be good to find out if there has been any change with the increase in competition among commercial banks in Kenya and changes in the regulatory environment.

Njuguna (2009)conducted a study on internet banking adoption in Nairobi County, Kenya between 2010 and 2011.The purpose of the study was to establish the factors that influence adoption of internet banking among the individuals who have accounts with commercial banks in Nairobi County; Kenya. Only 24.82% of the respondents use Internet banking services. This is despite the high rate of internet access recorded. They concluded that internet banking is still at its nascent stages as demonstrated by the length of usage response. The results also revealed that perceived usefulness, perceived ease of use, self-efficacy, relative advantage, compatibility, and result demonstrability have a significant association with intention to use internet banking, while risk, visibility and trialability are not significant. It would be good to find out if there has been any change with the increase uptake and usage of smart phones and tablets by Kenyans.

METHODOLOGY

The study design was correlational since it sought to explore and examine the impact of e-banking on the performance of commercial banks in Kakamega County. The respondents in the research were asked their perceptions, attitudes, behaviors or values in relation to phenomena under investigation. The study targeted commercial banks in Kakamega County. There were a total of twelve commercial banks with 299 members of staff who include managers, supervisors and other support staff (Kenya Bankers' Association, 2017). The sampling frames were the 12 commercial banks in Kakamega County. Multiple regression analysis was used to determine the influence of four independent variables on the dependent variable guided by the following regression model:

$$Y= \beta 0 + \beta 1X1 + \beta 2X2 + \beta 3X3 + \beta 4X4+\varepsilon$$

Where:-

Y = Performance

β0= Constant, showing performance in the absence of the electronic banking

B_1-β_4= Regression Coefficients of electronic banking influencing performance

X1= mobile banking

X2= internet banking

X3= electronic card banking

X4=Telephone banking

ε =Error Term

RESULTS

Mobile banking

The sampled respondents were provided with 9 statements related to mobile banking 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 had increased customer loyalty in their bank. The results also revealed that 53.19% (75) and 35.46% (50) of the respondents agreed and strongly agreed that there was reduced customer complaints in their bank.

Majority of the respondents agreed that 75.89% (107) that strongly agreed that there was 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 was 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 was 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.

Table 1: 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% (2)	4.26% (6)	18.44% (26)	75.89% (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)

Internet Banking

More than half of the respondents, 51.77% (73) strongly agreed that there's been an increase in number of new users in my bank while 33.33% (47) agreed. This implied that there was significant deviation from the mean. Similarly, 36.17% (51) and 56.74% (80) of the respondents agreed and strongly agreed that in their bank, there was increase in number of mobile transaction users. The results also revealed that 69.5% (98) of the respondents agreed that in their bank, the existing customers have made referrals, thus the new users.

The results further revealed that 38.3% (54) and 56.03% (79) of the respondents agreed and strongly agreed that in their bank, the repeat users are as a result of satisfaction with our services. Slight majority of the respondents agreed that mobile financial services had continuously been improved in my bank hence attracting new users as shown by 53.19%(75) and 37.59%(53) agreed. Similarly, 57.45% (81) and 21.28% (30) of the respondents agreed and strongly agreed that there has been an increase in bill payments through internet banking.

The results also revealed that 56.03% (79) and 21.99% (31) of the respondents agreed and strongly agreed respectively that there has been an increase of interbank fund transfers. Slight majority of the respondents strongly agreed that in their bank, customer security in internet banking is enhanced as shown by 56.03% (79). Lastly, majority of the respondents strongly agreed that in general, they were satisfied with the internet banking services provided by the bank as shown by 65.96% (93) and 16.31% (23) agreed that they were satisfied with the internet banking services provided by the bank.

Table 2: Internet Banking

No	Statements	1	2	3	4	5
1	There's been an increase in number of new users in my bank	0.0%	4.26% (6)	10.64% (15)	33.33% (47)	51.77% (73)
2	In my bank, there's increase in number of mobile transaction users.	0.0%	2.13% (3)	4.96% (7)	36.17% (51)	56.74% (80)
3	In my bank, the existing customers have made referrals, thus the new users	0.0%	1.42% (2)	12.77% (18)	69.5% (98)	16.31% (23)
4	In my bank, the repeat users are as a result of satisfaction with our services	0.0%	0.0%	5.67% (8)	38.3% (54)	56.03% (79)
5	Mobile financial services have continuously been improved in my bank hence attracting new users.	0.0%	3.55% (5)	5.67% (8)	53.19% (75)	37.59% (53)
6	In my bank, there has been an increase in bill payments through internet banking	0.0%	7.09% (10)	14.18% (20)	57.45% (81)	21.28% (30)
7	There has been an increase of interbank fund transfers.	0.0%	7.09% (10)	14.89% (21)	56.03% (79)	21.99% (31)
8	In my bank, customer security in internet banking is enhanced	0.0%	9.93% (14)	18.44% (26)	15.6% (22)	56.03% (79)
9	In general, I am satisfied with the internet banking services provided by the bank	0.0%	2.84% (4)	14.89% (21)	16.31% (23)	65.96% (93)

Electronic Card Banking

The results revealed that 73.76% (104) of the sampled respondents agreed that electronic card banking has improved operational efficiency in my bank. On the other hand, 71.63% (101) of the sampled respondents agreed that electronic card banking has created competitive advantage in my bank. Similarly, 85.11% (120) of the sampled respondents agreed that electronic card banking has improved the bank's cost effectiveness.

The results further revealed that 37.59% (53) and 56.03% (79) of the respondents undecided and agreed respectively that electronic card banking has increased customer loyalty to the bank. In addition, 19.86% (28) and 74.47% (105) of the sampled respondents agreed and strongly agree that in their bank, customers are assured of their safety while using electronic card banking. Lastly, 28.37% (40) and 50.35% (71) of the sampled respondents agreed and strongly agreed that they are satisfied with the electronic card banking services offered by the bank.

Table 3: Electronic Card Banking

No	Statements	1	2	3	4	5
1	Has improved operational efficiency in my bank	0.0%	2.13% (3)	2.13% (3)	21.99% (31)	73.76% (104)
2	Has created competitive advantage in my bank	0.0%	2.84% (4)	7.8% (11)	71.63% (101)	17.73% (25)
3	Has improved the bank's cost effectiveness	0.0%	2.84% (4)	4.26% (6)	85.11% (120)	7.8% (11)
4	Has increased customer loyalty to the bank	0.0%	3.55% (5)	37.59% (53)	56.03% (79)	2.84% (4)

5	In my bank, customers are assured of their safety while using electronic card banking	0.0%	2.84% (4)	2.84% (4)	19.86% (28)	74.47% (105)
6	In general, I am satisfied with the electronic card banking services offered by the bank	0.0%	8.51% (12)	12.77% (18)	28.37% (40)	50.35% (71)

Telephone Banking

Majority of the sampled respondents agreed that 73.76% (104) in their bank, customers make credit card payments through telephone banking. The results further revealed that 66.67% (94) of the respondents agreed that credit card payments by telephone have increased the profits of the bank. In regard to complaints, 68.09% (96) agreed that their bank receives complaints from customers through telephone calls. The results also revealed that 60.28% (85) and 18.44% (26) of the sampled respondents agreed that telephone complaints handled through the phone have improved the performance of their bank. Lastly, 35.46% (50) and 51.77% (73) of the respondents agreed and strongly agreed that they are satisfied with the contribution of telephone banking to the performance of their bank.

Table 4: Telephone Banking

	Statements	1	2	3	4	5
1	In my bank, customers make credit card payments through telephone banking	0.0%	2.84% (4)	18.44% (26)	73.76% (104)	4.96% (7)
2	Credit card payments by telephone have increased the profits of the bank.	0.0%	0.0%	7.8% (11)	66.67% (94)	25.53% (36)
3	My bank receives complaints from customers through telephone calls.	0.0%	1.42% (2)	21.99% (31)	68.09% (96)	8.51% (12)
4	Telephone complaints handled through the phone have improved the performance of my bank.	0.0%	8.51% (12)	12.77% (18)	60.28%(85)	18.44% (26)
5	I am satisfied with the contribution of telephone banking to the performance of the bank.	0.0%	0.71% (1)	12.06% (17)	35.46% (50)	51.77% (73)

Performance

From Table 5, majority of the respondents strongly agreed that the revenue collected by their bank had 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 implied that there was 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 had been established in their bank with a mean of 4.37 and standard deviation of 0.527.

Table 5: Performance

	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	0.0%	0.0%	4.26%	36.88%	58.87%

	services			(6)	(52)	(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)

Correlation Results

The correlation coefficient (r) results were presented as shown in Table 6 using Pearson correlation analysis, which computed the direction (Positive/negative) and the strength (Ranges from -1 to +1) of the relationship between two continues or ratio/scale variables.

Table 6: Multiple Correlation Matrix

		MB	IB	EcB	TB
	Pearson Correlation	1			
MB-Mobile Banking	Sig. (2-tailed)				
	N	141			
	Pearson Correlation	.355**	1		
IB-Internet Banking	Sig. (2-tailed)	.000			
	N	141	141		
	Pearson Correlation	.401**	.296**	1	
EcB-E-card Banking	Sig. (2-tailed)	.000	.000		
	N	141	141	141	
	Pearson Correlation	.625**	.406**	.526**	1
TB-Telephone Banking	Sig. (2-tailed)	.000	.000	.000	
	N	141	141	141	141
	Pearson Correlation	.616**	.528**	.530**	.638**
Pf-Performance	Sig. (2-tailed)	.000	.000	.000	.000
	N	141	141	141	141

**. Correlation is significant at the 0.01 level (2-tailed).

Table 6 presents the findings of Pearson correlation between electronic banking and performance. It was evident that there were all constructs of electronic banking were positively correlated with performance. The correlation of interest was obtained by examining the correlation between performance and each of the dimensions of electronic banking. From the correlation Table above, mobile banking was positively correlated to performance the coefficient is 0.616 (p value < 0.01) this was significant at 99% confidence level. Thus increase in mobile banking would make performance to increase in same direction. Similarly, the correlation coefficient for internet banking was 0.528, P=0.000, suggesting that there was significant positive relationship between internet banking and performance of commercial banks in Kakamega. Increase in internet banking would results to increase in performance. Similarly, a correlation coefficient of 0.530** implied that there was significant positive relationship between electronic card banking and performance. Lastly, there was significant positive relationship between

telephone banking and performance of commercial banks in Kakamega County as indicated by .638**, p=0.000. This implies that increase in telephone banking would results to increase in performance.

Multiple Regression Analysis

The results of multiple linear regression analysis were presented in Table 7 which contained model summary (R, R^2, Adj R^2) results, Table 8 which contained ANOVA (goodness of fit; F Ratio, Sig Value) while Table 9 contained regression coefficient (Unstandardized & standardized), t-value and Sig. value results.

The study sought to determine the model summary findings in order to determine the overall percentage change in the performance that was explained by all the metric of the electronic banking by use of R^2. The results in Table 7 present R, R^2, Adj $R^{2,}$ F ratio and Sig. value.

Table 7: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.763[a]	.582	.570	.09987

a. Predictors: (Constant), MB, IB, EcB, TP

The results from the model summary in Table 7 give us information on the overall summary of the model. Looking at the R square column, we can deduce that electronic banking account for 58.2% significant variance in performance (R square =.582, P=0.000) implying that 41.8% of the variance in performance is accounted for by other variables not captured in this model. From the findings, also adjusted R square value was obtained, which was a corrected R square value to provide a useful estimate of true study population. The difference between R^2 and adjusted R^2 is obtained by subtracting the later from the former (.582-.570=0.012) a value when multiplied by 100% results in 1.2 percent. This reduction implied that should the model originated from the entire population instead of a sample, it would explain about 1.2% less variation in the study outcome.

Table 8: Model of Fit (ANOVA Table)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.888	4	.472	47.332	.000[b]
	Residual	1.356	136	.010		
	Total	3.245	140			

a. Dependent Variable: Performance

b. Predictors: (Constant), MB, IB, EcB, TP

In order to assess the significance of the model, simply whether the study model was a better significant predictor of the performance rather than using mean score which was considered as a guess, the study resorted to F Ratio. The F value from study findings indicated the proportion of the improvement in predicting the results from fitting the model relative to the inaccuracy or errors that still prevails in the study model. From the findings, the F value was more than one, as indicated by a value of 47.332, which means that enhancement as a result of model fitting is much larger than the model errors/inaccuracies that were not used in the model (F (4,140) = 47.332, P=0.000). The large F value is very unlikely to exist by chance (99.0%), thus implying that the final study model has significant improvement in it is prediction ability of commercial banks' performance in Kakamega County.

The presented in Table 9 showed unstandardized coefficients, standardized coefficients, t statistic and significant values. The study has an option of either using Unstandardized Coefficients or Standardized Coefficients depending on the type of data. The study used unstandardized coefficient column because we

want to compare electronic banking effect across same measures (Likert Scale 1 through 5).

Table 9: **Coefficients on effect of Constructs of deposit on performance**

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	.170	.383		.444	.658
MB	.206	.051	.288	3.997	.000
IB	.357	.083	.266	4.325	.000
EcB	.239	.075	.210	3.187	.002
TB	.214	.070	.239	3.043	.003

a. Dependent Variable: Performance

From the findings presented, we look at the model results and scan down through the unstandardized coefficients B column. All electronic banking constructs had significant effect on the performance. If electronic banking are held at zero or it is absent, the performance of commercial banks in Kakamega would be .170, p=0.658. Though be positive but insignificant. It was revealed that mobile banking had unique significant contribution to the model with B=.206, p=.000 suggesting that controlling of other variables (internet banking, electronic card banking and Telephone banking) in the model, a unit change in mobile banking would result to significant change in performance by 0.206 in the same direction. The coefficient of internet banking was 0.357, which was significant (p=.000) and also positive. When the variance explained by all other variables (mobile banking, electronic card banking and Telephone banking) in the model is controlled, a unit change in internet banking would result to change in performance by 0.357 in the same direction.

Another variable that also had a unique significant contribution to the model was the value for electronic card banking (B=.239, p=.002). When other variables in the model are controlled (internet banking, mobile banking and Telephone banking), a unit change in electronic card banking would result to significant change in performance by 0.239 in the same direction. Lastly, Telephone banking had also unique significant contribution to the model with B=-0.214, p=.003 implying that when other variables in the model are controlled (internet banking, electronic card banking and mobile banking), a unit change in telephone banking would result to significant change in performance by 0.214 in the same direction.

A regression of the four predictor variables against performance established the multiple linear regression model as below as indicated:

Performance =0.170 + 0.206MB+0.357IB+0.239EcB+ 0.214TB

CONCLUSIONS

From the linear and multiple 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 results 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 predicator of performance of commercial banks in Kakamega County.

From the linear and multiple regression results, the study concluded that Internet banking has significant influence on performance of commercial banks in Kakamega County. There were repeat users are as a result of satisfaction with mobile banking services and this has resulted to increase in number of mobile transaction users. Therefore, respondents were satisfied with the internet banking

services provided by the bank. Therefore, internet banking is a useful predicator of performance of commercial banks in Kakamega County.

From the linear and multiple regression results, the study concluded that Electronic card banking has significant effect on performance of commercial banks in Kakamega County. An increase in electronic card banking would results to significant increase in performance of commercial banks in Kakamega County. The utilization of electronic card revealed that it has led to improved operational efficiency in commercial banks in Kakamega County and electronic card banking customers are assured of their safety while using electronic card banking. Therefore, electronic card banking is a significant predicator of performance of commercial banks in Kakamega County.

The study concluded that telephone banking has significant effect on performance of commercial banks in Kakamega County as indicated by Pearson correlation and linear regression analysis. Credit card payments by telephone have increased the profits of the bank and telephone complaints handled through the phone have improved the performance of sampled commercial banks in the county. Therefore, respondents were satisfied with the contribution of telephone banking to the performance of the bank. Hence, telephone banking is a significant predicator of performance of commercial banks in Kakamega County.

RECOMMENDATION

From objective one, the study recommended that bank management need to decrease mobile bill payment services in commercial bank. This would results to customer loyalty which in turn would lead to increase in financial transactions undertaken through mobile banking.

The study recommended that commercial bank management need to decrease internet banking bill payment services in commercial bank. This would results to increase of interbank fund transfers as well as attract new users. The banks should also enhance internet banking customer security and privacy to reduce fraud and cyber-crime associated with internet banking.

The study recommended that bank management need to keep on upgrading their electronic card banking technology in order to have an up to date system for effective service delivery. Further, bank management should establish country wide training and training for clients on usage of various e business applications for efficient performance of the bank. For example training on ATM and VISA usage, internet banking, and mobile banking.

The study recommended that commercial banks management should increase the number of services offered through telephone banking so that they do not only handle customer complaints. This may include introduction of services such as dormant account, collection of electronic cards among others. This would results to increase in bank revenue due to the number of active accounts.

Suggestion for Further Studies

The study gives the following suggestion; there is need to establish challenges faced by client or bank customers as they use or access mobile banking services. There is also need for more study to be done on the impact of government regulations on e-banking in Kenya. Lastly, it is also important to carry out a research to establish the readiness of the Kenyan population to adopt e-banking in Kenya.

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