EFFECTS OF MOBILE BANKING ADOPTION ON THE FINANCIAL PERFORMANCE OF COMMERCIAL BANKS IN KENYA

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Abstract

The ever advancement of information technology and its intrusion into the financial sector all over the globe have considerably affected how customers are served, and operations are carried out. This is also well said for the emergence of mobile phones. The banking sector in Kenya has undergone significant transformation over the past decade, driven by technological advancements and shifting consumer preferences. One of the most transformative innovations is the adoption of mobile banking services, which has revolutionised financial transactions. Mobile banking allows customers to perform various banking activities through their mobile phones, such as fund transfers, bill payments, and account inquiries, offering convenience and accessibility unmatched by traditional banking methods. The research was anchored on the technology acceptance model and diffusion of innovation theory. Descriptive cross-sectional research designs were deployed. Primary data was collected using a structured questionnaire and analysed using path analysis. The study showed that ease of use, perceived usefulness, social influence and the bank's customer support were individually significant. The study concluded that mobile banking adoption influences the financial performance of commercial banks in Kenya.

Keywords: Mobile Banking Adoption, The Technology Acceptance Theory Financial Performance, Commercial Banks, Kenya

INTRODUCTION

The banking sector in Kenya has undergone significant transformation over the past decade, driven by technological advancements and shifting consumer preferences (Moffat, 2017). One of the most transformative innovations is the adoption of mobile banking services, which has revolutionised financial transactions. Mobile banking allows customers to perform various banking activities through their mobile phones, such as fund transfers, bill payments, and account inquiries. It offers convenience and accessibility unmatched by traditional banking methods (Central Bank of Kenya, 2021). The rapid proliferation of mobile phones in Kenya, along with the widespread availability of mobile internet, has facilitated the growth of mobile banking. This technological shift has enhanced customer experience and presented strategic opportunities and challenges for commercial banks. As banks invest in mobile banking platforms, understanding the impact of these services on their financial performance becomes crucial (Mbiti & Weil, 2011).

Kenya's banking system has actively embraced financial innovations. Key drivers of this innovation include the globalisation of financial systems, deregulation, and significant technological advancements. The banking sector has grown robust, driven by economic expansion, financial inclusion initiatives, and technological advancements. Kenya is recognised as a leader in financial inclusion in Africa, primarily due to the success of mobile money services like M-Pesa (Jack & Suri, 2011). Technological innovation, particularly mobile banking and digital financial services, has transformed the banking landscape. Banks have increasingly adopted mobile banking platforms to cater to a tech-savvy population, providing mobile money transfers, online banking, and digital loans (Safaricom, 2022). The Central Bank of Kenya, a key pillar in maintaining the sector's health through regulation and oversight, ensures stability and promotes transparency. Recent regulatory reforms have focused on enhancing consumer protection, promoting transparency, and encouraging competition (Central Bank of Kenya, 2021).

Problem Statement

Mobile banking is causing a variety of activity in the world's financial services industry. It is leapfrogging traditional banking, and now many top banks are up and running with their mobile banking solutions, trying to take advantage of the technology that comes with mobile phones and introduce the service as a means of providing fast and efficient services and financial institutions of all sizes are busy assessing their place in the mobile banking world. Kenya has made significant strides in financial inclusion, with a large proportion of the population now having access to financial services. Mobile banking has been a critical driver,

bringing banking services to previously unbanked and underbanked populations, especially in rural areas (Demombynes & Thegeya, 2012).

The banking sector is highly competitive, with major players including KCB Bank, Equity Bank, and Cooperative Bank. The entry of digital-only banks and fintech companies has intensified competition, pushing traditional banks to innovate and enhance their service offerings (Oloo, 2013). The sector has witnessed strong financial performance, increasing profitability and asset growth. Despite growth, the sector faces challenges such as cybersecurity threats, regulatory compliance costs, and the need for continuous technological upgrades. Economic factors such as inflation and interest rate fluctuations also impact the sector's stability and performance (Central Bank of Kenya, 2021). Non-performing loans (NPLs) have prompted banks to adopt more stringent credit risk management practices (Oloo, 2013).

Despite various challenges, the sector remains a crucial pillar of Kenya's economy, promoting financial inclusion and economic development (Mugo et al., 2017). Mobile banking services allow customers to perform banking transactions via mobile devices, enhancing convenience and accessibility. These services include balance inquiries, fund transfers, bill payments, and access to other financial services (Safaricom, 2022). Mobile banking in Kenya has evolved from a basic SMS-based service to sophisticated mobile apps offering various financial services. The success of M-Pesa has spurred widespread adoption, making mobile banking an integral part of Kenya's financial ecosystem (Jack & Suri, 2011). This study aimed to determine the effect of mobile banking adoption on the financial performance of commercial banks in Kenya.

THEORETICAL REVIEW

The Technology Acceptance Model (TAM) was developed by Venkatesh and Davis (1989) to explain computer usage behaviour. The Technology Acceptance Theory (TAM) is an information system theory that models how users will accept and use a given technology. It supports two constructs: Perceived usefulness (PU) and Perceived ease of use (PEOU). TAM posits that one can use Perceived usefulness (PU) together with Perceived ease-of-use (PEOU) to predict users" behaviour and intention to adopt a given technology. (PU). Fred Davis defined this as "the degree to which a person believes that using a particular system would enhance his or her job performance. In contrast, Perceived ease of use (PEOU) is "the degree to which a person believes that using a particular system would be free from effort" (Davis, 1989).

Diffusion of Innovation Theory (DIT) is a social science theory developed by Rogers, E. M. (1995). It explains how an idea or a product gains momentum and spreads (diffuses) over time through a specific social system. The extended theory posits that adopting innovation is

determined by five perceived attributes of such innovation (Yee-Loong et al., 2008). The diffusion of innovation theory is one of the most popular theories that explain the factors that influence an individual to accept or reject an innovation or a new technology. This theory aligns with this study as mobile banking is an innovation, and the study sought to find the impact of mobile banking adoption on financial performance.

LITERATURE REVIEW

Mobile banking has been defined by Porteous (2006) as a subset of electronic banking in which customers access a range of banking products, such as a variety of savings and credit instruments, via electronic channels. According to Venable Telecommunications (2008), mobile banking can be defined as financial transactions that are based on wireless handsets. A Financial Access study (Kenya, 2014) by the Central Bank of Kenya and Financial Sector Deepening identified that 83.8% of the urban population own a mobile phone while 54.7% of the population in Nairobi aged 18 years and above have access to formal financial services. The study further notes that mobile phone financial services rose from 28% in 2009 to 62% in 2013, with Nairobi having the highest at 84.1%. As technology advances and becomes more intertwined with personal and professional lives, embracing or rejecting it remains unresolved (Orlikowski et al.,2001). Since its introduction over 25 years ago, the technology acceptance model (TAM) has been extensively studied, underscoring its widespread recognition and significance in understanding technology acceptance. The Technology Acceptance Model (TAM) explains how users accept and use a technology. Key factors include perceived usefulness and ease of use (Davis, 1989). -Diffusion of Innovation Theory outlines how, why, and at what rate new ideas and technology spread through cultures (Rogers, 2003). Financial Performance Metrics in Banking: Common metrics include profitability, cost efficiency, and customer growth (Athanasoglou et al., 2008). Global Studies Studies show that mobile banking adoption positively impacts financial performance by reducing costs and increasing customer satisfaction (Gu et al., 2009). Local Studies: In Kenya, mobile banking has been linked to increased profitability and financial inclusion (Ngugi et al., 2010).

Kumar (2010), in a study on microfinance and Mobile Banking – noted that financial institutions can significantly lower their costs through m-banking services. For example, automatic messages through texts that notify customers about upcoming payments and loan disbursements and warn of late payment notices can save loan officers time and phone bills. Kings (2011) noted that the value proposition for the use of M-Pesa by organisations focuses on several benefits and demerits, which include corruption, increased operating efficiencies, including less paperwork, better transparency and accountability via the electronic records, and

more independence and self-sufficiency for users. Crowe (2013) observed that the massive uptake of mobile phone usage in developing countries such as Kenya has played a vital role in the success of many development interventions over the last decade. Mobile phones have given people the availability of various services and information, irrespective of their skill level and revolutionised the whole business world. Kyte (2013) noted that advanced people (in terms of technological skills) get more opportunities through access to information, making cash payments, and spurring job creation through mobile services. Marous (2018) states that many organisations, including banking institutions, use mobile marketing to touch their customers and facilitate trading constantly. Mobile banking is one common type of mobile commerce, which offers customers the chance to perform banking activities anywhere through a simple and available channel (Todavchych, 2012).
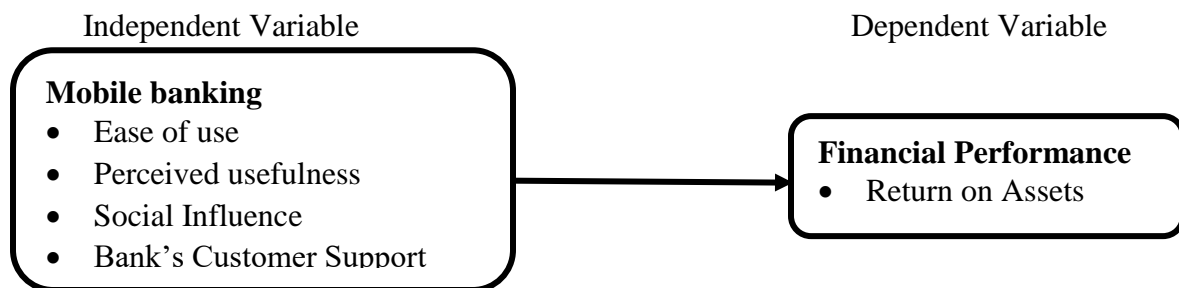
Independent Variable   Dependent Variable

Mobile banking
- Ease of use
- Perceived usefulness
- Social Influence
- Bank's Customer Support

Financial Performance
- Return on Assets

Figure 1: Conceptual Framework

METHODOLOGY

The study adopted a descriptive research design, which is particularly suitable for exploring the relationship between variables without manipulating them. This design allowed for an in-depth examination of the effects of mobile banking adoption on the financial performance of commercial banks in Kenya. The target population comprised all 40 commercial banks operating in the country, ensuring that the findings would be representative of the banking sector; therefore, the census technique was employed.

The variables were carefully operationalized to enhance the rigour of the study. Mobile banking adoption was broken down into four measurable components: ease of use, perceived usefulness, social influence, and customer support from banks. Financial performance was measured using return on assets (ROA), a widely recognized and reliable metric for assessing profitability. This operationalization ensured clarity and focus in data collection and analysis.

A structured questionnaire was employed as the primary data collection instrument, designed specifically to capture detailed and accurate information on the study variables. The questionnaire was pretested to ensure reliability and validity, with adjustments made based on

feedback to refine its effectiveness. The drop-and-pick method was used to administer the questionnaire, a practical approach that facilitated a higher response rate by accommodating the schedules of respondents.

Data analysis was conducted using multiple linear regression, an appropriate statistical technique for examining the relationship between the independent variable (mobile banking adoption) and the dependent variable (financial performance). The analysis was performed at a 5% significance level, providing a robust basis for testing the hypotheses and ensuring statistical rigor. This approach allowed the researcher to identify and quantify the influence of mobile banking adoption on financial performance, contributing valuable insights to the field.

By employing a comprehensive methodology that included a representative population, well-defined variables, a validated data collection instrument, and rigorous statistical analysis, the study established a credible foundation for its findings. This methodological rigor enhances the reliability and generalizability of the conclusions drawn, providing valuable implications for stakeholders in the banking industry.

FINDINGS AND DISCUSSIONS

The study sought to determine the relationships between mobile banking adoption and the financial performance of commercial banks in Kenya. The following null hypothesis guided the study;

H_0: Mobile banking Adoption does not affect the financial performance of commercial banks in Kenya

Table 1: Mobile Banking Adoption on Financial Performance

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
					Change Statistics				
1	.782[a]	.611	.567	.36356	.611	13.758	4	35	.000

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.274	4	1.818	13.758	.000[b]
	Residual	4.626	35	.132		
	Total	11.900	39			

Coefficients[a]

Model		Unstandardised Coefficients		Standardised Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	.118	.106		1.113	.273		
	Ease of use	.233	.091	.221	2.561	.014	.637	1.570
	Perceived usefulness	.477	.131	.479	3.644	.001	.643	1.554
	Social Influence	.313	.112	.405	2.803	.008	.531	1.883
	Bank's Customer Support	.358	.150	.326	2.387	.002	.961	1.040

a. Dependent Variable: Return on Assets

b. Predictors: (Constant), Bank's Customer Support, Social Influence, Perceived usefulness, Ease of use

As shown from the study results in Table 1, the Coefficient of Multiple Determination (R^2) is 0. 611. This implies that ease of use, perceived usefulness, Social Influence, and bank customer support as indicators of mobile banking adoption explained 61.1% of the variation in the financial performance of commercial banks, while 22.6 was attributed to other variables that were not focused on in this study. Thus, the model was fit for prediction.

The study applied Analysis of Variance (ANOVA) to determine the combined influence of ease of use, perceived usefulness, social influence, and bank customer support on financial performance. F static is 13.758 with a p-value of 0.000<0.05. The implication is that the combined influence of mobile banking adoption on the financial performance of commercial banks in Kenya is significant since the p-value < 0.05.

As per the model coefficients in the equation

$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon$ becomes;

$Y = 0.118 + 0.233X_1 + 0.477X_2 + 0.313X_3 + 0.358X_4$

As shown in the study results, all the predictor variables had p-values <0.005. Thus, individually significant.

The implication is that the influence of ease of use, perceived usefulness, social influence, and bank customer support on the financial performance of commercial banks in Kenya is individually significant since the p-value is less than 0.05.

As shown by the regression line established, holding the independent variable constant, the financial performance of commercial banks in Kenya was 0.118. As shown from the study results, holding all other variables constant, one unit increases ease of use, the financial performance of commercial banks in Kenya increases by 0.233; one unit increase perceived usefulness, financial performance of commercial banks in Kenya increases by 0.477; one unit increases social influence, the financial performance of commercial banks in Kenya increases by 0.313; one unit increases bank's customer support, the financial performance of commercial banks in Kenya increases by 0.358.

This study concurred with the findings of Tellez and Donner (2008), who did a paper m-banking on the development of the economy by linking its impact on adoption and use. The study found that m-payments/m-banking was a central innovation for developing countries since it enables financial institutions to get more users and lowers the transfer of money from one region to another. The findings conformed with those of Koivu (2002), who established that mobile phone uptake in Kenya was unprecedented and that m-banking affects the well-being of organisations, decision-making behaviour, and economic conditions. This study found that the reliance on information technology devices performing financial transactions, including but not limited to bill payments, is steadily gaining momentum in the country. The findings are in tandem with the findings of Ogare (2013), who examined whether electronic banking has a relationship with financial firms' performance; that is, e-banking through services offered by the platform, such as purchasing airtime, has a significant and positive impact of the profits of financial institutions.

CONCLUSION AND IMPLICATIONS

The primary objective of this study was to determine the impact of mobile banking adoption on the financial performance of commercial banks in Kenya. Through extensive research and analysis, the study concluded that several factors associated with mobile banking significantly influenced these banks' financial outcomes. Specifically, the study found that the ease of use of mobile banking platforms, the perceived usefulness of these services, social influence, and the quality of customer support provided by the banks played crucial roles in enhancing financial performance. Each of these factors had a positive impact, contributing to improved efficiency, customer satisfaction, and the overall financial health of the commercial banks in Kenya.

In summary, the adoption of mobile banking, facilitated by user-friendly interfaces, beneficial features, supportive social dynamics, and robust customer support, has positively affected the financial performance of commercial banks in Kenya.

The findings of this study have important implications for the banking industry. Commercial banks should prioritise developing and enhancing mobile banking platforms to ensure they are user-friendly and offer features that customers find helpful. This strategic focus can lead to better financial performance. Additionally, banks should increase social influence by promoting mobile banking through various channels, including social media and word-of-mouth, to attract more users and build a solid customer base.

Enhancing customer support services for mobile banking users can lead to higher satisfaction and loyalty, ultimately contributing to improved financial outcomes. Policymakers and regulatory bodies should consider creating an enabling environment that supports the growth and adoption of mobile banking, recognising its positive impact on the financial sector.

Future research could explore the long-term effects of mobile banking adoption and investigate additional factors that may influence financial performance, providing a more comprehensive understanding of the dynamics at play.

REFERENCES

Marous, J. (2018), The Financial Brand and Owner/Publisher of the Digital Banking Report.

Rogers, E. M. (1995). Diffusion of Innovations: modifications of a model for telecommunications. In Die Diffusion von Innovationen in der Telekommunikation (pp. 25-38). Springer Berlin Heidelberg.

Yee-Loong Chong, A., & Ooi, K. B. (2008). Adoption of interorganizational system standards in supply chains: an empirical analysis of RosettaNet standards. Industrial Management & Data Systems, 108(4), 529-547

Athanasoglou, P. P., Brissimis, S. N., & Delis, M. D. (2008). Bank-specific, industry-specific and macroeconomic determinants of bank profitability. Journal of International Financial Markets, Institutions and Money, 18(2), 121-136.

Central Bank of Kenya. (2021). Annual report. Nairobi, Kenya.

Crowe A. (2003). The Promise and Problems of Mobile Phones in Developing World.

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. MIS Quarterly, 13(3), 319-340.

Demombynes, G., & Thegeya, A. (2012). Kenya's mobile revolution and the promise of mobile savings. World Bank Policy Research Working Paper No. 5988.

Gu, J. C., Lee, S. C., & Suh, Y. H. (2009). Determinants of behavioural intention to mobile banking. Expert Systems with Applications, 36(9), 11605-11616.

Jack, W., & Suri, T. (2011). Mobile money: The economics of M-Pesa. National Bureau of Economic Research Working Paper No. 16721.

King M. (2012). Is Mobile Banking Breaking the Tyranny of Distance to Bank Infrastructure? Evidence from Kenya. Trinity College, Dublin

Kumar K. (2010). Micro Finance and Mobile Banking - The Story So Far. Focus Note No. 62

Kyte, E. (2013). Expanding Bank Outreach Through Retail Partnerships: Correspondent Banking In Brazil. World Bank Working Paper No. 85

Porteous, D. (2006). The Enabling Environment for Mobile Banking in Africa. London: DFID.

Mbiti, I., & Weil, D. N. (2011). Mobile banking: The impact of M-Pesa in Kenya. National Bureau of Economic Research Working Paper No. 17129.

Ngugi, B., Pelowski, M., & Ogembo, J. G. (2010). M-Pesa: A case study of the critical early adopters' role in the rapid adoption of mobile banking in Kenya. Electronic Journal of Information Systems in Developing Countries, 43(1), 1-16.

Moffat, L. (2017). *The Relationship Between Technological Advancements and Operational Efficiency of Commercial Banks in Kenya* (Doctoral dissertation, University of Nairobi).

Mugo, M., & Kilonzo, E. (2017). Community–level impacts of financial inclusion in Kenya with particular focus on poverty eradication and employment creation. *Central Bank of Kenya*, *13*, 1-7.

Oloo, O. (2013). Banking survey. Think Business Ltd.

Orlikowski, W. J., & Barley, S. R. (2001). Technology and institutions: What can research on information technology and research on organisations learn from each other? *MIS Quarterly*, 145-165.

Rogers, E. M. (2003). Diffusion of innovations (5th ed.). Free Press.

Safaricom. (2022). M-Pesa services. Retrieved from https://www.safaricom.co.ke

Venable Telecommunications and Financial Services, (2008). Mobile Banking. White Paper of November 2008.