ELECTRONIC BANKING SERVICES AND PERFORMANCE OF COMMERCIAL BANKS IN MOMBASA COUNTY, KENYA

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ABSTRACT

The purpose of this study was to examine the influence of electronic banking services on performance of commercial banks in Mombasa County, Kenya. Specifically, the study sought to examine the influence of mobile banking and internet banking on performance of commercial banks in Mombasa County, Kenya. The theoretical framework was informed by the resource-based theory of the firm, dynamic capability theory and technology organization environment theory. The study employed the correlational cross-sectional survey research design to test non-causal relationships between the study variables. The target population consisted of the 98 branch managers and 98 operations managers of the 39 commercial banks in Mombasa County, Kenya. The proportionate stratified random sampling technique was utilized to select a sample size of 66 branch managers and 66 operations managers of the 39 commercial banks in Mombasa County, Kenya. A pilot study was conducted to ascertain the validity and reliability of the constructed survey questionnaire. A structured self-administered survey questionnaire was used as the means of collecting primary data. The study utilized a cross-sectional survey-based approach. The collected data was processed and entered into the statistical package for social sciences (SPSS) version 26 to create a data sheet used for analysis. Data analysis involved the use of descriptive statistics and inferential statistics. The Pearson's correlation results indicated that mobile banking and internet banking had positive and significant relationship with the performance of commercial banks in Mombasa County, Kenya. The regression results indicated that mobile banking and internet banking had positive and significant influence on the performance of commercial banks in Mombasa County, Kenya. The research recommends that the managers and practitioners within the banking industry should implement the electronic banking to foster the performance of commercial banks. The policymakers within the banking industry should initiate policy review to encourage managers and practitioners to implement the electronic banking to foster the performance of commercial banks. The study recommends intriguing areas for further research. Future research should examine the influence of electronic banking on performance of commercial banks in other sectors or contexts

Key words: *Electronic Banking, Internet Banking, Mobile Banking, Performance of Commercial Banks, Kenya*

INTRODUCTION

It is widely recognized that commercial banks are crucial in determining a nation's economic growth and stability. The stability of the financial system is of crucial importance for each country (Adede & Kising'u, 2024). The banking sector plays a crucial role in achieving the country's development goals in any economy, whether it is developed or underdeveloped (Dembel Tura, 2024). The commercial banks play a pivotal role by channeling funds from those who have a surplus by mobilizing deposits to those parties that need funds for investments. The banking sector plays a very important role in economic development through stimulation of savings and investment (Chowdhury, Haron, Sulistyowati, & Masud, 2022). In developing countries, commercial banks play a vital role in maintaining the stability of the financial system (Cvetkoska, Fotova Čiković, & Tasheva, 2021). In Kenya, commercial banks are the main central enablers of other main economic sectors through provision of capital and other financial support (Ongongo & Mang'ana, 2022). However, some banks have been experiencing poor performance due to liberalization and competition (Kihara, 2024; Kiptanui, Kwasira, & Amuhaya, 2024).

The importance of the banking sector in ensuring permanent, sustainable, and continuing economic growth cannot be overstated (Yuan, Gazi, Harymawan, Dhar, & Hossain, 2022). The banks collect deposits from surplus and provide loans to the investors that contribute to the total economic growth (Alam, Chowdhury, & Razak, 2021). The banking sector is considered the most important institution that plays a vital role in the nation's growth and development. The banks are financial institutions that play an indispensable role in the achievement of development goals through channeling funds from surplus parties to deficit parties (Dembel Tura, 2024). However, some commercial banks have remained stagnant and their revenues have merely grown for years (Kitemu, Sang, & Wachira, 2024). The commercial banks are experiencing a faster pace of change characterized by customers' sophistication, strict regulation and supervision, technology advancement, liberalization of banking license leading to rapid internationalization and challenges in performance (Ongongo & Mang'ana, 2022).

There is a rapid shift in adopting electronic banking services over the last decade (Sharma (2023). The majority of banks, if not all, adopted the use of electronic banking for transactions to enhance the performance of banks (Hailat, Jarah, Al-Jarrah, & Almatarneh, 2023; Singh, 2023). The electronic banking or e-banking systems allow consumers to freely access financial services (Chesir, Miroga, & Otinga, 2024; Hassan & Farmanesh, 2022). The use of e-banking can provide commercial banks a competitive advantage over competitors (Bellahcene & Latreche, 2023; Nasehifar, Dehdashti Shahrokh, Mohammadian, & Allahverdi, 2021). Therefore, e-banking is a major innovation in the field of banking (Malhotra, Sahadev, Leeflang, & Purani, 2021). However, in spite of the rapid shift in adopting e-banking services over the last decade, the influence of e-banking on overall bank performance has received little attention (Kumar & Pandey, 2023).

Statement of the Problem

Despite being an important contributor to the global economy, the commercial banks are experiencing challenges in performance (Ongongo & Mang'ana, 2022). Majority of the commercial banks have remained uncompetitive for decades and others have been closing down or downsizing to regain business and continue operating (Adede & Kising'u, 2024). The financial performance of the commercial banks based on average return on assets was reducing over the period of study, 4.7% in 2013, 3.4% in 2014, 2.9% in 2015, 3.3% in 2016, 2.7% in 2017, 2.7% in 2018, 2.6% in 2019 and 1.7% in 2020 (Mathina, Jagongo, & Wamugo, 2022). The decline in financial performance of commercial banks based on average return on assets is of high concern among various stakeholders (Malit, 2024; Mathina, 2022). Notwithstanding the momentous efforts by the central bank of Kenya, some commercial banks have been experiencing poor performance due to liberalization and competition (Kihara, 2024; Kiptanui *et al.*, 2024; Kombe, 2023).

Despite the rapid shift in adopting e-banking services over the last decade, the influence of e-banking on overall bank performance has received little attention (Kumar & Pandey, 2023). The growth in the banking

sector has only been tied to the large banks with the medium and small banks shrinking over time (Kitemu *et al.*, 2024). The commercial banks continue to show mixed performance with some banks posting good performance, while other banks showing ineffective performance (Kimathi & Deya, 2023; Ongena, 2024). The theoretical literature has emphasized that electronic banking plays an important role in explaining firm performance outcomes (Jiang, Ritchie, & Verreynne, 2023). However, the influence of e-banking on bank performance is still being debated (Ritu & Pandey, 2023). The existing empirical literature has produced mixed and inconsistent results. Majority of the empirical studies suggest that e-banking has a positive and significant influence on bank performance (Bousrih, 2023; Kumar & Pandey, 2023; Madugba *et al.*, 2022; Sharma, 2023). However, some empirical studies suggest that e-banking has an insignificant influence on bank performance (Gbanador, 2023; Hassan *et al.*, 2023).

Research Objectives

The general objective of this research was to examine the influence of electronic banking services on performance of commercial banks in Mombasa County, Kenya. The study's specific objectives were;

- To determine the influence of mobile banking on performance of commercial banks in Mombasa County, Kenya.
- To assess the influence of internet banking on performance of commercial banks in Mombasa County, Kenya.

In this research, two null hypotheses were tested.

- H_01: Mobile banking has no significant influence on performance of commercial banks in Mombasa County, Kenya.
- H_02: Internet banking has no significant influence on performance of commercial banks in Mombasa County, Kenya

LITERATURE REVIEW

Theoretical Framework

The theoretical framework was informed by the resource-based theory of the firm, dynamic capability theory and technology organization environment theory.

Resource-Based Theory

The resource-based theory (RBT) of the firm (Barney, 1991; Penrose, 2009; Penrose, 1959) suggests that companies with VRIN resources can outperform their competitors (Razzaque, Lee, & Mangalaraj, 2024). The RBT of the firm proposes that by utilizing digital technology, banks can increase operational efficiency, reduce costs, and provide better services to customers, thereby creating sustainable added value and superior performance (Al-shakrchy, 2024; Utami & Alamanos, 2022). The RBT of the firm posits that a firm's internal resources, rather than external market conditions, are the primary drivers of sustained competitive advantage (Alkaraan *et al.*, 2024). Therefore, the RBT of the firm provides a relevant underpinning theoretical framework to explain influence of electronic banking services on performance of commercial banks in Mombasa County, Kenya.

The RBT of the firm suggests that firms can create and sustain superior performance if they possess valuable, rare, inimitable, and non-substitutable resources (Bag, 2024). The RBT of the firm has emerged as a central theory in strategic management, particularly influencing how companies approach competitive advantage (Rao & Brown, 2024). Therefore, the RBT of the firm provides a relevant theoretical framework to explain influence of mobile banking and internet banking on performance of commercial banks in Mombasa County, Kenya.

Dynamic Capability Theory

The dynamic capability (DC) theory (Barney, 1991; Peteraf, 1993; Teece, Pisano, & Shuen, 1997a) is a strategic management framework that focuses on a firm's ability to adapt, innovate, and reconfigure its resources and capabilities in response to changing external environments and evolving market conditions (Bosman, 2024). The DC theory (Peteraf & Barney, 2003; Teece, Pisano, & Shuen, 1997b) posits that a firm's sustainable competitive advantage is derived not only from possessing valuable and rare resources but also from its electronic banking, enabling it to integrate, build, and reconfigure resources to meet the demands of a dynamic market (Alkaraan *et al.*, 2024). Therefore, the DC theory provides a relevant theoretical framework to explain influence of electronic banking services on performance of commercial banks in Mombasa County, Kenya.

The DC theory specifically focuses on how organizations can develop and use their capabilities in a highly dynamic and uncertain environment (Buzzao & Rizzi, 2023). The DC theory is suitable for measuring business performance in a dynamic environment, as it focuses on a company's ability to change and adapt to the changing environment (Baía & Ferreira, 2024; Teece, 2023). Therefore, the DC theory provides a relevant theoretical framework to explain influence of mobile banking and internet banking on performance of commercial banks in Mombasa County, Kenya.
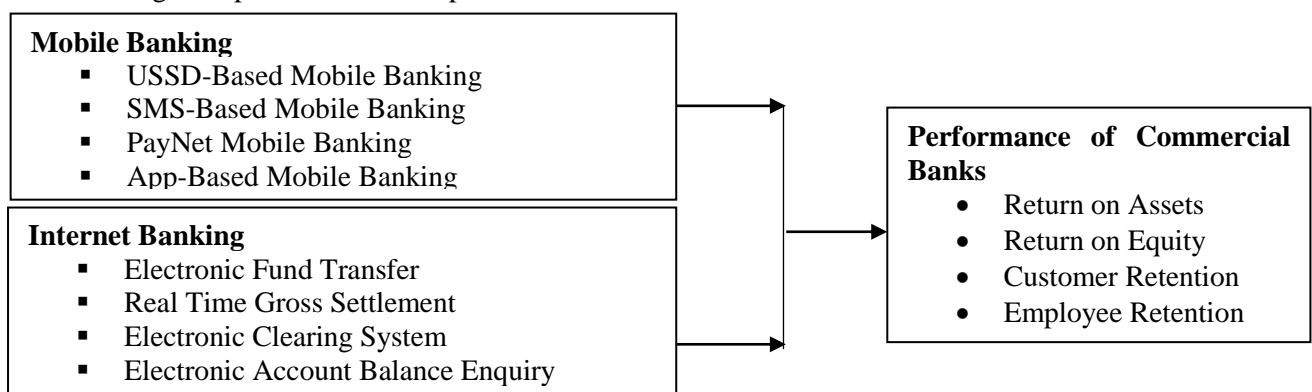
Technology Organization Environment Theory

The technology organization environment (TOE) theory (Rodgers, 2003; Tornatzky and Fleischer, 1990) identifies the critical technological, organizational and environmental influences on organizations' decision (Al-Dmour, Saad, Basheer Amin, Al-Dmour, & Al-Dmour, 2023; Ng, Lit, & Cheung, 2022). The TOE theory suggests that technology adoption information is critical and makes for informed investment decision in competitive environment (Malik, Chadhar, Vatanasakdakul, & Chetty, 2021). Therefore, the TOE theory is a relevant theoretical framework that explains the influence of electronic banking services on performance of commercial banks in Mombasa County, Kenya.

The TOE theory proposes that there are three key settings that affect how corporate organizations adopt and accept the usage of new technology in their daily operations (Al-Dmour *et al.*, 2023). It posits that the big data is rapidly being seen as a new frontier for improving organizational performance (Ghaleb, Dominic, Fati, Muneer, & Ali, 2021). Therefore, the TTF theory is an appropriate theoretical framework that explains the influence of mobile banking and internet banking on performance of commercial banks in Mombasa County, Kenya.

Conceptual Framework

The conceptual framework demonstrates that the performance of commercial banks is conceptualized as the dependent variable. However, mobile banking and internet banking are conceptualized as the independent variables. Figure 1 presents the conceptual framework.

| **Mobile Banking** |
| ▪ USSD-Based Mobile Banking |
| ▪ SMS-Based Mobile Banking |
| ▪ PayNet Mobile Banking |
| ▪ App-Based Mobile Banking |

| **Internet Banking** |
| ▪ Electronic Fund Transfer |
| ▪ Real Time Gross Settlement |
| ▪ Electronic Clearing System |
| ▪ Electronic Account Balance Enquiry |

Performance of Commercial Banks
- Return on Assets
- Return on Equity
- Customer Retention
- Employee Retention

Independent Variables   **Dependent Variable**

Figure 1: Conceptual Framework

Review of Literature on Variables

Mobile Banking

Mobile banking is an e-banking service provided by a bank or other financial institution that allows its customers to conduct financial transactions remotely using a mobile device such as a smartphone or tablet (Omoto, 2021; Pradhan *et al.*, 2021). It is the provision of banking and financial services with the help of mobile telecommunication devices (Basajji, 2021; Gbanador, 2023). Mobile banking is an innovative online banking channel enabling customers to carry out financial transactions using mobile devices, smartphones, or personal digital assistants (Hassan & Farmanesh, 2022). Therefore, mobile banking involves the use of mobile devices in the provision of banking services (Ndirangu & Kimani, 2022).

Internet Banking

Internet banking is the operation of accounts through internet. Extant literature posits that internet banking or online banking is a financial service that involves conducting banking transactions through the internet (Ghose & Maji, 2022). Internet banking is the banking applications that allow customers to access and conduct their financial transactions using the World Wide Web, Wi-Fi technologies and the internet, at a time and place of their choosing (Hassan, Abuga, & Ndalilah, 2023; Hassan & Farmanesh, 2022). Additionally, internet banking is the use of an electronic payment system that enables customers of a bank or other financial institution to conduct a range of financial transactions through the financial institution's website (Pradhan *et al.*, 2021).

Performance of Commercial Banks

The performance of commercial banks has emerged as a key concept in strategic management research. Bank performance is considered as the level of success that banks achieve in allocating input resources to optimize output, reflecting the level of use of resources to achieve defined goals (Ahmed, Majeed, Thalassinos, & Thalassinos, 2021; Do, Pham, Thalassinos, & Le, 2022; Teshome, Arshad, & Borji, 2025). The efficient performance of commercial banks creates confidence in the financial system of a country leading to sustainable development (Walowe, 2021). An efficient, stable and well-functioning banking system contributes to the economic growth of a country (Njoki & Nyamute, 2023). However, the decline in the performance of commercial banks attracts negative externalities in the economy in terms of declined savings, lending, investments and a negative contribution to the gross domestic product (Mutegi *et al.*, 2023).

The performance of commercial banks refers to the measure of how a bank achieves better results than its competitors. The financial performance indicators are expressed in monetary terms (Titilayo *et al.*, 2022). However, the non-financial performance indicators are not expressed in monetary terms and are characterized by greater subjectivity in regards to financial measures (Benvolio & Ironkwe, 2022). The financial performance measures are generally more easily measurable, as they are based on objective data (Benvolio & Ironkwe, 2022; Cupertino, Vitale, & Taticchi, 2023). Nevertheless, the non-financial performance measures can be more difficult to measure as they are often subjective, based on perceptions, attitudes, and opinions (Maletič, Gomišček, & Maletič, 2021). The financial performance measures only reveal past performance of an organization which may not reflect the present or future state of a firm (Alzghoul *et al.*, 2024). Nonetheless, the non-financial performance measures are superior predictors of the future economic performance of the firm and are more closely tied to the corporate and business-level strategy of the firms (Mahohoma, 2024). Therefore, the non-financial performance measures act as a missing link between the value-driving activities and economic performance of the firm (Zarzycka & Krasodomska, 2022).

Empirical Review

Mobile Banking and Performance of Commercial Banks

Uwimpuhwe and Twesigye (2024) examined the influence of mobile banking on operational performance of commercial banks in Rwanda. The results indicated that mobile banking had a positive and significant

relationship with operational performance of commercial banks. The findings indicated that mobile banking had a positive and significant influence on operational performance of commercial banks.

Gbanador (2023) examined the influence of mobile banking system on the performance of deposit money banks in Nigeria. The findings indicated that, in the short-run, mobile banking system had no significant impact on performance of deposit money banks. However, the results showed that, in the long-run, mobile banking had a positive and significant influence on the performance of deposit money banks.

Kimere (2022) examined the influence of mobile banking on financial performance of microfinance institutions in Kenya. The results indicated that mobile banking had a positive and significant had a positive and significant relationship with financial performance of microfinance institutions. The findings indicated that mobile banking had a positive and significant influence on financial performance of microfinance institutions.

Pradhan, Shyam, and Dahal (2021) examined the influence of mobile banking on performance of microfinance banks. The results indicated that mobile banking had a positive and significant had a positive and significant relationship with performance of microfinance banks. The findings revealed that mobile banking had a positive and significant influence on performance of microfinance banks.

Ndirangu and Kimani (2022) examined the influence of mobile banking on performance of microfinance banks in Kenya. The results indicated that mobile banking had a positive and significant had a positive and significant relationship with performance of microfinance banks. The findings indicated that mobile banking had a positive and significant influence on financial performance of microfinance banks.

Internet Banking and Performance of Commercial Banks
Uwimpuhwe and Twesigye (2024) examined the influence of internet banking on operational performance of commercial banks in Rwanda. The results indicated that internet banking had a positive and significant relationship with operational performance of commercial banks. The findings indicated that internet banking had a positive and significant influence on operational performance of commercial banks.

Kimere (2022) examined the influence of internet banking on financial performance of microfinance institutions in Kenya. The results indicated that internet banking had a positive and significant relationship with financial performance of commercial banks. The findings indicated that internet banking had positive but insignificant influence on financial performance of microfinance institutions in Kenya.

Madugba *et al.* (2021) examined the influence of internet banking on financial performance of deposit money banks in Nigeria. The findings indicated that national electronic fund transfer had a negative and significant influence on financial performance, while web banking of deposit money banks. The results indicated that web banking had a positive but insignificant influence on financial performance of deposit money banks. The findings showed that electronic banking had a positive and significant influence on financial performance of deposit money banks.

Ghose & Maji (2022) examined the influence of internet banking on bank profitability in India. The results indicated that that internet banking had positive and significant relationship with on performance of public sector banks. The results showed that internet banking had positive and significant influence on performance of public sector banks.

METHODOLOGY

Research Philosophy
The research was guided by the positivist research philosophy which regards the world as made up of observable and measurable facts and assumes that there is an objective reality out there. The positivist

research philosophy regards the world as made up of observable and measurable facts and assumes that there is an objective reality out there (Ma & Xie, 2023; Saunders & Darabi, 2024).

Research Design

Drawing from the quantitative non-experimental research methodology, the research utilized a correlational cross-sectional survey research design to examine the non-causal relationship between study variables. The design was appropriate for collecting data once from many individuals at a single point in time to test statistical relationships between two or more variables without the researcher controlling or manipulating any of them (Leavy, 2022; Bell, Bryman, & Harley, 2022).

Target Population

The target population consisted of 98 branch managers and 98 operations managers of the 98 branches of the 39 commercial banks in Mombasa County, Kenya, as per the Central Bank of Kenya's database as at 31st December, 2024. The unit of observation consisted of the branch manager and operations manager, while the unit of analysis consisted of the commercial bank. Table 1 presents the target population.

Table 1: Target Population

Strata	Target Population	Percentage
Branch Managers	98	50.0%
Operations Managers	98	50.0%
Total	**196**	**100.0%**

Source: Central Bank of Kenya (CBK, 2024)

Sampling Frame

A sampling frame is the complete and correct list of population constituency of a given population (Thomassen, le Cessie, van Houwelingen, & Steyerberg, 2024). The sampling frame consisted of the list of the 98 branches of the 39 commercial banks in Mombasa County, Kenya. There were 39 commercial banks with 98 branches in Mombasa County, as per the Central Bank of Kenya's database as at 31st December 2024.

Sample Size and Sampling Techniques

This section presents the sample size and sampling techniques.

Sample Size

The Yamane (1967) formula was used to calculate sample size at 95% confidence level and 5% significance level to ensure that the sample size was truly reflective of the target population.

$$n = \frac{N}{1 + Ne^2)}$$

Where:

n = Sample Size;
N = Target Population;
e = Margin of Error

For a target population totaling to 196 managers consisting of 98 branch managers and 98 operations managers of the 98 branches of the 39 commercial banks in Mombasa County, Kenya, at 95% confidence level and 5% significance level, the sample size was determined as:

$$n = \frac{196}{1 + 196\,(0.05)^2)} = 132$$

Therefore, the minimum recommended sample size was 132 managers consisting of 66 branch managers and 66 operations managers of the 39 commercial banks in Mombasa County, Kenya. Table 2 presents the sample size.

Table 2: Sample Size

Strata	Target Population	Sample Size
Branch Managers	98	66
Operations Managers	98	66
Total	**196**	**132**

Sampling Techniques

The proportionate stratified random sampling technique utilized to select a sample size of 66 branch managers and 66 operations managers from a target population of 98 branch managers and 98 operations managers of the 39 commercial banks in Mombasa County, Kenya. The choice of the proportionate stratified random sampling technique was justified by the heterogeneous target population (Hiebl, 2023). The proportionate stratified random sampling is a probability sampling technique in which each stratum is given equal chance to be selected randomly in to the sample (Leavy, 2022).

Data Collection Methods

Primary data was collected using a self-administered structured survey questionnaire. The data collection method was appropriate. The choice of the self-administered structured survey questionnaire was justified by its ability to collect a large amount of information in a reasonably quick span of time (Dubey & Kothari, 2022; Shrivastava, Singh, Gurjar, & Kushawaha, 2024).

Data Collection Procedures

A cross-sectional survey-based approach was employed for the collection of primary data. The choice of the cross-sectional survey-based approach was justified by its ability to permit the fast collection of primary data from many different individuals at a single point in time. The cross-sectional survey-based approach facilitates the collection of data from many different individuals at a single point in time (Leavy, 2022). With the help of 3 research assistants, the researcher utilized the drop and pick method to hand deliver the survey questionnaire to the random sample of 66 branch managers and 66 operations managers of the 39 commercial banks in Mombasa County, Kenya. A continuous follow up on responses was made by the researcher and research assistants.

Pilot Study

A pilot study was conducted to test the validity and reliability of the developed survey questionnaire. The pilot study was conducted with a pilot trial sample size of 7 branch managers and 7 operations managers from 7 branches of commercial banks in Mombasa County, Kenya. The sample size of the pilot study consisted of 10% of the full-scale survey sample size. A common rule of thumb for pilot study is that a pilot study should be conducted with a minimum size of at least 10-20% of the full-scale survey sample size (Cheung, Cooper-Thomas, Lau, & Wang, 2024; Leong, Hew, Ooi, Tan, & Koohang, 2024). However, the respondents in the pilot study were not be included in the main survey.

Data Processing and Analysis

The collected data was checked for accuracy, completeness and consistency. The data was coded, edited, and entered into the Statistical Package for Social Sciences (SPSS) version 26 to create a data sheet that was used for analysis. The descriptive statistics and inferential statistics were used for data analysis. The descriptive statistics were used to compute, summarize the data in respect to each of the study variables and describe the sample's characteristics. The Pearson's product moment correlation analysis was performed to confirm or

deny the relationship between the study variables. A multiple linear analysis was performed with the performance of commercial banks as the dependent variable and mobile banking and internet banking as the predictor variables.

Model Specification

The multiple linear regressions model was specified as:

$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \varepsilon$ …………………………………….… Model 1

Where:

Y = Performance of Commercial Banks
β_0 = Constant Term
$\beta_1 - \beta_2$ = Regression coefficients to be estimated
X_1 = Mobile banking
X_2 = Internet banking
ε = Stochastic Error Term

Hypotheses Testing

In this research, two null hypotheses were tested at 5% level of significance ($\alpha = 0.05$; $t = 1.960$) to statistically help draw acceptable and realistic inferences. Therefore, the decision rule was to reject the $H_0 i$ if the $P \leq 0.05$, and otherwise fail to reject the $H_0 i$ if the $P > 0.05$. Table 3 presents the hypotheses testing

Table 3: Hypotheses Testing

Hypotheses		Model	Hypotheses Testing	Decision Rule
$H_0 1$:	Mobile banking has no significant influence on performance of commercial banks in Mombasa County, Kenya.	$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \varepsilon$ …. Model 3.1	Standard Multiple regression analysis	$H_0 1$: $\beta_1 = 0$ $H_1 1$: $\beta_1 \neq 0$ If the $P \leq 0.05$, reject the $H_0 1$. If the $P > 0.05$, fail to reject the $H_0 1$.
$H_0 2$:	Internet banking has no significant influence on performance of commercial banks in Mombasa County, Kenya.			$H_0 2$: $\beta_2 = 0$ $H_1 2$: $\beta_2 \neq 0$ If the $P \leq 0.05$, reject the $H_0 2$. If the $P > 0.05$, fail to reject the $H_0 2$.

procedure.

FINDINGS

Response Rate

Out of the 132 survey questionnaires distributed for main study, 106 usable survey questionnaires were returned. Therefore, there was a valid response rate of 80.3%, which was adequate for data analysis and reporting. Existent literature posits that survey response rates of 80% or higher are needed if findings are to be considered generalizable (Ericson *et al.*, 2023). Table 4 presents the response rate results.

Table 4: Response Rate

Strata	Frequency	Percentage
Response	106	80.3%
Non-Response	26	19.7%
Total	**132**	**100.0%**

Correlation Results

The Pearson's product moment correlation analysis was performed to confirm or deny the relationships between the study variables. The correlation results indicated that mobile banking had a strong positive and significant relationship with the performance of commercial banks ($r = 0.736$, $p \leq 0.05$) in Mombasa County, Kenya. The correlation results showed that internet banking had a strong positive and significant relationship with the performance of commercial banks ($r = 0.721$, $p \leq 0.05$) in Mombasa County, Kenya. Table 5 presents

Table 5: Correlation Results

Variable		X_1	X_2	Y
Mobile Banking (X_1)	Pearson Correlation	1		
	Sig. (2-tailed)			
	n	106		
Internet Banking (X_2)	Pearson Correlation	.538**	1	
	Sig. (2-tailed)	.000		
	n	106	106	
Performance of Commercial Banks(Y)	Pearson Correlation	.736**	.721**	1
	Sig. (2-tailed)	.000	.000	
	n	106	106	106

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

Multiple Regression Results

A standard multiple linear analysis was performed with the performance of commercial banks as the dependent variable and mobile banking and internet banking as the predictor variables.

Model Summary

From the model summary in table, it is clear that the value of coefficient of correlation (R) was 0.831, suggesting that there was a strong positive correlation between the electronic banking and the performance of commercial banks in Mombasa County, Kenya. The value of coefficient of determination (R^2) was 0.691, suggesting that the overall model as a whole (the model involving constant, mobile banking and internet banking) was able to significantly predict and explain approximately 69.1% of the variance in the performance of commercial banks in Mombasa County, Kenya. The value of the adjusted R^2 was 0.685, suggesting that the overall model as a whole (the model involving constant, mobile banking and internet banking) significantly predicted and explained 68.5% of the variance in the performance of commercial banks in Mombasa County, Kenya.

The value of the std. error of the estimate was 0.207, suggesting that there could be other factors not included in the model in the current study that could predict and explain the remaining 31.5% of the variance in the performance of commercial banks in Mombasa County, Kenya. Therefore, there is in need for future research to discover the other electronic banking not included in the model in the current study that also predict the remaining variance in the performance of commercial banks in Mombasa County, Kenya. The value of the Durbin-Watson test was 2.122, falling within the optimum range of 1.5 to 2.5, suggesting that there was no severe autocorrelation detected in the in the residual values in the datasets. Generally, Durbin-Watson statistics falling within the optimum range of 1.5 to 2.5 indicates that there is no severe autocorrelation

detected in the in the residual values in the datasets (Hair *et al.*, 2021). Table 6 presents the model summary results.

Table 6: Model Summary[b] Results

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.831[a]	.691	.685	.207	2.122

a. Predictors: (Constant), Internet banking (X_2), Mobile banking (X_1)

b. Dependent Variable: Firm Performance (Y)

Analysis of Variance

From the ANOVA table, the overall model as a whole (the model involving constant, mobile banking and internet banking), achieved a high degree of fit, as reflected by $R^2 = 0.691$, adj. $R^2 = 0.685$, F (2, 103) = 114.916, $p \leq 0.05$. The null hypothesis was that the linear combination of predictor variables (mobile banking and internet banking) was not able to significantly predict the performance of commercial banks in Mombasa County, Kenya. However, the alternative hypothesis was that the linear combination of predictor variables (mobile banking and internet banking) was able to significantly predict the performance of commercial banks in Mombasa County, Kenya. The standard multiple linear regression results showed that the linear combination of predictor variables (mobile banking and internet banking) significantly predicted the performance of commercial banks in Mombasa County, Kenya. The null hypothesis was rejected in favor of the alternative hypothesis. Therefore, the decision was that the linear combination of predictor variables (mobile banking and internet banking) significantly predict the performance of commercial banks in Mombasa County, Kenya. Table 7 presents the ANOVA results.

Table 7: ANOVA[a] Results

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9.893	2	4.947	114.916	.000[b]
	Residual	4.434	103	.043		
	Total	14.327	105			

a. Dependent Variable: Performance of Commercial Banks (Y)

b. Predictors: (Constant), Internet Banking (X_2), Mobile Banking (X_1)

Multiple Regression Coefficients

From the coefficients table, when the unstandardized regression coefficients (B) were substituted to the multiple regression model specified for the study, the final predictive equation was:

$$Y = 1.864 + 0.283X_1 + 0.246X_2$$

The final predictive equation suggested that holding all factors in to account constant (mobile banking and internet banking), constant at zero, the performance of commercial banks would be 1.864 in Mombasa County, Kenya. The final predictive equation suggested that with all other factors held constant, a unit increase in mobile banking would lead to 0.283 unit increase in the performance of commercial banks in Mombasa County, Kenya. Additionally, the final predictive equation suggested that with all other factors held constant, a unit increase in internet banking would lead to 0.246 unit increase in the performance of commercial banks in Mombasa County, Kenya. Based on the magnitude of the unstandardized regression coefficients (B) of the independent variables, mobile banking was the better predictor of the variance in the performance of commercial banks in Mombasa County, Kenya.

The multiple regression results indicated that mobile banking had a positive and significant influence on the performance of commercial banks (β_1 = 0.490; t = 7.542; p $\leq$ 0.05) in Mombasa County, Kenya. The regression results indicated that internet banking had a positive and significant influence on the performance of commercial banks (β_2 = 0.457; t = 7.036; p $\leq$ 0.05) in Mombasa County, Kenya.

Table 8 presents the multiple regressions coefficients results.

Table 8: Multiple Regression Coefficients[a] Results

Model	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1 (Constant)	1.864	.133		13.971	.000		
Mobile banking (X_1)	.283	.037	.490	7.542	.000	.763	1.310
Internet banking (X_2)	.246	.035	.457	7.036	.000	.711	1.406

a. Dependent Variable: Performance of Commercial Banks (Y)

Hypotheses Test Results
In this research, two null hypotheses were tested. The H_01 and H_02 were tested at 5% level of significance, α = 0.05, t = 1.960, and 95% confidence level to statistically help draw acceptable and realistic inferences. Therefore, the decision rule was to reject the H_0i if the P $\leq$ 0.05, and otherwise fail to reject the H_0i if the P > 0.05.

Hypothesis One Test Results
The first null hypothesis (H_01) predicted that mobile banking has no significant influence on performance of commercial banks in Mombasa County, Kenya. The decision rule was to reject the null hypothesis H_01 if the $\beta_1 \neq 0$, t $\geq$ 1.960, P $\leq$ 0.05, and otherwise fail to reject the H_01 if the $\beta_1 = 0$, t < 1.960, P > 0.05. The regression results indicated that mobile banking had a positive and significant influence on the performance of commercial banks (β_1 = 0.490; t = 7.542; p $\leq$ 0.05) in Mombasa County, Kenya. Therefore, the decision was to reject the H_01, and then conclude that mobile banking has a significant influence on performance of commercial banks in Mombasa County, Kenya.

Hypothesis Two Test Results
The H_02 predicted that internet banking has no significant influence on performance of commercial banks in Mombasa County, Kenya. The decision rule was to reject the H_02 if the $\beta_2 \neq 0$, t $\geq$ 1.960, P $\leq$ 0.05, and otherwise fail to reject the H_02 if the $\beta_2 = 0$, t < 1.960, P > 0.05. The regression results indicated that internet banking had a positive and significant influence on the performance of commercial banks (β_2 = 0.457; t = 7.036; p $\leq$ 0.05) in Mombasa County, Kenya. Therefore, the decision was to reject the H_02, and then conclude that internet banking has a significant influence on performance of commercial banks in Mombasa County, Kenya. Table 9 presents the hypotheses test results.

Table 9: Hypotheses Test Results

Hypothesis	β	t	Sig.	Decision
H_01: Mobile banking has no significant influence on performance of commercial banks in Mombasa County, Kenya.	.490	7.542	.000	Reject the H_01
H_02: Internet banking has no significant influence on performance of commercial banks in Mombasa County, Kenya.	.457	7.036	.000	Reject the H_02

Discussions

The purpose of this quantitative correlational research was to examine the influence of electronic banking services on the performance of commercial banks in Mombasa County, Kenya. Specifically, the research sought to examine the influence of mobile banking and internet banking on the performance of commercial banks in Mombasa County, Kenya. The Pearson's product moment correlation analysis was performed to confirm or deny the relationship between the study variables. The correlation results indicated that the electronic banking had positive and significant relationship with performance of commercial banks in Mombasa County, Kenya. A standard multiple linear analysis was performed with performance of commercial banks as the dependent variable and mobile banking and internet banking as the predictor variables. The regression results showed that the electronic banking services had positive and significant influence on the performance of commercial banks in Mombasa County, Kenya. The findings were consistent with the results of prior studies (Kimere, 2022; Kumar & Pandey, 2023; Sharma, 2023; Uwimpuhwe & Twesigye, 2024). However, the results were inconsistent with the results of prior studies (Gbanador, 2023; Hossain, 2021).

The first specific objective was to determine the influence of mobile banking on the performance of commercial banks in Mombasa County, Kenya. The first null hypothesis (H_01) predicted that mobile banking has no significant influence on performance of commercial banks in Mombasa County, Kenya. The Pearson's correlation results indicated that mobile banking had a strong positive and significant relationship with the performance of commercial banks in Mombasa County, Kenya. The regression results showed that mobile banking had a positive and significant influence on performance of commercial banks in Mombasa County, Kenya. Therefore, the decision was to reject the H_01, and then conclude that mobile banking has a significant influence on performance of commercial banks in Mombasa County, Kenya. The findings were in harmony with the results of past research (Kimere, 2022; Ndirangu & Kimani, 2022). The results were consistent with the results of previous studies (Obbo, 2022; Uwimpuhwe & Twesigye, 2024). However, the results were inconsistent with the results of prior research (Gbanador, 2023).

The second specific objective was to assess the influence of internet banking on performance of commercial banks in Mombasa County, Kenya. The second null hypothesis (H_02) predicted that internet banking has no significant influence on performance of commercial banks in Mombasa County, Kenya. The Pearson's correlation results indicated that internet banking had a strong positive and significant relationship with performance of commercial banks in Mombasa County, Kenya. The regression results showed that internet banking had a positive and significant influence on performance of commercial banks in Mombasa County, Kenya. Therefore, the decision was to reject the H_02, and then conclude that internet banking has a significant influence on performance of commercial banks in Mombasa County, Kenya. The results were consistent with the results of previous studies (Barasa, 2021; Kimere, 2022; Madugba *et al.*, 2021; Uwimpuhwe & Twesigye, 2024).

CONCLUSIONS AND RECOMMENDATIONS

The purpose of this quantitative correlational research was to examine the influence of electronic banking services on performance of commercial banks in Mombasa County, Kenya. The Pearson's product moment correlation analysis was performed to confirm or deny the relationship between the study variables. The

correlation results indicated that the electronic banking had positive and significant relationship with performance of commercial banks in Mombasa County, Kenya. A standard multiple linear analysis was performed with performance of commercial banks as the dependent variable and mobile banking and internet banking as the predictor variables. The regression results showed that the electronic banking services had positive and significant influence on the performance of commercial banks in Mombasa County, Kenya.

The first specific objective was to determine the influence of mobile banking on the performance of commercial banks in Mombasa County, Kenya. The H_01 predicted that mobile banking has no significant influence on performance of commercial banks in Mombasa County, Kenya. The correlation results indicated that mobile banking had a strong positive and significant relationship with the performance of commercial banks in Mombasa County, Kenya. The regression results showed that mobile banking had a positive and significant influence on performance of commercial banks in Mombasa County, Kenya. Therefore, the decision was to reject the H_01, and then conclude that mobile banking has a significant influence on performance of commercial banks in Mombasa County, Kenya.

The second specific objective was to assess the influence of internet banking on   performance of commercial banks in Mombasa County, Kenya. The H_02 predicted that internet banking has no significant influence on performance of commercial banks in Mombasa County, Kenya. The correlation results indicated that internet banking had a strong positive and significant relationship with performance of commercial banks in Mombasa County, Kenya. The regression results showed that internet banking had a positive and significant influence on performance of commercial banks in Mombasa County, Kenya. Therefore, the decision was to reject the H_02, and then conclude that internet banking has a significant influence on performance of commercial banks in Mombasa County, Kenya.

The purpose of this quantitative correlational research was to examine the influence of electronic banking services on performance of commercial banks in Mombasa County, Kenya. The Pearson's product moment correlation analysis was performed to confirm or deny the relationship between the study variables. The correlation results indicated that the electronic banking services had positive and significant relationship with performance of commercial banks in Mombasa County, Kenya. A standard multiple linear analysis was performed with performance of commercial banks as the dependent variable and mobile banking and internet banking as the predictor variables. The regression results showed that the electronic banking services had positive and significant influence on the performance of commercial banks in Mombasa County, Kenya. Therefore, the conclusion was that electronic banking services significantly influence the performance of commercial banks in Mombasa County, Kenya.

The first specific objective was to determine the influence of mobile banking on the performance of commercial banks in Mombasa County, Kenya. The H_01 predicted that mobile banking has no significant influence on performance of commercial banks in Mombasa County, Kenya. The Pearson's correlation results indicated that mobile banking had a strong positive and significant relationship with the performance of commercial banks in Mombasa County, Kenya. The regression results showed that mobile banking had a positive and significant influence on performance of commercial banks in Mombasa County, Kenya. The H_01 was rejected, providing the empirical support for H_11. Therefore, the first conclusion was that mobile banking has a significant influence on performance of commercial banks in Mombasa County, Kenya.

The second specific objective was to assess the influence of internet banking on   performance of commercial banks in Mombasa County, Kenya. The H_02 predicted that internet banking has no significant influence on performance of commercial banks in Mombasa County, Kenya. The Pearson's correlation results indicated that internet banking had a strong positive and significant relationship with performance of commercial banks in Mombasa County, Kenya. The regression results showed that internet banking had a positive and significant influence on performance of commercial banks in Mombasa County, Kenya. The H_02 was rejected,

providing the empirical support for $H_1 2$. Therefore, the second conclusion was that internet banking has a significant influence on performance of commercial banks in Mombasa County, Kenya.

Managerial Implications: The research recommends that the managers and practitioners should consider a holistic reassessment and implementation of the electronic banking to foster the performance of the performance of commercial banks. First, the managers and practitioners should consider a holistic reassessment and implementation of mobile banking to foster the performance of the performance of commercial banks. Second, the managers and practitioners should consider a holistic reassessment and implementation of internet banking to foster the performance of the performance of commercial banks.

Policy Implications: The research recommends that the policy makers should initiate policy review to motivate the managers and practitioners to consider a holistic reassessment and implementation of the electronic banking to foster the performance of the performance of commercial banks. First, the policy makers should initiate policy review to motivate the managers and practitioners to consider a holistic reassessment and implementation of mobile banking to foster the performance of the performance of commercial banks. Second, the policy makers should initiate policy review to motivate the managers and practitioners to consider a holistic reassessment and implementation of internet banking to foster the performance of the performance of commercial banks.

Limitations and Future Research

The research suggests interesting areas for further research. First, future research should examine the influence of other electronic banking on the performance of commercial banks in other regions or contexts. Second, future research should examine the influence of other electronic banking on the performance of microfinance banks in other regions or contexts. Third, future research should examine the moderating influence of technological turbulence on the relationship between electronic banking and performance of commercial banks in other regions or contexts.

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