

MOBILE BANKING TECHNOLOGY AND ITS INFLUENCE ON FINANCIAL PERFORMANCE OF COMMERCIAL BANKS IN LODWAR MUNICIPALITY

Nakesio Ellotion Collins

Turkana University College, Kenya

CPA, Dr. J. Okello, PhD

Turkana University College, Kenya

Dr. A. T Logiron, PhD

Turkana University College, Kenya

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ABSTRACT

Mobile banking technology is the most recent technological innovation in the modern banking industry. It has aided improvement in revenues by reducing overhead cost associated with financial institutions thus facilitating financial performance. The purpose of this study was to examine the influence of mobile banking technology on financial performance of commercial banks in Lodwar Municipality. The study adopted descriptive research design. Both primary and secondary data was collected using questionnaires, interview schedule and data collection sheet. The data collected was analyzed by the help of SPSS which yielded both quantitative and qualitative data using descriptive and inferential statistics. The study found that, mobile banking technology has a significant influence on financial performance of commercial banks in Lodwar Municipality. This was supported by a standardized score of 0.446 and a mean score of 4.668 of the descriptive statistics. Further, the results of correlation coefficient returned a p-value of 0.031 which is less than the adopted significance level of 0.05. Multiple regression model returned an R² of 0.11 which means that approximately 11% of the variance in financial performance can be explained by mobile banking technology. The study therefore concludes that mobile banking technology has a significant positive influence on financial performance of commercial banks in Lodwar Municipality. It is equally important to note that, friendliness of technological innovation influences operation of commercial banks positively and should be encouraged by policy makers.

Keywords: Mobile Banking Technology, Financial Performance, Technological innovation, Financial Institutions and Overhead Cost.

1. INTRODUCTION

Mobile banking technology is an innovation by financial institutions that offers financial services by the help of internet enabled mobile phones. Mobile banking technology was adopted by commercial banks out of a sheer hope that it will improve financial performance through offering efficient and convenient banking services such as; checking account balance, bills payments, transfers and depositing of funds. Through these services, clients save on transport costs while financial institutions minimize overhead cost such as operation cost and staffing cost leading to a positive financial performance (Latvin, 2020). A part from offering financial services to clients that are excluded from the financial mainstream, mobile banking technology is also fond of offering markets for commercial banks products.

According to the study by Baptista & Oliveira (2016) on contribution of mobile technology on

profitability of commercial banks in United States, mobile banking technology played a pivotal role in improving the financial performance of commercial banks by increasing the base usage of financial services by customers. This reduces operation cost while maximizing the services absorption rate by customers. The findings of Baptista & Oliveira (2016) was also acknowledged by Malaquias and Hwang (2019) while conducting research on mobile banking enabled commercial banks and those banks that have not adopted mobile banking technology. The study found that, mobile banking technology enabled commercial banks were four times better in financial performance compared to those banks that have not embraced mobile banking. however, despite the rich literature and the importance of incorporating technology into the banking system, Khobragade et al (2024) observed that, commercial banks have not reach their anticipated full potential as outlined by the respective commercial bank's financial performance objective. Incorporation of mobile banking technology into the banking operation of financial institutions was embraced by commercial banks in Finland.

According to Ariminen & Leinonen (2006), the number of bank branches in Finland had considerably reduced since most clients transact via their internet enabled mobile phones. Embracing mobile banking technology by the Finish customers was driven by effectiveness and convenience in deposits, withdrawal and bills payments that have been enables by the mobile banking technology. While conducting the same study Johnson et al (2012) agreed with the findings by highlighting that, mobile banking technology has potential of allowing banking services reach the rural population who cannot access the bank branch. However, the findings of both Ariminen & Leinonen (2006) and Johnson (2016) did not discuss exhaustively how convenience and effectiveness in service delivery of mobile banking technology influence financial performance of adopting commercial banks.

In most African countries, a good number of population live below the poverty level of 1 dollar a day which is against the UN declaration. This has affected their purchasing power and easy access to financial services offered by financial institutions. Introduction of mobile banking technology by these institutions was a means of enhancing financial penetration and bringing social and financial change to most countries in Africa thus increasing access to banking products and services to about 38 per cent (Hinson, 2011).

Muteresi (2016) conducted a study on adoption of online banking services and financial performance of South African banks. The study found out that online banking services has made money transaction fast, cheap and easy in terms of usage. The study further found out that financial performance of banks on Johannesburg and Pretoria had improved drastically immediately after adoption of technology. However, the research did not ascertain the level of improvement and profitability of those banks that had adopted electronic banking in the country's capital. (Muteresi, 2016) also acknowledges that there were frequent complaints from customers regarding the operation of online banking as most of them did not know how it operates. This affected profitability since most clients did not adopt online banking fully. It is against this background that the current study was conducted in Kenya.

Ayo (2010) postulate that, commercial banks in Ghana are experiencing great success in terms of delivering variety of value added products and services via electronic banking which has led to

increased financial performance. In his study, all commercial banks that adopted internet banking services are doing well financially with different level of success. However, Ayo (2010) also acknowledges that some commercial banks are performing dismally due to clients avoiding electronic banking and preferring to do their transactions over the counter. It is against the acknowledgement of Ayo (2010) that this study was conducted to find out why customers prefer over the counter transactions rather than a more advanced reliable system based transaction.

As of February 2022, Kenya had some 67.9 million registered mobile money accounts and the number was triggered by the launch of M-PESA in 2007 which proved to be a game-changer for the country's economy. M-PESA is a mobile money system used by more than 17 million of Kenya's population and which enables individuals to perform a range of financial tasks such as buying airtime, transferring funds, paying bills, and saving money via their phones (Njeru, 2014).

Ogutu (2018) conducted a study on effects of electronic banking on financial performance of commercial banks listed in Nairobi Securities Exchange in Kenya. The study found out that there was a significant relationship between e-banking and financial performance and it yielded strong correlation. However, Ogutu (2018) further agreed that more sensitization need to be done to inform clients of the importance of adopting internet payment system so that banks can realize their potential which formed the basis for conducting this study in Turkana County.

Mobile banking as a form of electronic banking system was introduced into the financial markets in 2007 through mobile technology and has since received overwhelming uptake (Kamau, 2016). Kimenyi (2009) in his study opined that, as a product of mobile payment technology, mobile-banking has become a solution to the problems of the unbanked society and it is effective in reaching millions of unbanked households in rural areas with very little investments. However, Mageto (2022) criticized the research of Kimenyi (2009) and Ndung'u (2011) by arguing that their research lacked the basis upon which financial performance is measured and how it contributes to financial performance of banks.

Turkana County remains an area of interest in research on influence of technological innovation towards performance of banking institutions. The County has a population of 926,976 people of which 55% are estimated to be persons of over 18 years and are capable of being banked (Census Report, 2019). From the registration database of commercial banks in Turkana County, only 13% of the total population are banked and can access mobile banking services (Annual Bank Supervision Report, 2022). This has literary affected the resulting financial performance of the commercial banks in Turkana County.

Banking sector is considered one of the most important segment of the Kenyan economy contributing 1.1% of the country's 5.6% total GDP in 2023. This uniqueness has enabled the government develop banking policies in addition to promoting and strengthening of banking innovations in order to avert challenges that may hinder their effectiveness in driving the financial sector. Banking innovation is important in enhancing competitive advantage and managing operation cost. Innovation such as adoption of mobile banking technology and integrating it into the banking operation is essential in financial performance.

Mobile banking technology is one of the most recent technological innovation in the banking industry. Mageto & Muturi (2017) postulate that mobile banking involves application of mobile phone to do transactions that are not limited to payment of bills, checking bank balance, deposit and transfer of funds and requesting for bank statement. According to Mbiti (2018), mobile banking technology have forced commercial banks in Kenya to integrate mobile transactions in their business because of its convenience, affordability, security and ease of operation. However, challenges related to debt crisis and market competition have affected the full adoption of mobile banking technology which has led to commercial banks not achieving their objectives. It is also worthy to note that, while commercial banks are embracing mobile banking technology, clients still queue in the banking hall for services that can easily be done using mobile phones leading to financial underperformance (Maina & Mungai, 2019).

In Lodwar Municipality, mobile technology adoption have not had a significant positive contribution towards performance of commercial banks. Performance of commercial banks in Lodwar Municipality has been attributed by interests on savings, commission on agents and loan facilities. Based on the above findings, this study sought to determine the influence of mobile banking technology on financial performance of commercial banks in Lodwar Municipality.

2. RESEARCH DESIGN AND METHODOLOGY

This study adopted descriptive survey design targeting 117 respondents from commercial banks within Lodwar Municipality. Both qualitative and quantitative data were collected using questionnaires, interview schedule and data collection sheet. Primary data was collected using questionnaire with a five point Likert scale where positive statements were rated as 5- SA, 4- A, 3- neutral, 2- D, 1- SD. Reverse rating was applied for the negative statements.

The sampling units of this study were commercial banks found within Lodwar Municipality. The respondents of this study were divided into strata comprising of both section heads and technical employees in each of the commercial bank. Stratified sampling technique was used to proportionally determine the number of participants in each stratum. After determining the sample size, simple random sampling was used to select participants in each stratum.

The sample size of this study was scientifically obtained by the help of Nassiuma's (2000) coefficient of variation formula

$$n = \frac{NC^2}{C^2 + (N - 1)e^2}$$

Where;

C = coefficient of variation (Accepted Range 21%≤30%)

e = standard error (Accepted Range 2%≤5%)

N = Population

From the above sample determination formula, this study used coefficient variation of 29% and standard error of 3% since the higher limit depicts low variability in the sample and minimized degree of error. Using Nassiuma's formula of sample size selection, a sample of 52 respondents were selected. To ensure there was no biasness in sample selection, proportional allocation was used to select 52 respondents from the commercial banks in Lodwar Municipality.

3. FINDINGS, SUMMARY AND CONCLUSIONS

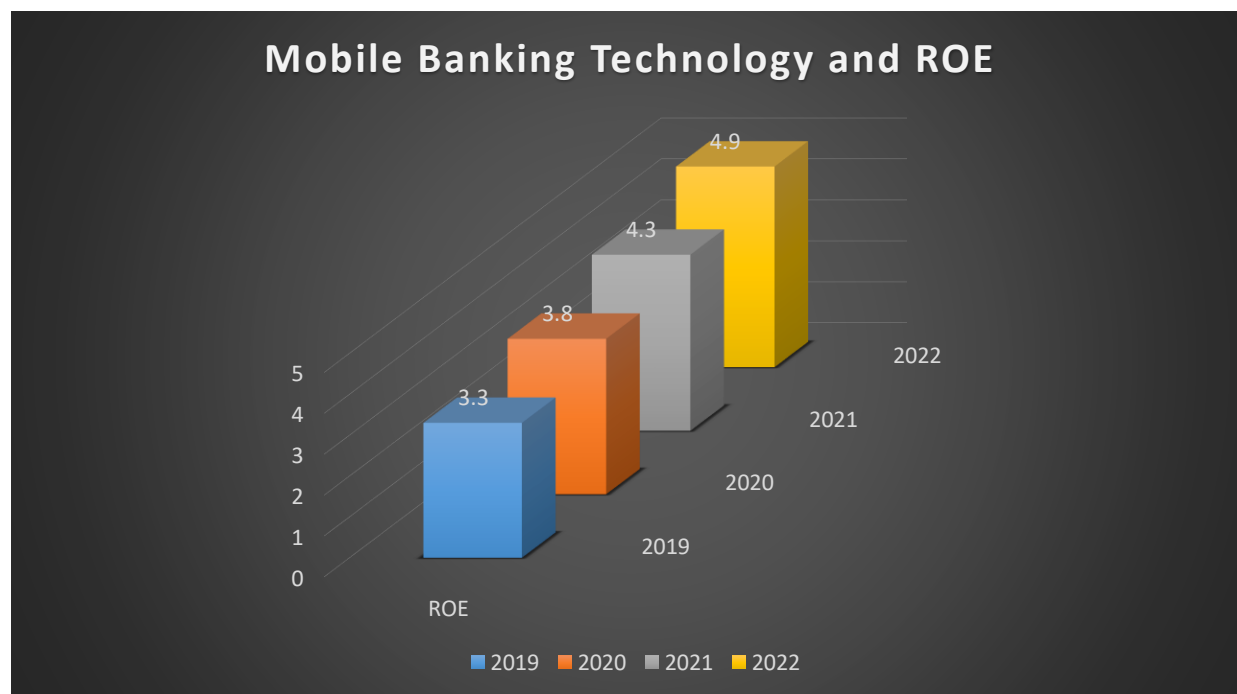
Descriptive Statistics

Table 1: Influence of Mobile Banking Technology on Financial Performance

	Mean	S.D
Increased number of active users increases revenue	4.87	.336
Fees and commission from mobile banking increases bank revenue	4.88	.336
Investment in mobile banking technology improves profitability	4.97	.177
Mobile banking system have been applied successfully by the bank	4.87	.336
There is an increase in the number of users registering for mobile banking system	4.84	.369
Mobile banking system saves queuing time	4.78	.420
Mobile banking system has reduced complaints from customers	4.22	.553
Mobile banking system has reduced transaction errors	4.34	.545
Mobile banking system has reduced fraudulent activities	4.25	.672
Mobile banking system has facilitated faster processing of cheques	4.59	.499
Overall	4.661	.424

The study concluded that the respondents had a positive perception and attitude towards mobile banking system and financial performance, and that they rated all the statements above the neutral point of 3 on the Likert scale.

While considering the progressive financial performance of commercial banks, the study found that there was progressive increase from 2019-2022 as outlined in the figure below



Mobile Banking and Financial Performance (ROE %)

Inferential Statistics

Correlation Analysis

When determining the strength and direction between each of the independent and dependent variables in this study, correlation analysis was carried out. The study conducted correlation analysis by deriving the Pearson Correlation Coefficients between the mobile banking and financial performance as shown in table 4.12

Table 2: Correlation Coefficient on Mobile Banking and Financial Performance

	Finance performance (ROE)	Mobile banking system
Finance performance (ROE)	1	
Mobile banking system	.031	1

Correlation analysis in table showed that, Finance performance (ROE) had a positive and significant correlation with mobile banking system ($r = 0.031$, $p < 0.05$).

Table 3: Model Summary of Regression Analysis

Model	R	R Square	Adjusted Square	R Std. Error of the Estimate
1	.332 ^a	.11	.059	2.97965

a. Predictors: (Constant), Mobile banking system

According to the model summary of regression above, the results indicated that regression analysis returned an R^2 of 0.11 and adjusted R^2 value of 0.059.

Table 4: Coefficients of Regression Model

Coefficients ^a		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Model		B	Std. Error	Beta		
1	(Constant)	20.107	2.151		9.348	.000
	Mobile banking system	.771	.295	.896	2.618	.024

a. Dependent Variable: Finance performance (ROE)

The coefficient from the above model derived the following equation;

$$Y = 20.107 + 0.771X$$

Which implies that when all mobile banking factors are held constant, ROE of commercial banks in Lodwar Municipality would be 20.107

The rating of the Likert Scale gave an overall mean score of 4.668 and standard deviation of 0.425 indicating that the respondents had a strong agreement with little variance that mobile banking

technology influences financial performance.

The regression analysis model for mobile banking system and financial performance (ROE) returned an R^2 of 0.11, meaning that approximately 11% of the variance in financial performance can be explained by mobile banking technology. The Adjusted R^2 value of 0.059 adjusts for the number of predictors in the model and suggests that after accounting for the number of variables, mobile banking system still explains about 5.9% of the variance in ROE. Regression coefficient showed a positive and significant effect on financial performance (ROE), with an unstandardized coefficient of 0.771 and a p-value of 0.024. This means that when holding all factors constant, a unit increase in mobile banking technology leads to an increase in financial performance by 0.771 units. The standardized coefficient of 0.896 indicated that mobile banking system had a strong positive relationship with financial performance.

Ho:

Mobile banking technology has no significant influence on financial performance of commercial banks in Lodwar Municipality

From the analysis of the findings on Pearson product correlation, there is a significant relationship between mobile banking technology and financial performance of commercial banks, as the model returned a p-value of 0.031, which is less than the adopted significant level 0.05. Therefore, the null hypothesis (H_0) is rejected and the alternative hypothesis (H_1) is accepted.

The results of this study correspond to the findings of Okiro and Ndungu (2013), Kithaka (2016), Momanyi (2015), Tiwari (2016) and Central Bank of Kenya annual report (2016) on influence of mobile technology on performance of commercial banks. The findings of those studies affirmed that, mobile banking offer services which can reach a good number of customers who are unbanked in remote areas hence considered as global banking tool.

Findings by Okiro and Ndungu (2013) established that mobile banking had positive effect on the performance of banks in the last five years. Furthermore, researcher found a significant positive relationship between mobile banking and the financial performance of the commercial banks reflecting a direct proportional increase in ROA.

Furthermore, the findings of this study align with the findings by Njogu's (2014), which reported a strong positive relationship between electronic banking and financial performance. The current study aligns with the findings of Njogu's (2014) and intends to explore the influence of full adoption of electronic banking system on bank's financial performance. The indicators of financial performance will be return on equity, return on assets, net interest margin, and market share.

The findings of this study also concur with the studies of Rono (2015), Maiyo (2013) and Odhiambo (2012), which identified mobile banking as a prudent advancement which improves efficiency of banks but also noted some security concerns. The study recommends safeguarding client information and enhancing cyber security measures to prevent fraud and theft. The findings also support Hannington's (2012) study, which observed revenue growth as a result of adopting electronic banking by commercial banks.

4. SUMMARY OF FINDINGS

The objective of this study was to examine the influence of mobile banking technology on financial performance of commercial banks within Lodwar Municipality. This study adopted descriptive

design while testing correlation and regression analysis. Data was collected from 20 head of sections and 32 technical staff from the commercial banks within Lodwar Municipality. Quantitative data was analyzed through descriptive and inferential statistics. The descriptive statistics gave means and standard deviations while inferential statistics was analyzed by the help of correlation and multiple regression. Qualitative data was collected through interviews and presented thematically in quoted texts so as to corroborate and complement quantitative data.

5. CONCLUSION

Descriptive statistics showed that mobile banking system is the most successful and profitable electronic banking tool and it has met or exceeded the expectations and needs of the customers and employees. This indicates that the respondents appreciated that investing in improving and upgrading mobile banking technology enhanced the bank's efficiency and profitability. Low level standard deviation returned by the analysis implies that, the respondents had consistent and high level of agreement on rating the statements.

Results of correlation analysis showed that, mobile banking system had a positive and significant correlation with financial performance. This correlation was also found to be significant since the calculated p-value was less than the adopted level of significance. Coefficient of regression model between mobile banking technology and financial performance also showed a positive and significant effect with an unstandardized coefficient of 0.771. This means that a unit increase in mobile banking system leads to an increase in finance performance by 0.771 units.

Since both descriptive and inferential statistics show that mobile banking technology has an influence on financial performance of commercial banks, it is equally important to note that this study present challenges and opportunities for banking institutions and customers alike. Challenges such as security concerns, network failures, customer complaints, regulatory issues, and skill gaps affect financial performance.

6. RECOMMENDATIONS

This study recommends awareness creation and promotion campaigns to educate clients on the usage of mobile banking technology and how it is cost effective and reduces time incurred while doing transactions.

Bank management should focus on promoting the uptake of mobile banking technology by clients since it has a significant effect on financial performance.

Bank management should also focus on safeguarding client information and enhancing cyber security measures to prevent fraud and identity theft so as to improve the confidence of clients while adopting technological innovation such as mobile banking technology.

Improving the functionality and accessibility of mobile banking technology should be enhanced by the management. This includes; increasing network coverage and reliability, ensuring user-friendliness and convenience, providing customer support and feedback, and invest in innovation and effective technology.

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